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**Understanding and Strengthening
European Union-Canada Relations in
Law of the Sea and Ocean Governance**

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Erik J. Molenaar, David L. VanderZwaag

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Table of Contents:

List of Figures and Tables	XIII
About the Authors	XV
Abbreviations	XXIII
Chapter 1: Introduction, Aldo Chircop, Erik Franckx, Timo Koivurova, Erik J. Molenaar, and David L. VanderZwaag	1
Part I: Ocean Governance and Maritime Policy Making	7
Chapter 2: Challenges to Ocean Policy Making, Erik Franckx	9
2.1. Introduction	9
2.2. National Ocean Policies: A General Comparison	10
2.3. Conclusion.....	17
Chapter 3: Comparing the Integrated Maritime Policy of the European Union and the Oceans Policy of Canada, Timo Koivurova.....	19
3.1. Introduction	19
3.2. The Emergence of National Integrated Ocean Policies: Problems and Possibilities.....	20
3.3. Comparison Between the European Union and Canadian Approaches to Ocean Policy	23
3.4. Evaluation.....	33
Chapter 4: Oceans Policy: A Canadian Case Study, Camille Mageau, David L. VanderZwaag, and Susan Farlinger.....	35
4.1. Introduction	35
4.2. Ocean Policy Context, Processes and Institutional Arrangements	36
4.2.1. Basic Information.....	36

4.2.2. Brief Overview of Nature and Evolution of National Oceans Policy	40
4.2.3. Policy Development Processes	41
4.2.4. Institutional Arrangements and Processes Used	45
4.3. Nature of the Policy and Legislation Established	50
4.3.1. Nature of the Resulting Policy	50
4.3.2. Implementation of Principles	51
4.3.3. Authority at National Level	62
4.3.4. National and Sub-National Division of Authority	64
4.3.5. Domestic Implementation of International Agreements	66
4.3.6. Enforcement	76
4.3.7. Research and Education	78
4.3.8. Financing	79
4.4. Implementation, Evaluation and Long-term Outlook	79
4.4.1. Monitoring and Reporting	80
4.4.2. Outlook	82
4.5. Lessons Learned	83
4.6. Conclusion	86

Chapter 5: Maritime Spatial Planning: About the Sustainable

Management of the Use of Our Seas and Oceans, <i>Nicole Schäfer</i>	89
5.1. Introduction	89
5.2. The Emergence of Maritime Spatial Planning	92
5.2.1. The Current Situation: Use Without Coordination	92
5.2.2. Maritime Spatial Planning: A Key Tool for Sustainable Decision Making	94
5.3. Current Practices	97
5.3.1. Examples from European Countries	98
5.3.2. International Good Practices	100
5.4. Challenges for Implementation and Future Development of MSP	101
5.4.1. MSP in the High Seas	101
5.4.2. International Governance Structures	102
5.4.3. Cumulative Effects of Maritime Uses	102
5.4.4. Compatibility of Uses: The Different Dimensions of MSP	103
5.4.5. Educational Needs	103
5.5. Conclusion	104

Chapter 6: Canada, the European Union, and Arctic Ocean Governance:

A Tangled and Shifting Seascape and Future Directions, *Timo Koivurova, Erik J. Molenaar, and David L. VanderZwaag* 107

- 6.1. Introduction 107
- 6.2. Tangled Governance 109
 - 6.2.1. The Law of the Sea and the Arctic Ocean 109
 - 6.2.2. Rights, Interests and Obligations of the EU and its Member States 111
 - 6.2.3. Canada and the Law of the Sea in the Arctic 114
 - 6.2.4. The Arctic Council and the Marine Environment 118
 - 6.2.5. The Role of the EU 121
 - 6.2.6. The Role of Canada 121
 - 6.2.7. Shifting Seascape 122
 - 6.2.8. Challenges to the Present Regime from the Part of Observers to the Arctic Council 124
 - 6.2.9. Recent Initiatives from the United States and the Arctic Ocean Coastal States 126
 - 6.2.10. EU Arctic Policy Developments 129
 - 6.2.11. The Role of Canada 133
- 6.3. Future Directions 136
 - 6.3.1. Adjusting the Spatial Scope of the NEAFC Convention 137
 - 6.3.2. Adjusting the Spatial Scope of the OSPAR Convention 141
 - 6.3.3. Implementing Agreement under the LOS Convention 143
 - 6.3.4. Arguments For and Against a New International Legally-Binding Instrument for the Governance and Regulation of the Arctic Ocean... 145

Workshop Discussion Summary: Ocean Governance and Maritime Policy Making, *Susan Rolston* 147

Part II: Ocean Resources 149

Chapter 7: Ocean Renewable Energy in the European Union:

Understanding and Strengthening EU-Canada Relations in Law of the Sea and Ocean Governance, *Freedom-Kai Phillips*..... 151

- 7.1. Introduction 151

7.1.1. Energy Governance in the EU – Starting Points.....	151
7.2. The European Regulatory Framework	153
7.2.1. The Renewables Directive	157
7.3. Regulatory Frameworks in the Member States	166
7.3.1. Belgium.....	167
7.3.2. Denmark.....	168
7.3.3. France.....	169
7.3.4. Ireland	170
7.3.5. Portugal	171
7.3.6. Spain	173
7.3.7. Sweden.....	174
7.3.8. United Kingdom.....	175
7.3.9. Concluding Analysis.....	176
7.4. Scottish Strategic Environmental Assessment (SEA) – Case Study.....	177
7.4.1. Impacts on the Biological Environment	177
7.4.2. Impacts on the Human Environment	180
7.4.3. Additional Environmental Impacts	184
7.4.4. Recommendations for Future Projects.....	187
7.5. Concluding Remarks	188

Chapter 8: The Role of Strategic Environmental Assessments in Energy

Governance: A Case Study of Tidal Energy in Nova Scotia’s Bay of

Fundy, Meinhard Doelle	191
8.1. Introduction	191
8.2. The Constitutional Context	194
8.3. The Federal Regulatory Framework	195
8.3.1. <i>Fisheries Act</i>	196
8.3.2. <i>Canadian Environmental Assessment Act</i>	196
8.3.3. <i>Species At Risk Act (SARA)</i>	197
8.3.4. <i>Navigable Waters Protection Act (NWPA)</i>	199
8.3.5. <i>National Energy Board Act (NEBA)</i>	199
8.4. The Provincial Regulatory Framework.....	200
8.4.1. <i>Nova Scotia Environment Act (NSEA)</i>	201
8.4.2. <i>Fisheries and Coastal Resources Act (FCRA)</i>	201
8.4.3. <i>Endangered Species Act (ESA)</i>	202
8.4.4. <i>Energy Resources Conservation Act (ERCA)</i>	203
8.4.5. <i>Electricity Act</i>	204
8.4.6. <i>Public Utilities Act (Utilities Act)</i>	204

8.4.7. Environmental Goals and Sustainable Prosperity Act (EGSPA)	205
8.5. The SEA Process	206
8.5.1. SEA Literature	207
8.5.2. The Tidal SEA Process	210
8.5.3. SEA Outcomes	214
8.5.4. Evaluation of the SEA Process	218
8.6. Conclusion.....	222

Chapter 9: Canadian Arctic Offshore Oil and Natural Gas and European Union Energy Diversification: Towards a New Perspective?,

<i>Jerome D. Davis, Kamrul Hossain, and Timo Koivurova</i>	227
9.1. Introduction	227
9.1.1. Background: EU Policy in the Arctic	227
9.2. EU Policy and the Canadian Arctic: A Coincidence of Events and Interests – Towards a Different Perspective?.....	232
9.2.1. A Different Point of Departure?	233
9.2.2. The Atlantic Basin LNG Market: Prospects for LNG from the High Canadian Arctic	236
9.2.3. Melville Island LNG: The Greenland Connection.....	240
9.2.4. The Regulation of Canadian Offshore Arctic Activities – The Problem of Devolution?.....	242
9.3. Conclusion.....	247
Annex One: The Northern Dimension and EU Energy Policy	252
Annex Two: The Melville Island LNG Project.....	255
Financial Assumptions.....	256
Project Planning Assumptions	257
Shipping Estimates.....	260
Estimates of the Godhavn Transit Terminal	261
Sensitivity of the Godhavn Transit Alternative	261
The European Option	263

Chapter 10: Canada, the European Union and Regional Fisheries

Management in the North Atlantic: Conflict, Cooperation and Challenges,

Erik Franckx, Koen Van den Bossche, and David L. VanderZwaag..... **265**

10.1. Introduction	265
10.2. Conflict.....	266
10.2.1. The <i>Estai</i> Incident	266
10.2.2. Consequences of the <i>Estai</i> Incident Observable at the EU Level	270
10.3. Cooperation	273
10.3.1. Global Instruments and Initiatives Guiding Cooperation in the North Atlantic	273
10.3.2. Cooperation at the EU Level.....	276
10.4. Challenges	286
10.4.1. Integrating the Environmental Dimension into the CFP.....	286
10.4.2. Putting the Precautionary Approach into Practice	288
10.4.3. Implementing the Ecosystem Approach	293
10.4.4. Reaching Consensus on Allocation Criteria	302
10.4.5. Ensuring Effective Compliance and Enforcement.....	306
10.5. Conclusion.....	343

Workshop Discussion Summary: Ocean Resources, Susan Rolston **345**

Part III: Maritime Security Issues **349**

Chapter 11: The Challenge of Maritime Security Against Terrorism:

A Dialogue Between the European Union and Canada, Kamrul Hossain,

Hugh M. Kindred, and Mary R. Brooks..... **351**

11.1. Introduction	351
11.2. Current Maritime Security Regime	353
11.2.1. The Multilateral Platform	353
11.2.2. United States' National Initiatives	360
11.3. Maritime Security in the EU and Canada.....	363
11.3.1. EU Practices and Policies	363
11.3.2. Canadian Practices and Policies.....	372
11.4. EU and Canadian Approaches to Maritime Security Compared.....	380

11.5. Conclusion.....	385
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Chapter 12: Illegal Immigration by Sea as a Challenge to the Maritime Border Security of the European Union with a Special Focus on Maritime Surveillance Systems, *Henna Tervo, Kamrul Hossain, and Adam Stepien ...* 387

12.1. Introduction	387
12.2. The Problem of Illegal Immigration Across the Maritime Borders of the EU Member States	388
12.2.1. Legal and Policy Framework	389
12.2.2. Current Surveillance Systems	396
12.2.3. Proposed Surveillance Systems	402
12.3. Conclusion.....	405

Chapter 13: Illegal Immigration to Canada by Sea: An Integrated Marine Security Response, *Hugh R. Williamson*..... 407

13.1. Introduction	407
13.2. Canada’s Maritime Borders	408
13.3. Types of Illegal Immigration.....	409
13.4. Illegal Immigration by Sea into Canada.....	410
13.5. Changes to Maritime Security Post 9/11	412
13.5.1. Canadian Departments with Marine Security Mandates	414
13.6. Integrated Responses and Planning.....	420
13.6.1. Planning Committees and Working Groups	420
13.6.2. Intelligence and Information Sharing	421
13.6.3. Information Collection for Marine Security	422
13.7. Integrated Marine Security Activity.....	423
13.7.1. Marine Security Operations Centres	423
13.7.2. Canada-US Bilateral Initiatives	424
13.7.3. Integrated Maritime Security Operations – Ship Rider Agreement	425
13.8. An Exercise in Integrated Marine Security Operations	425
13.8.1. Illegal Immigrant Planning and Response – Operation Heave To and the MV <i>Cala Puebla</i>	425
13.9. Conclusion.....	426

Workshop Discussions Summary: Maritime Security Issues, <i>Susan Rolston</i>	429
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**Part IV: Management of Maritime Safety and Vessel-Source
Pollution.....431**

**Chapter 14: Responsive Ocean Governance: The Problem of Invasive
Species and Ships’ Ballast Water - A Canadian Study, *Maira McConnell* 433**

14.1. Introduction	433
14.2. The Nature of the Problem.....	436
14.2.1. The Problem of Species Movement.....	437
14.2.2. Ships’ Ballasting Operations and Species Movement	440
14.3. The International Legal Response to the Problem of Aquatic Invasive Species and Harmful Organisms	443
14.3.1. The Law of the Sea	445
14.3.2. The Convention on Biological Diversity	448
14.3.3. Ships’ Ballast Water: The International Regulatory Response	449
14.4. The Canadian Regulatory Response	456
14.4.1. Invasive (Alien) Species in General	458
14.4.2. Control of Invasive Species in Ships’ Ballast Water	462
14.5. Observations.....	469

**Chapter 15: Responsive Ocean Governance: The Problem of Invasive
Species and Ships’ Ballast Water – An EU Study, *Lotta Viikari* 473**

15.1. Introduction	473
15.2. Ballast Water Management	476
15.3. European Union.....	480
15.3.1. Existing Regulation.....	482
15.3.2. European Maritime Safety Agency.....	489
15.4. Activities of European Sub-regional Organizations.....	491
15.4.1. OSPAR.....	492
15.4.2. HELCOM.....	494
15.4.3. Regional Marine Pollution Emergency Response Centre for the Mediterranean Sea	497

15.4.4. Black Sea	498
15.5. Conclusion.....	499

Chapter 16: Maritime Safety and Vessel-Source Pollution Control in the European Union Context, *Malgorzata Anna Nesterowicz*..... 507

16.1. Introduction	507
16.2. The Significance of Maritime Trade for the European Union	507
16.3. Institutional Framework of Decision Making in the EU	508
16.4. Development of EU Maritime Policy.....	509
16.5. Selected Comparative Thematic Issues.....	516
16.5.1. Port State Control.....	516
16.5.2. Delegation of Functions to Classification Societies and Their Supervision	518
16.5.3. Phasing-Out of Single-Hull Tankers.....	519
16.5.4. Use of Regulatory Tools to Monitor Vessel Traffic for the Purpose of Marine Safety and Environmental Protection.....	520
16.5.5. Vessel-Source Pollution: The Regime for Pollution Offences	522
16.5.6. Places of Refuge for Ships in Need of Assistance.....	524
16.5.7. Liability, Compensation and Response in Cases of Pollution .	526
16.6. Conclusion	529

Chapter 17: Shifting Focus: Towards Outcome-Based Policy and Regulation Making for Maritime Safety and Vessel-Source Pollution in

Canada, *Aldo Chircop and Eric Machum*..... 531

17.1. Introduction	531
17.2. Context	532
17.3. The Multiple Layers of Canadian Maritime Policy Making	534
17.4. Evolution of the Maritime Legislative Framework and Canadian Ratification Pattern of IMO Conventions	538
17.5. Institutional Framework and New Directions for the Maritime Administration.....	542
17.6. Selected Thematic Issues	545
17.6.1. Maritime Safety	545
17.6.2. Vessel-Source Pollution.....	551
17.7. Conclusion	562

Annex: Ship Pollution Offences in Canada.....	564
Workshop Discussion Summary: Management of Maritime Safety and Vessel-Source Pollution, Susan Rolston	569
Appendix: Rapporteur's Report: EU-Canada Relations in Law of the Sea and Ocean Governance Universitaire Stichting, Brussels, 4–5 December 2008, Susan Rolston.....	571
Session One: Ocean Governance and Maritime Policy Making.....	571
Session Two: Ocean Energy Resources	574
Session Three: Maritime Security Issues	576
Session Four: Management of Maritime Safety and Vessel-Source Pollution	579
Session Five: Marine Biodiversity and Fisheries.....	581
The Way Forward: Conference Summary and Discussion	585
Index.....	587

List of Figures and Tables

Figures:

Figure 4.1. Development of ecosystem-based management objectives to support integrated management (IM) planning	53
Figure 4.2. Priority integrated management planning areas	56
Figure 4.3. <i>Oceans Act</i> marine protected areas and areas of interest	70
Figure 5.1. Existing maritime uses in the Belgian part of the North Sea	94
Figure 5.2. Planning cycle as developed by the BALANCE project	96
Figure 8.1. Bay of Fundy Tidal Power Strategic Environmental Assessment Project Area	191
Figure 9.1. Melville Island and the Sverdrup Basin	235
Figure 9.2. Current and planned LNG reception terminals	238
Figure 9.3. The Melville Island Project	256
Figure 9.4. The Hecla and Drake Point Fields	258

Tables:

Table 4.1. National, sub-national and local oceans governance structures and agreements	47
Table 4.2. Key activities of Phase 1 of the Oceans Action Plan	63
Table 9.1. Offshore estimated undiscovered hydrocarbon reserves: North America/West Greenland	234
Table 9.2. Melville Island Project: Proximity to European and North American Markets	240

Table 9.3. Financial assumptions behind Chan et al. analysis	256
Table 9.4. Estimated field development costs	258
Table 9.5. Liquefaction and site estimates	260
Table 9.6. CERI Price Forecasts for Melville Island Natural Gas	262
Table 9.7. The Two Melville Island Alternatives Compared at NPV 15%	262
Table 10.1. Effort allocation scheme for shrimp fishery in the NAFO Regulatory Area Divison 3M (2008)	303
Table 13.1. Canadian government departments with marine security responsibilities	414
Table 17.1. Statutory scheme for maritime and related statutes in Canada	539

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Abbreviations

ABNJ	Areas beyond national jurisdiction
ABWDZ	Alternate ballast water discharge zones
AC	Arctic Council
ACAP	Arctic Contaminants Action Program (AC)
ACI	Advance Commercial Information
ACIA	Arctic Climate Impact Assessment (AC)
AEO	Authorized economic operator
AEPS	Arctic Environmental Protection Strategy (AC)
AIDCP	Agreement on the International Dolphin Conservation Program
AIS (1)	Automatic identification system
AIS (2)	Aquatic invasive species
ALIX	Atlantic Littoral ISR Experiment
AMAP	Arctic Monitoring and Assessment Programme (AC)
AMSA	Arctic Marine Shipping Assessment (AC)
AMSP	Arctic Marine Strategic Plan (AC)
API	Advanced Passenger Information
APP	Arctic Pilot Project
AR4	Fourth Assessment Report (IPCC)
ATBA	Area to be avoided
ATS	Antarctic Treaty System
AWPPA	<i>Arctic Waters Pollution Prevention Act</i> (Canada)
BCH Code	Code for the Construction and Equipment of Ships Carrying Dangerous Chemical in Bulk (Canada)
BEAC	Barents Euro-Arctic Council
BP	British Petroleum
BSIMPI	Beaufort Sea Integrated Management Planning Initiative
BWM	Ballast water management
BWM Convention	International Convention for the Control and Management of Ships' Ballast Water and Sediments
BWMP	Ballast Water Management Plan
CAFF	Conservation of Arctic Flora and Fauna (AC)
CAP	Common Agricultural Policy (EU)
CAS	Condition assessment survey
CBD	Convention on Biological Diversity
CBSA	Canada Border Services Agency
CBSS	Council of the Baltic States

CCAMLR (1)	Convention on the Conservation of Antarctic Marine Living Resources
CCAMLR (2)	Commission for the Conservation of Antarctic Marine Living Resources
CCFAM	Canadian Council of Fisheries and Aquaculture Ministers
CCG	Canadian Coast Guard
CCRA	Canada Customs and Revenue Agency
CEAA	<i>Canadian Environmental Assessment Act</i>
CEC	Commission for Environmental Cooperation
CECAF	Fishery Committee for the Eastern and Central Atlantic
CEPA	<i>Canadian Environmental Protection Act</i>
CERI	Canadian Energy Research Institute
CFIA	Canadian Food Inspection Agency
CFP	Common Fisheries Policy (EU)
CIC	Citizenship and Immigration Canada
CIVPOL	Civilian police
CLC	International Convention on Civil Liability for Oil Pollution Damage
CLCS	Commission on the Limits of the Continental Shelf
CMA	Coastal management area
CMAA	Agreement on Customs Cooperation and Mutual Assistance in Custom Matters
CMAC	Canadian Marine Advisory Council
C-NLOPB	Canada-Newfoundland and Labrador Offshore Petroleum Board
C-NSOPB	Canada-Nova Scotia Offshore Petroleum Board
COFI	Committee on Fisheries (FAO)
COSEWIC	Committee on the Status of Endangered Wildlife in Canada
CRATE	Centralized Record of Available Technical Equipment (EU)
CSA	<i>Canada Shipping Act</i>
CSC	Corrections Services Canada
CSI	Container Security Initiative
CSIS	Canada Security and Intelligence Service
C-TPAT	Customs-Trade Partnership Against Terrorism
DAISIE	Delivering Alien Invasive Species Inventories in Europe
DFO	Department of Fisheries and Oceans Canada
DG	Directorate-General (European Commission, EU)

DG ENV	Directorate-General for Environment (EU)
DND	Department of National Defence (Canada)
DOS	Declaration of Security
DSIP	Delegated Statutory Inspection Programme (Canada)
DSO	Distribution system operators
EA	Environmental assessment
EBPN	European Border Patrols Network
EC	European Community
ECFI	(European) Court of First Instance
ECIMOC	Eastern Canada Interdepartmental Marine Operations Committee
ECJ	(European) Court of Justice
ECT	Energy Charter Treaty (EU)
EDF	Environmental Damages Fund (Canada)
EEA	European Economic Area
EEC	European Economic Community
EEZ	Exclusive economic zone
EGSPA	<i>Environmental Goals and Sustainable Prosperity Act</i> (Canada)
EMF	Electric and magnetic fields
EMS	European Marine Strategy
EMSA	European Maritime Safety Agency
ENPI	European Neighbourhood Policy Instrument
ENVI	Standing Committee on Environment and Sustainable Development
EO	Ecosystem objectives
EPCO	Environmental Protection Compliance Order
EPPR	Emergency Prevention, Preparedness and Response (AC)
ERCA	<i>Energy Resources Conservation Act</i> (Canada)
ESA	<i>Electricity Sectoral Act</i> (Canada)
ESSIM	Eastern Scotian Shelf Integrated Management
EUROATOM	European Atomic Energy Community
EUROSUR	European Border Surveillance System
FAO	Food and Agriculture Organization of the United Nations
FCRA	<i>Fisheries and Coastal Resources Act</i> (Canada)
FMPs	Fishery management plans
FOSS	Field Operations Support System
FRONTEX	European Agency for the Management of Operation Cooperation at the External Borders of the Members States of the European Union

GFCM	General Fisheries Council for the Mediterranean
GN	Government of Nunavut
GPA	Global Programme of Action for the Protection of the Marine Environment from Land-based Activities
GPAC	Global Programme of Action Coalition for the Gulf of Maine
HADD	Harmful alteration, disruption or destruction
HAOP	Harmful aquatic organisms or pathogens
HELCOM	Helsinki Commission
HFSWR	High-frequency surface wave radar
HGO	Heavy grade oil
IAS	Invasive alien species
IAS Strategy	Invasive Alien Species Strategy for Canada
IBET	Integrated Border Enforcement Team
ICCAT	International Commission for the Conservation of Atlantic Tunas
ICE	Immigration and Customs Enforcement (US)
ICES	International Council for the Exploration of the Sea
ICJ	International Court of Justice
ICM	Integrated coastal management
ICMO	Interdepartmental Concept of Operations (Canada)
ICO	Interdepartmental Oceans Committee (Canada)
ICONET	Information and Coordination Network for Member States' Migration Management Services (EU)
ICZM	Integrated coastal zone management
IDA	Improperly documented arrival
IJC	International Joint Commission
ILM	International Legal Materials
ILO	International Labour Organization
IMO	International Maritime Organization
IMP	Integrated maritime policy
IMSWG	Interdepartmental Marine Security Working Group (Canada)
INAC	Indian Affairs and Northern Development Canada
IOC	Intergovernmental Oceanographic Commission
IOPC	International Oil Pollution Compensation Fund
IOPCF	International Convention on the Establishment of an International Fund for Compensation for Oil Pollution Damage
IOTC	Indian Ocean Tuna Commission

IPCC	Intergovernmental Panel on Climate Change
IPCRC	Interdepartmental Programme Coordination and Review Committee (Canada)
IPIL	Integrated Primary Inspection Line (Canada)
IPOA	International Plan of Action
ISA	International Seabed Authority
ISM Code	International Safety Management Code
ISO	International Organization for Standardization
ISPS	International Ship and Port Facility Security
ISR	Intelligence surveillance and reconnaissance
ISSC	International Ship Security Certificate
ITC	Inuit Tapirisat of Canada
IUCN	International Union for Conservation of Nature
IUU	Illegal, unreported and unregulated fishing
LLMC	Convention on Limitation of Liability for Maritime Claims
LME	Large marine ecosystem
LNG	Liquefied natural gas
LOMA	Large ocean management area
LOS Convention	United Nations Convention on the Law of the Sea
LRIT	Long range identification and tracking
MARPOL	International Convention for the Prevention of Pollution from Ships
MBCA	<i>Migratory Birds Convention Act</i> (Canada)
Mcf	Thousand cubic feet
MCTS	Maritime Communications and Traffic Services
MCTU	Marine container targeting unit (Canada)
MDA	Marine Domain Awareness
MEA	Multilateral environmental agreement
MEG	Marine Energy Group
MEPC	Maritime Environment Protection Committee (IMO)
MOU	Memorandum of understanding
MPA	Marine protected area
MPAU	Marine Passenger Analysis Unit (Canada)
MSD	Maritime Strategy Directive (EU)
MSERT	Marine Security Emergency Response Team (Canada)
MSET	Marine Security Enforcement Team (Canada)
MSFD	Marine Strategy Framework Directive (EU)
MSOC	Marine Security Operations Centres

MSP	Maritime spatial planning
MTSA	<i>Maritime Transportation Security Act</i> (US)
NABST	National Advisory Board on Science and Technology (Canada)
NAFO	Northwest Atlantic Fisheries Organization
NAFTA	North American Free Trade Agreement
NARFMO	North Atlantic Regional Fisheries Management Organization
NASCO	North Atlantic Salmon Conservation Organization
NATO	North Atlantic Treaty Organization
NAV	Sub-Committee on Safety of Navigation (IMO)
NCM	Nordic Council of Ministers
NCP	Non-contracting party
ND	Northern Dimension (EU)
NEAFC	North East Atlantic Fisheries Commission
NEBA	<i>National Energy Board Act</i> (Canada)
NEB	National Energy Board (Canada)
NGO	Non-governmental organization
NMCA	<i>Canada National Marine Conservation Areas Act</i>
NOBANIS	North European and Baltic Network on Invasive Alien Species
NOBOB	No ballast on board
NPA	National Programme of Action for the Protection of the Marine Environment from Land-based activities
NPFMC	North Pacific Fishery Management Council
NPV	Net present value
NRAC	National Risk Assessment Centre (Canada)
NRCan	Natural Resources Canada
NS	Nova Scotia
NSEA	<i>Nova Scotia Environment Act</i>
NSPI	Nova Scotia Power Inc.
NTI	Nunavut Tunngavik Incorporated
NWPA	<i>Navigable Waters Protection Act</i> (Canada)
NWT	Northwest Territories (Canada)
OECD	Organization for Economic Cooperation and Development
OEER	Ocean Energy and Environment Research Association
OGAAC	Oil and Gas Administrators Advisory Council (Canada)
OGD	Other government departments

OILPOL	International Convention for the Prevention of Pollution of the Sea by Oil
OMRN	Ocean Management Research Network
OPRC	International Convention on Oil Pollution Preparedness, Response and Co-operation
OSPAR	Convention on the Protection of the Marine Environment of the North-East Atlantic
PAIR	Pre arrival information report
PAME	Protection of the Arctic Marine Environment (AC)
PCIMA	Pacific North Coast Integrated Management Area (Canada)
PECCOE	Permanent Committee on Control and Enforcement (NEAFC)
PIP	Partnership in Protection
PNR	Passenger name record
PORCP	National Places of Refuge Contingency Plan (Canada)
PPO	Pollution prevention officer
PPP	Policy, plan or programme
PRO	Pollution response officer
PSC (1)	Public Safety Canada
PSC (2)	Port state control
PSSA	Particularly sensitive sea areas
RABIT	Rapid Border Intervention Team (EU)
RCMP	Royal Canadian Mounted Police
REMPEC	Regional Marine Pollution Emergency Response Centre for the Mediterranean Sea
RFMO	Regional fisheries management organization
RHIB	Ridge hulled inflatable boat
RMP	Recognised maritime picture
RO (1)	Renewable obligation order
RO (2)	Response organisation
RPS	Renewable portfolio standard
SAFE Framework	Framework of Standards to Secure and Facilitate Global Trade
SAFE Port Act	<i>Security and Accountability for Every Port Act</i> (US)
SAO	Senior Arctic Official (AC)
SARA	<i>Species at Risk Act</i> (Canada)
SBT	Segregated ballast tank
SDS	Sustainable Development Strategy

SDWG	Sustainable Development Working Group (AC)
SEA	Strategic environmental assessment
SEAFO	South-East Atlantic Fisheries Organization
SEEWEC	Sustainable Economically Efficient Energy Wave Converter
SFI	Secure Freight Initiative (US)
SIVE	Sistema Integrado de Vigilancia del Estrecho (Integrated System of Border Surveillance - Spain)
SOLAS	International Convention on the Safety of Life at Sea
SOPF	Ship-Source Oil Pollution Fund (Canada)
SRIT	Short range identification and tracking (EU)
SSHRC	Social Science and Humanities Research Council (Canada)
SSN	SafeSeaNet (EU)
STACFEN	Standing Committee on Fisheries Management (NAFO)
STMID	Shore-based Traffic Monitoring and Information Database (EU)
SUA Convention	Convention for Suppression of Unlawful Acts against the Safety of Maritime Navigation
TAC	Total allowable catch
TACIS	Technical Aid to the Commonwealth of Independent States (EU)
TATC	Transportation Appeal Tribunal of Canada
TBT	Tributyltin
TC	Transport Canada
TGC	Tradable green certificates
TSO	Transmission system operators
UARB	Utility and Review Board (Canada)
UAV	Unmanned aerial vehicle
UK	United Kingdom
UN	United Nations
UNCED	United Nations Conference on Environment and Development
UNCLOS	see LOS Convention
UNEP	United Nations Environment Programme
UNESCO	United Nations Educational, Scientific and Cultural Organization
UNFCCC	United Nations Framework Convention on Climate Change
UNGA	United Nations General Assembly

UNTS	United Nations Treaty Series
USGS	United States Geological Survey
VACIS	Vehicle and Cargo Inspection System
VME	Vulnerable marine ecosystem
VMS	Vessel monitoring system
VTMIS	Vessel Traffic Monitoring and Information System (EU)
VTs	Vessel traffic system
VTU	Vessel Targeting Unit (Canada)
WCO	World Customs Organization
WECAFC	Western and Central Atlantic Fishery Commission
WETREP	Western European Tanker Reporting System
WFCPC	Commission for the Conservation and Management of Highly Migratory Fish Stocks in the Western and Central Pacific Ocean
WGEAFM	Working Group on Ecosystem Approach to Fisheries Management (NAFO Scientific Council)
WMD	Weapons of mass destruction
WTO	World Trade Organization
WWF	Worldwide Fund for Nature

Chapter 1

Introduction

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and David L. VanderZwaag*

The recent history of international ocean relations between Canada and the European Union (EU) merits particular scholarly attention. The headlines in the media have tended to focus on differences rather than commonalities, and in particular those few differences that led to confrontation, probably not without some assistance from the media. The “Turbot War” in the 1990s is by now a classic case of confrontation on the high seas motivated by conflicting fisheries and related conservation interests. Canada arrested a Spanish fishing vessel on the high seas, possibly in violation of international law and ostensibly in support of Northwest Atlantic Fisheries Organization (NAFO) fisheries conservation measures to which the European Community (EC) had objected in accordance with NAFO’s founding documents. The ensuing dispute was the climax of an ongoing dispute over the allocation of quotas in the NAFO region. Of more recent vintage is the seal hunt in Atlantic Canada, seen as an animal welfare issue in the European Union (EU), but considered by Canada as a sustainable use of a natural resource and trade issue. The EU is Canada’s second largest market for seal products and consequently Canada’s seeking relief against Belgium and the Netherlands through the World Trade Organization (WTO) is not surprising. More recently, clouds appear to be gathering on the horizon concerning the European Commission’s Arctic communication which addresses, among others, the enhanced future usage of Arctic navigation. Canada is of the view that the Northwest Passage constitutes internal waters subject to full Canadian sovereignty. Differences on some recent non-ocean issues have also received extensive publicity, such as Canada’s apparent retraction on its Kyoto commitments, measures of the EC concerning approval and marketing of Canadian products containing genetically-modified organisms, trade description of scallops, and restrictions on the import of Canadian beef raised with hormones.

Scholarly attention is merited to enable a dispassionate study of the broader scope of this important relationship outside the arena. Publicised differences frequently mask the reality that more often than not Canadian and EU international relations, including ocean relations, are generally marked more by convergence than divergence, and that differences are by and large

resolved in a non-confrontational manner. When there are disputes, consultation and diplomacy are normally employed. For example, Canada and the EC amicably resolved a dispute over taxes and exemptions for wine and beer that was initially a WTO complaint. There are numerous examples where the seemingly normal or unspectacular technical cooperation in ocean affairs with EU Member States occurs on a regular basis. Cooperation within the International Maritime Organization (IMO) is taken for granted and therefore not normally reported upon. The exchange of fishery science information is similarly “quiet.” At times the apparent differences in approach are purely linguistic, as for example Canada’s “ocean” policy as compared to the European Commission’s “maritime” policy, when in effect the general purpose and content are comparable. In other instances, the difference is more substantial. For instance, the development of Canada’s ocean policy (National Oceans Strategy) was mandated by legislation (*Oceans Act*) whereas the EU’s Integrated Maritime Policy was adopted as a political initiative. Whether there are similarities or differences, it is useful to seek to understand what is behind the convergence or divergence in the practices of two entities which between them account for a large measure of the world’s coastal and ocean areas, capabilities and actual activities.

There is also another motivation behind this book which serves as context for decision making on ocean and maritime affairs: comparative “federalism.” Canada has had experience as a federal state since confederation in 1867, and with full authority over external affairs since 1931. In comparison, the EU is a supranational organisation originating from the Coal and Steel Community (1951), the European Economic Community (1957), and European Atomic Energy Community (1957), which were integrated into the European Communities (1967), and further evolving into the EC and the EU (1993). The EU continues to internally integrate and evolve in the direction of a “federal” union. Repatriated in 1982, Canada’s constitution has a complex structure that allocates powers between federal and provincial levels and recognises aboriginal rights. Aboriginal rights have received further constitutional recognition in a series of Supreme Court of Canada decisions. Although oceans issues (fisheries, navigation and shipping, and including external affairs) are *prima facie* attributed to the federal level, the coastal provinces and territories have interests and claims over how Canada’s oceans are managed and how their benefits are distributed. In the case of offshore development in the Atlantic region, a special political arrangement was worked out between the federal government and the provinces of Newfoundland and Labrador and Nova Scotia which included an allocation of regulatory responsibilities and royalty management to a joint board. Unlike Canada,

the EU has sovereign states as members and they do not necessarily enjoy exclusive competence on some ocean issue areas such as fisheries conservation and management, whereas they retain broad competence on other ocean issues such as offshore development and military uses. Central to the comparison between Canadian and EU ocean policy making is the relationship between the central (federal or supra-national) and component units (provinces, territories and Member States). As the EU continues to evolve as a “federal” arrangement, it is not surprising that it will seek to learn lessons from an older (albeit smaller) sibling on key policy domains where the relations between the centre and the constituent membership is in play. Ocean issues are one such policy domain where the Commission has studied the Canadian experience in anticipation of the launching of maritime policy consultations and eventual adoption of the Blue Book. And equally, Canada has frequently looked at the EU to learn from ground-breaking initiatives, such as renewable energy policies and practices.

This book is the result of a cooperative project led by scholars from Canadian and European universities and with the participation of practitioners. Although in Canada the “EU” is common currency, there is sparse understanding of the nature and complexities of this supranational organisation among Canadian scholars. The challenge of integration for an organisation that currently has 27 diverse Member States with over 500 million inhabitants is probably not fully appreciated. At Canadian law schools the teaching of EU law is a relatively recent phenomenon and is far behind the comparative attention US law receives. In part this may be explained by the North American geographic and trade realities, but it is also true that the EU is a major trade partner for Canada. Similarly among EU scholars, there is insufficient understanding of Canada as a highly diverse federal state of 33 million inhabitants whose middle-of-the-road foreign policy has enabled it to play a role far beyond its size.

The issue areas of focus in this book are ocean-related. The aim is to increase academic and public understanding of Canadian and EU approaches and challenges in governing key human uses of the oceans. The general approach of the book is comparative, pitting colleagues on both sides of the Atlantic to identify and reflect upon areas of convergence and divergence in Canadian and EU interests and practices. A running theme throughout the book is ocean governance because across those sectors Canada and the EU are facing numerous common issues. Those issues include: comparing ocean policy development and implementation experiences; how to establish, strengthen and modernise regional fisheries management organisations; current directions for Arctic policy and whether existing regional governance arrangements for the North, such as the Arctic Council, are sufficient; the role of maritime spatial

planning in advancing maritime policy; how to effectively counter illegal, unreported and unregulated (IUU) fishing; how far coastal states and regional entities can go in unilaterally controlling and criminalising vessel-source pollution and increasing conditions for port entry on environmental grounds; how to respond to the problem of exotic species introduced by ballast waters from ships; how to address illegal immigration at sea; how to address high seas governance “gaps,” for example, management of discrete high seas fish stocks, establishment of high seas marine protected areas and protection of biodiversity; and how to address growing energy security concerns surrounding offshore oil and gas and the prospects of renewable ocean energy. Addressing potential terrorist threats in ports and at sea, and interdiction and enforcement at sea are further high priority issues. How Canada and the EU (including EU Member States) project their interests in international organisations with marine and environmental mandates is also addressed in the various issue areas above.

The project that produced this book had a three-part methodology. First, an initial workshop of leading scholars of Canada (Dalhousie University) and the EU (University of Lapland, *Vrije Universiteit Brussel*, Utrecht University) was convened in Halifax, Nova Scotia, Canada, to share perspectives on ocean governance approaches and challenges, to identify issues to be targeted and to plan for the engagement of policy makers. Second, teams of scholars undertook cooperative and comparative investigations of selected ocean governance topics. Third, a final workshop involving participating scholars and practitioners from the European Commission (in particular the Directorate-General for Maritime Affairs and Fisheries (DG MARE); Directorate-General for External Relations (DG RELEX); Directorate-General for Transport and Energy (DG TREN) and the European Maritime Safety Agency (EMSA)) was convened in Brussels in cooperation with the Institute for European Studies (IES). The purpose of the workshop, also involving representatives from the Canadian Department of Fisheries and Oceans (DFO) and the Department of Foreign Affairs and International Trade (Brussels embassy), was to share research findings, invite critical comments on research results, and distill comparative lessons.

This book consists of the proceedings of the final workshop (namely presented papers and summary of discussions). The project was able to achieve several stated objectives. It has engendered among project participants a clearer comparative understanding of evolving Canadian and EU ocean policy interests in key marine sectors and issues and their projection in the international arena. The project has explored approaches for how Canada and the EU might play leading roles in furthering the progress and development of the law of the sea, international environmental law, international maritime law, and international

ocean governance. The project enhanced appreciation of the increasingly important roles of various groups (policy makers, NGOs, industry, and academics) in Canadian and EU approaches and challenges in ocean policy and governance. The project has facilitated greater Canadian-EU cooperation in addressing ocean governance weaknesses and gaps in the issue areas addressed. Finally, the project has forged cooperative research linkages among participating institutions in Canada and the EU that have law of the sea, and ocean policy and governance interests and programmes.

Finally, the co-editors and contributors to this book acknowledge the generous grant from the Public Diplomacy and Outreach European Union and EU-Canada relations programme, funded by the European Commission (DG RELEX) that has enabled this project to occur and to be brought to fruition. The co-directors want to express their sincere thanks to Yasmina Sioud for the effective administration of the project at the Commission and the technical editors (Susan Rolston and Adam Stepien) for their diligent work in putting the book together.

Part I

Ocean Governance and Maritime Policy Making

Chapter 2

Challenges to Ocean Policy Making

Erik Franckx

2.1. Introduction

The formulation of national ocean policies is a recent phenomenon as witnessed by the practice of states. This development relates to the fact that the present-day constitution for the oceans, namely the United Nations Convention on the Law of the Sea, starts from the premise “that the problems of ocean space are closely interrelated and need to be considered as a whole,”¹ while at the same time adhering to a zonal approach.² States, when addressing ocean issues, normally follow this latter approach,³ which raises questions about the coherence of their ocean policies. However, if sustainability is ever to be achieved, coherence of national policies seems to be a *conditio sine qua non*. Hence there is a need for states to try to develop an approach that not only appreciates the unique nature of ocean ecology but also the continued escalation of ocean use interactions.⁴ States must coordinate their separately developed zonal pieces of legislation into an integrated whole. Often all of this is packaged under the label “ocean policy.”

The call for an integrated development of the ocean and its resources received prominence during the United Nations Conference on Environment

¹ *United Nations Convention on the Law of the Sea*, 10 December 1982, entered into force on 16 November 1994, 1833 *U.N.T.S.* 397 et seq., available: <http://www.un.org/Depts/los/convention_agreements/texts/unclos/unclos_e.pdf> (retrieved 10 February 2009) [hereinafter LOS Convention], third preambular paragraph.

² It will suffice to notice in this respect that in addition to existing maritime zones under the 1958 Law of the Sea Conventions system, the LOS Convention added complexity to the zonal approach by adding two new zones, namely the exclusive economic zone and the international seabed area.

³ Y. Tanaka, “Zonal and Integrated Management Approaches to Ocean Governance: Reflections on a Dual Approach in International Law of the Sea,” *International Journal of Marine and Coastal Law* 19 (2004), pp. 483–514, giving arguments pro and contra the zonal approach in ocean management.

⁴ L. Juda, “Changing National Approaches to Ocean Governance: The United States, Canada, and Australia,” *Ocean Development and International Law* 34 (2003), p. 161, 162. Juda also refers to the approach as the “systems” approach as opposed to a sectoral or zonal approach in ocean governance.

and Development held at Rio de Janeiro in June 1992, where it was declared that “the marine environment ... forms an integrated whole that is an essential component of the global life-support system and a positive asset that presents opportunities for sustainable development.”⁵ The Rio Conference developed the observations of the 1987 World Commission on Environment and Development report “Our Common Future.”⁶ It attempted to formulate a pathway through which states, in appreciating the linkages inherent in the environment, could formulate integrated policies or measures in the management of resources.⁷ Subsequently, organisations such as the Intergovernmental Oceanographic Commission (IOC) and the Food and Agriculture Organization of the United Nations (FAO) adopted programmes which advocate the benefits of integrated coastal zone management. Within the European Union, the Council in 1994 adopted the Implementation of Coastal Zone Management in Europe.⁸ Nevertheless, with rare exceptions, one had to wait for the twenty-first century to see countries embark upon this new avenue of trying to bring some order into the divergent approaches to ocean matters, and above all, to bring some hierarchy in the way future policy would be developed.

2.2. National Ocean Policies: A General Comparison

With several countries now having adopted a national ocean policy, it is interesting to have a closer look at these policies from a comparative perspective in order to disclose some of their similarities, but, as it will turn out, mostly their divergences. Separate contributions in this volume will address the Canadian and European approaches in some detail. The present contribution intends to provide, with a thick brush, the general picture which frames these two case studies.

⁵ United Nations General Assembly, *Report of the United Nations Conference on Environment and Development, Rio de Janeiro, 3-14 June 1992*, UN Doc. A/CONF.151/26/REV.1, Vols. 1-III (1992), paragraph 17.1, available: <<http://www.un.org/esa/sustdev/documents/agenda21/english/agenda21chapter17.htm>> (retrieved 10 February 2009).

⁶ G. H. Brundtland, *Our Common Future* (Oxford: Oxford University Press, 1987), available: <<http://www.worldinbalance.net/agreements/1987-brundtland.php>> (retrieved 10 February 2009).

⁷ *Id.*, Chapter 1 (A Threatened Future), Section 48.

⁸ Implementation of the Integrated Coastal Zone Management in Europe. *Official Journal C127 E/271*, 29 May 2003, available: <<http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:C:2003:127E:0269:0273:EN:PDF>> (retrieved 10 February 2009).

Without trying to be exhaustive, the present contribution simply takes as point of departure a recent UNESCO publication that brings together the national ocean policies of ten different countries, namely Australia, Brazil, Canada, China, Colombia, Japan, Norway, Portugal, the Russian Federation and the United States, adopted between 1994 and 2007.⁹ This is an ongoing project that will be updated as new texts become available through the webpages of the Advisory Body of Experts on the Law of the Sea¹⁰ of the IOC.¹¹ As of the time of writing, no new texts have been added. This contribution will therefore be limited to the countries listed above, less Canada as it is dealt with in a separate contribution in this volume.

As remarked by the IOC Executive Secretary in his introductory remarks to the above-mentioned UNESCO publication, it should first of all be noted that this new trend is not sparked by any intellectual exercise. Rather it is driven by the necessity of states who feel that the increased reliance on the oceans in an ever expanding quest to master the remaining untapped resources, be they located on the seabed and ocean floor, in its subsoil, or in the waters superjacent thereto, has reached the limit of what the zonal approach can reasonably be expected to accomplish without starting to substantially compromise the further development of these resources.¹² States have attempted to remedy this situation by trial and error rather than by following a general and clear roadmap from which they could not deviate. Indeed, in order to overcome the inherent deficiencies accumulated over the years by applying the zonal approach to ocean matters, each country finds itself today in a totally different position and consequently tries to find the most appropriate way to bring coherence and sustainability in the way it manages its own ocean's affairs. It should therefore not come as a surprise that the leitmotiv when reading through these national ocean policies can be best captured by the "united in diversity" motto so dear to the European Union.

Comparing the expressed reasons why a national ocean policy has been or should be elaborated reveals the concordance of the many countries that

⁹ International Oceanographic Commission, *National Ocean Policy. The Basic Texts from Australia, Brazil, Canada, China, Colombia, Japan, Norway, Portugal, Russian Federation, United States of America*, IOC Technical Paper, 75, Law of the Sea Dossier 1 (Paris: UNESCO, 2007), available: <http://ioc3.unesco.org/abelos/index.php?option=com_docman&task=doc_download&gid=267> (retrieved 10 February 2009) [hereinafter IOC Study].

¹⁰ This committee is composed of legal and scientific experts and assists the IOC with respect to the latter's role in relation to the LOS Convention. The present author represents Belgium on this body.

¹¹ See more specifically <http://ioc3.unesco.org/abelos/index.php?option=com_content&task=view&id=55&Itemid=62> (retrieved 10 February 2009).

¹² P. Bernal, *National Ocean Policy*, Introduction. In: IOC Study, n. 9 above, p. 1.

emphasise their respective importance as a maritime nation. Often this is based on the long coastlines countries possess, washing different oceans,¹³ sometimes in combination with their overseas territories,¹⁴ the extent of their maritime zones in a particular area,¹⁵ the revenues generated by the sea,¹⁶ or simply because a country is totally surrounded by water.¹⁷ Other states stress historic considerations, either alone¹⁸ or in combination with other factors.¹⁹ In this respect the case of China is interesting. China also justifies its national oceans policy by the fact that, in combination with many of the above features, demographic pressure naturally directs China's interest to offshore areas.²⁰

What all of the policies have in common is that sustainability generally forms a basic cornerstone of the edifice.²¹ However, in the national ocean policy of the Russian Federation, it is applied to the state itself rather than to the oceans and its resources.²²

But that is where most of the similarities end. If one looks, for instance, at the nature of the documents included in the IOC Study, great differences have to be noted. The document of the United States, no matter how impressive,²³ remains a mere blueprint for action drawn up by a commission established by Congress to make recommendations.²⁴ On the other side of the spectrum one

¹³ Especially if it is the only such country on a particular continent, such as Colombia in South America (IOC Study, n. 9 above, p. 103).

¹⁴ E.g., Australia (IOC Study, n. 9 above, p. 8).

¹⁵ E.g., Portugal which states that it has one of the largest exclusive economic zones in Europe (IOC Study, n. 9 above, p. 208).

¹⁶ E.g., the United States (IOC Study, n. 9 above, p. 249).

¹⁷ E.g., Japan (IOC Study, n. 9 above, p. 121).

¹⁸ E.g., Norway (IOC Study, n. 9 above, p. 131).

¹⁹ E.g., the Russian Federation (IOC Study, n. 9 above, p. 231).

²⁰ IOC Study, n. 9 above, p. 76.

²¹ See Australia (IOC Study, n. 9 above, p. 5); Brazil (id., pp. 50–52); China (id., p. 76); Colombia (id., p. 95); Japan (id., p. 121); Norway (id., p. 132); Portugal (id., pp. 208–212); and the United States (id., p. 247). Often only the basic reliance on the sustainability principle has been pinpointed here, even though the texts may contain many practical applications of the principle.

²² IOC Study, n. 9 above, pp. 233, 240 and 245. It is also applied to the Russian fleet (id., p. 236) and food security for minority peoples in coastal regions (id., p. 244).

²³ U.S. Commission on Ocean Policy, *An Ocean Blueprint for the 21st Century*. Final Report (20 September 2004), Available: <http://www.oceancommission.gov/documents/full_color_rpt/welcome.html#full>. The full report, including several appendices, contains 522 pp. Several appendices published separately can be found there as well.

²⁴ 33 *United States Code* §857–19 note (National Ocean Policy). Colombia seems to follow a similar path (IOC Study, n. 9 above, p. 94). The same holds true for Portugal (task force instructed to work out a comprehensive policy), but this document was later approved by the Council of Ministers (IOC Study, n. 9 above, pp. 205–207).

finds Australia, where a clear centralisation in the decision making process is imposed by law.²⁵ This is seen in the institutionalised stipulation in Australia's policy document which provides for the establishment of a National Oceans Ministerial Board consisting of commonwealth ministers.²⁶ The Ministerial Board will be advised by the National Oceans Advisory Body, whereas the development of regional initiatives and secretariat support will be handled by the Regional Marine Plan Steering Committee and the National Oceans Office respectively.²⁷ In the middle of the spectrum, one observes the situation in Brazil where a comprehensive legal package of laws formally integrating all levels of government (regional, state and federal) in the process has been met with "incipient implementation."²⁸

Another major point of divergence is the method relied upon to arrive at a national ocean policy. Some of the states in this study provide for a general procedure that governmental agencies are obliged to follow during the enactment process of ocean-related legislation with a harmonised national policy as the logical outcome.²⁹ Others merely state what the policy is, either by looking into the future³⁰ or to the past by stating what has already been accomplished.³¹ In between these approaches are states that provide for rather

²⁵ Once adopted, regional marine plans involving the different stakeholders will be binding on all relevant agencies (IOC Study, n. 9 above, pp. 11–12).

²⁶ Australia (IOC Study, n. 9 above, pp. 14–15).

²⁷ Id. See also Juda, n. 4 above, p. 174 et seq. for background to the Australian Ocean Policy recommendation.

²⁸ S. Jablonski, and M. Filet, "Coastal Management in Brazil, a Political Riddle?" *Ocean and Coastal Management* 51 (2008):536-543, p. 541. The authors focus on Brazil's definition of its oceans as a coastal patrimony, arguing that the reason for this could be because the more incisive laws in relation to ocean and coastal management are in the form of resolutions and not of decrees, hence the presumption of a weak system by those required to act.

²⁹ Once again, Australia can be cited as an example (IOC Study, n. 9 above, pp. 11–13). Japan also seems to fit this category (id., pp. 121–129).

³⁰ The Russian Federation is a good example of this approach (IOC Study, n. 9 above, pp. 231–245), projecting a policy up to 2020.

³¹ The example of China can be mentioned (IOC Study, n. 9 above, pp. 74–91), even though mention is made of the Long-Term National Marine Environmental Protection Programme, which runs to 2010. In China, moreover, these policies are deeply rooted in the political structure of the state. See M. Lau, "Integrated Coastal Zone Management in the Peoples Republic of China. An Assessment of Structural Impacts on Decision Making Processes," *Ocean and Coastal Management* 48 (2005): 115–159. Lau divides the political system into functioning legislation, implementing agency, and public participation. Lau notes the further division of the State Oceanic Administration into six departments (key departments include marine environmental protection, international cooperation, sea area management, as well as science and technology) that supervise 23 sub-units ranging from research and development to media organisations and training institutions (id., p. 135). This is in addition to the State Oceanic Administration's split into three branches with responsibility for the Northern Sea,

detailed overviews, indicating which administration is responsible for taking the lead in situations where the interests of different ministries overlap.³²

This tendency towards overlapping sectors in ocean policy requires an improved operational process in order to balance sectoral interests and coordinate action and goals in accordance with sustainability principles.³³ There is some action, albeit divergent, on the part of states to reduce fragmentation in policy making. Some states institute a comprehensive legal framework covering their oceans,³⁴ some take a sector-by-sector approach,³⁵ whereas others are still embroiled in determining their remit of responsibility over marine areas due to clear overlaps between key agencies.³⁶

Coherence is a desired framework in the implementation process. However, states take diverging approaches to arriving at a coherent national policy, following an integrated approach in order to sustainably use the oceans. Some of the reviewed ocean policies are guided by the ultimate objective of sustainability.³⁷ Others simply pay lip service to it.³⁸ Finally, a few countries

the Eastern China Sea and the South China Sea. This is coupled with the political-economic network of participation, usually by stakeholders with political leanings as politicians in China can be involved in business matters (id., p. 135).

³² The example of Brazil can be mentioned here (IOC Study, n. 9 above, pp. 45–49).

³³ Addressing overlapping sectors and possible tensions in policy beforehand ensures fewer anomalies in the regulation of coastal states' marine environments and economies.

³⁴ The UK's *Marine and Coastal Access Bill*, 2008, H.L. Bill [1] is a good example of an overarching policy framework for all UK waters. Available: <<http://www.publications.parliament.uk/pa/ld200809/ldbills/001/2009001.pdf>> (retrieved 10 February 2009) [hereinafter UK Marine Bill].

³⁵ Norway is a good example of a state that uses the sectoral method. Currently, there is an integrated management framework in place for fisheries, transport and petroleum in the Barents Sea area off the Lofoten Islands. Similar plans will follow for the Norwegian Sea and the Norwegian part of the North Sea. See Ministry of Environment (Norway), *Integrated Management of the Marine Environment of the Barents Sea and the Sea Areas off the Lofoten Islands (management plan)*, available: <http://www.regjeringen.no/en/dep/md/Selected-topics/Svalbard_og_polaromradene/Integrated-Management-of-the-Barents-Sea.html?id=87148> (retrieved 10 February 2009) for more on this process in the Barents area.

³⁶ Lau, n. 31 above, pp. 142–145. In looking at China, Lau notes the State Oceanic Administration's acknowledgement of conflicts in spheres of influence with agencies like the Ministry of Science and Technology, the Chinese Academy of Sciences, the Ministry of Land and Resources, the State Environmental Protection Administration, the National Bureau of Forestry, and the Ministry of Agriculture.

³⁷ In alphabetical order the following countries can be mentioned: Australia (IOC Study, n. 9 above, pp. 11–12, 17–18 and 38–39); Norway (id., pp. 132 and 139–198); Portugal (id., p. 206); and the United States (id., pp. 252–260).

³⁸ Brazil, for instance, simply mentions harmonisation and prioritisation as basic principles (IOC Study, n. 9 above, p. 50). The Colombian entry has a section on integrated coastal area

look at national ocean policy from a military perspective, focussing on their need to be able to adequately defend their ocean interests.³⁹

The role of ecological sustainability in ocean policies varies widely. Sustainable management of marine regions is dependent on the condition of the ecosystem under consideration.⁴⁰ Some countries are willing to further strengthen this concept by, for instance, adopting a more robust approach to the precautionary principle, a key element in achieving ecological sustainability. Normally, the precautionary approach requires that the absence of adequate scientific information is not a hindrance to the implementation of conservation and management measures.⁴¹ For example, Australia's statement that incomplete information is not to be used as a reason for postponing precautionary measures⁴² is evidence of an enhanced intrinsic value in conservation and management. Some countries may highlight the precautionary principle as a fundamental policy objective,⁴³ while others barely mention it⁴⁴ or remain silent on the issue.⁴⁵

management that remains, however, rather vague (id., p. 109) and contrasts sharply with the crux of the document which outlines specific actions to be taken in specific domains.

³⁹ The best example is the Russian Federation. It states as one of the principles of its domestic marine policy the “[p]ossession of the required naval capacity and its effective use where necessary to support by force the marine activity of the State” (IOC Study, n. 9 above, p. 234). Sustainability under this approach is tied to the development of the state and aims at strengthening the position of the Russian Federation as one of the leading maritime powers (id., p. 245). To a lesser extent Brazil fits this category as well (id., pp. 43–44).

⁴⁰ European Commission, *Communication from the Commission. Roadmap for Maritime Spatial Planning: Achieving Common Principles in the EU. The European Union notes the importance of sustainability in its recent policy document on maritime spatial planning*, COM(2008) 791 final (Brussels, 25 November 2008) [hereinafter MSP Document].

⁴¹ See, for example, the definition in the *Agreement for the Implementation of the Provisions of the United Nations Convention on the Law of the Sea of 10 December 1982 Relating to the Conservation and Management of Straddling Fish Stocks and Highly Migratory Fish Stocks*, 8 September 1995, *International Legal Materials* 34 (1995): 1542–1580, Art. 6(2), available: <<http://daccessdds.un.org/doc/UNDOC/GEN/N95/274/67/PDF/N9527467.pdf?OpenElement>>.

⁴² IOC Study, n. 9 above, p. 17. Australia also wholeheartedly adopts an ecosystem-based approach (id., pp. 11–13) and aims at ecosystem integrity (id., pp. 38–39).

⁴³ See the examples of Colombia (IOC Study, n. 9 above, especially at p. 113), Norway (id., pp. 140 and 199–200) preparing for an ecosystem-based approach (id., p. 132), Portugal (id., pp. 213–216), and the United States, which makes the ecosystem-based management approach a fundamental pillar of its policy proposals (id., p. 246 (statement of principle) and the other references in the text itself to this approach).

⁴⁴ A good example is Brazil (IOC Study, n. 9 above, pp. 50 and 52). See also the examples of China (id., pp. 80 and 83) and Russia (id., pp. 238–239).

⁴⁵ G. Hønneland, “Towards a Precautionary Fisheries Management in Russia?” *Ocean and Coastal Management* 48 (2005): 619–631, pp. 619, 621. Hønneland notes Russia's silence in ensuring that the precautionary principle is translated in national legislation. For instance, the

Divergences between national ocean policies of the countries are also evident in the extent of the powers vested in the administrative organs responsible for implementing the proposed changes. On the one extreme of the spectrum one finds Japan, which has created a Headquarters for Ocean Policy led by the Prime Minister and composed of all Ministers of State.⁴⁶ In other countries, e.g., Norway, the proposed structural changes tend to be weak.⁴⁷ However, this does not necessarily mean that concrete plans are lacking in such countries. The Norwegian plans, for instance, are much more concrete than those of Japan. In some cases, there are divergences in the kind of power given to administrative units. For example in China, where the State Oceanic Administration, an established administrative unit, has substantial powers, a plethora of lower administrative units and sub-units can preclude the completion of recommendations, with some recommendations achieving their goals and others falling short.⁴⁸ While this might signify the need for a stronger State Oceanic Administration, this can also point in the direction of a more structural problem that needs to be solved first.

Finally, the issue of securing the necessary financial resources to sustain such an integrated ocean policy is not uniformly regulated. Some countries do address the issue, be it in a most general⁴⁹ or, inversely, a very specific

2001 Maritime Doctrine of the Russian Federation even though it specifically deals with exploitation of Russia's oceans is silent on the aspect of precaution. Another inactive state in relation to the precautionary principle is Japan (IOC Study, n. 9 above, p. 127). Article 25 of its *Basic Act on Ocean Policy* is the closest to a preventative provision in the country's basic plan, and states the government's intention to ensure that the coast is protected and exploited appropriately.

⁴⁶ IOC Study, n. 9 above, p. 128.

⁴⁷ E.g., Norway (IOC Study, n. 9 above, p. 198).

⁴⁸ Lau, n. 31 above, p. 416. See also B. Penga, H. Honga, X. Xuea, & D. Jin, "On the Measurement of Socioeconomic Benefits of Integrated Coastal Management (ICM) Application to Xiamen, China," *Ocean and Coastal Management* 49 (2006): 93–109. The authors examine the impact of the sectoral approach in Xiamen Province, noting the benefits of successful implementation of the integrated coastal management approach in the province (id., pp. 101–106). However, the accuracy of these estimates, lack of data on the impact of the State Oceanic Administration in ocean management in this region, as well as the report's lack of data on fisheries management, leaves this so-called success open to refutations.

⁴⁹ For example, Japan states that the government shall take all necessary financial measures (IOC Study, n. 9 above, p. 123). See also the Brazilian (id., p. 53), Colombian (id., pp. 105–107 and 119), American (id., pp. 254, 258–259, 261–265, 267 and 269–271), and Portuguese entries in this respect (id., pp. 217, 219 and 228–229).

manner.⁵⁰ Others only mention specific actions that will be financed.⁵¹ Still others do not specifically touch upon this issue.⁵²

2.3. Conclusion

Other examples could be given, but this list suffices to press home the point that a national oceans policy is a chameleonic type of notion. Its content is easily adapted to the political priorities of the countries establishing them. Nevertheless, states are all confronted with the same basic problem, namely that if coherence and sustainability are to be achieved in future ocean use, some difficult issues will have to be tackled, if not now, then probably with more vigour at a later stage. It is therefore a positive development to see that countries are at least willing to learn from each other's experiences. Japan, for instance, when it embarked upon this process based its policy decisions, *inter alia*, on the preparatory work of a non-governmental institution that very carefully studied the examples of other countries that had already had some experience with the process.⁵³

The European Union, in its attempt to regulate usage of the oceans by bringing all maritime concerns within the region into a centralised policy as well as balancing the different uses of the oceans, adds one more policy-making

⁵⁰ Australia, for example, indicates the amount of money put aside for the implementation of the plan (IOC Study, n. 9 above, p. 6). It also pinpoints specific sources (see *id.*, pp. 20, 22, 24–26 and 34).

⁵¹ See the Norwegian (IOC Study, n. 9 above, pp. 163, 168–171, 173–174, 183, 186, 194 and 197) and Russian (*id.*, pp. 236, 238 and 243–244) examples.

⁵² UK Marine Bill, n. 34 above, had its Second Reading in the House of Lords on 15 December 2008 and started its Committee stages on 12 January 2009. The bill does not specifically address the issue of funding. See: Department for Environment, Food and Rural Affairs, *A Sea Change. A Marine Bill White Paper*, Cm. 7047 (March 2007), available: <<http://www.defra.gov.uk/marine/pdf/legislation/marinebill-whitepaper07.pdf>> (retrieved 10 February 2009). For additional concerns regarding funding see Department for Environment, Food and Rural Affairs, *Taking forward the Marine Bill: The Government response to pre-legislative scrutiny and public consultation*, 2008, Cm. 7422, pp. 13–14, available: <<http://www.official-documents.gov.uk/document/cm74/7422/7422.asp>> (retrieved 10 February 2009).

⁵³ M. Hayashi, “The Re-birth of Japan as an Ocean State: The New Basic Act and Ocean Policy” (contribution to an international conference, entitled “Ocean Governance: Structures, Functions, and Innovation,” organised by the Law of the Sea Institute, University of California, Berkeley, and Inha University, Seoul, at Berkeley, California, United States, 4–5 November 2008). Point reaffirmed during a personal conversation between M. Hayashi and the present author at that occasion.

level that requires harmonisation and prioritisation to the already complicated picture sketched above.⁵⁴ This European initiative may well be the precursor of the future state of ocean policy making. Indeed, ocean policies as they have been articulated so far are primarily state-centric. However, it cannot be overemphasised that there is a real need to ensure a coordinated effort spanning bordering states' policies. This will not only simplify decision-making processes for licensing procedures but can also lead to cross-border cooperation and consultation.⁵⁵ The nature of the maritime domain as an ecosystem cuts across administrative lines highlighting the importance of a coordinated approach in policy making and implementation⁵⁶ which so far is not readily found in states' ocean policies.

⁵⁴ J. Rankin, "Taming Tensions on Europe's Seas," *Maritime Policy* 13, 1 (2007).

⁵⁵ MSP Document, n. 40 above, p. 10.

⁵⁶ The UK Marine Bill, n. 34 above, is also a good example of best practice as it is designed to work together with Scotland's current consultations on a Scottish Marine Bill. These pieces of legislation recognise the need for a symbiotic approach in the development of both policies within the Union. See <<http://www.scotland.gov.uk/Publications/2008/07/11100221/5>> (retrieved 10 February 2009) for a full version of this bill. Chapter 2, Articles 48–49 are especially relevant to this study. Within the EU member states and non-member states, the INTERREG III B CADSES (Central, Adriatic, Danubian and South-Eastern European Space) Project is the best example of a cross-border initiative. Sixteen states in the Baltic, Adriatic and Black Sea regions, in accordance with sustainability principles, aim to ensure a cross-border approach in policy making and consultations. For a copy of the Project's handbook, see PlanCoast, *Handbook on Integrated Maritime Spatial Planning* (April 2008), available: <http://www.plancoast.eu/files/handbook_web.pdf> (retrieved 10 February 2009).

Chapter 3

Comparing the Integrated Maritime Policy of the European Union and the Oceans Policy of Canada

Timo Koivurova

3.1. Introduction

This contribution compares the European Union's newly-adopted Integrated Maritime Policy (IMP)¹ to the integrated ocean policy of Canada, which in 1996 became the first country to declare that it had a full-scale integrated ocean policy.² It can be presumed that the European Union (EU) can benefit from the

¹ The term Integrated Maritime Policy (IMP) is used here to denote the following three documents: The Integrated Maritime Policy, adopted via a Communication (the so-called Blue Book), its accompanying Action Plan (which specifies the broad guidance given in the IMP) and the “environmental dimension” of the IMP, the Marine Strategy Framework Directive (MSFD). The European Council, which adopted the Integrated Maritime Policy, understood it as composing of these three elements. It is important to keep in mind that references will also be made to the Communication and the Action Plan using the term IMP. Additionally, specific references will be made directly to the MSFD. See European Commission, *An Integrated Maritime Policy for the European Union, Communication from the Commission to the European Parliament, the Council, and the Committee of the Regions*, COM(2007) 575 final (Brussels, 10 October 2007) [hereinafter IMP]. The IMP was adopted by the European Council in December 2007; available: <<http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=COM:2007:0575:FIN:EN:PDF>> (retrieved 20 November 2008). The IMP was accompanied by an Action Plan that. See also, European Commission, *Accompanying document to the Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of Regions: An Integrated Maritime Policy for the European Union, Commission Staff Working Document*, SEC(2007) 1278 (Brussels, 10 October 2007), available: <http://ec.europa.eu/maritimeaffairs/pdf/ActionPaper/action_plan_en.pdf> (retrieved 20 November 2008) [hereinafter Action Plan]; and Directive 2008/56/EC of the European Parliament and of the Council of 17 June 2008 establishing a framework for community action in the field of marine environmental policy (Marine Strategy Framework Directive) (Text with EEA relevance), *Official Journal* L 164, 25 June 2008 P. 0019 – 0040, available: <<http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:32008L0056:EN:HTML>> (retrieved 20 November 2008) [hereinafter MSFD].

² As provided in Canada's Oceans Strategy: “On January 31, 1997, the Government of Canada brought the Oceans Act into force, making Canada the first country in the world to have comprehensive oceans management legislation,” *Canada's Oceans Strategy: Our Oceans, Our Future* (Ottawa: Fisheries and Oceans Canada, 2002), available: <http://www.dfo-mpo.gc.ca/oceans-habitat/oceans/ri-rs/cos-soc/pdf/cos-soc_e.pdf> (retrieved 10 December

Canadian ocean policy, both as a model to construct an integrated ocean policy as well as from the experience gained in Canada while implementing its ocean policy. This analysis focuses on the basic documents laying out integrated ocean policies in Canada and the European Union, respectively. First, however, it is important to examine in general the evolution of integrated ocean policies, which will assist in understanding the place of Canadian and EU integrated ocean policies in a larger trajectory.

3.2. The Emergence of National Integrated Ocean Policies: Problems and Possibilities

It is a formidable task to create an effective national integrated ocean policy. The reasons for this are well known, but useful to review. It is difficult to find an area of policy comparable in scope to integrated oceans policy: it goes beyond the co-ordination of maritime policies, not least because 70–80 per cent of marine pollution is caused by land-based activities. The coordination of the policy areas that an integrated oceans policy may interact with is not an easy task. Established policy areas typically operate on the basis of their own values and traditions, which is reflected in the legal system, where various legal regulations guide action on sectoral issues related to ocean areas and policy supervision is entrusted to a variety of ministries and agencies.

Another important factor making effective national integrated ocean governance challenging is the comparatively marginal role of ocean issues in national or local politics. In most constituencies, political issues related to the ocean — the immediate coastline being an exception — escape the attention of politicians, who should take the lead in advancing such a challenging policy initiative. Ocean policy as an instrument of coordinated planning and supervision is also a relatively new phenomenon, for until the mid-twentieth century, ocean activities remained at a relatively low level and their environmental impact was negligible.

2008) [hereinafter Oceans Strategy]. It should be noted, however, that the Netherlands and India already had integrated oceans policies in the 1980s; see, e.g., “Ocean Development,” Government of India website, available: <http://india.gov.in/sectors/science/ocean_development.php> (retrieved 20 November 2008); and M. Barry, I. Elema and P. Molen, “Governing the North Sea in the Netherlands,” Paper presented at the International Federation of Surveyors (FIG) Working Week and 125th Anniversary of FIG: “Still on the Frontier,” available: <http://www.fig.net/pub/fig_2003/TS_20/TS20_2_Barry_et_al.pdf> (retrieved 20 November 2008).

It is also important to note the main reasons why these integrated ocean policies have emerged. The frustration related to conflicting decisions and plans by various arms of the state, resulting from a fragmented agency and legal structure, certainly induces many to at least think about how the situation might be improved.³ The ever-increasing degradation of the oceans, an awareness of which has been made possible by the more sophisticated findings of the marine sciences (and whose publicity is guaranteed by dedicated environmental non-governmental organisations), has provided additional impetus for integrated policies, since ocean ecosystems can only produce their services up to a certain point.⁴ A zonal approach to national ocean policy is also many times the preferred option. While this approach makes the ocean policy coherent internally (that various maritime zones are established and legislated on the basis of the law of the sea and function consistently as part of national ocean

³ Both the IMP and the Canadian ocean policy express this in explicit terms. Chapter 2 (Context) of the IMP (n.1 above) contains the following passage:

Increasing competition for marine space and the cumulative impact of human activities on marine ecosystems render the current fragmented decision-making in maritime affairs inadequate, and demand a more collaborative and integrated approach. For too long policies on, for instance, maritime transport, fisheries, energy, surveillance and policing of the seas, tourism, the marine environment, and marine research have developed on separate tracks, at times leading to inefficiencies, incoherencies and conflicts of use.

Canada's Oceans Strategy (id.) provides in "The Context for Canada's Oceans Strategy" as follows:

Canada's oceans are governed by a complex web of laws and regulations managed by different levels of government. This governance structure points to the need for developing a unified vision and integrated approach to ocean management that effectively considers the impact of individual sector activities on each other, and on the oceans as a whole.

⁴ Chapter 2 (Context) of the IMP (id.) contains the following statement:

Ensuring that use of the marine environment is genuinely sustainable is a prerequisite for these industries to be competitive. The growing vulnerability of coastal areas, increasingly crowded coastal waters, the key role of the oceans in the climate system and the continuous deterioration of the marine environment all call for a stronger focus on our oceans and seas.

Canada's Oceans Strategy (id.) provides in "The Context for Canada's Oceans Strategy" as follows:

Oceans are facing severe environmental threats from over-exploitation, pollution from land-based and sea-based activities and the alteration and destruction of habitats and ecosystems. The health of oceans is affected by sewage and pollutant discharge in marine waters, excessive growth of marine plant life, alien species introduction and changes to hydrology and sediment flow. Despite efforts to improve environmental quality of coasts and seas both in Canada and abroad, degradation of ocean environments has continued.

policy), it has caused problems of uncoordinated development (given that for different policy areas, the maritime zones mean different things) and has led to calls for integrated ocean management.⁵

The first generation of ocean policies was focused on the coordination of various ocean uses rather than on how their overall impact on the marine ecosystems could be addressed.⁶ With the rise of the environmental movement, and especially its culmination in the 1992 United Nations Conference on the Environment and Development (and, more recently, the 2002 World Summit on Sustainable Development), the trend changed towards full-scale integrated ocean governance policies. Such a policy was adopted in Canada already in 1996 with the *Oceans Act* and the ensuing policy instruments. As has been pointed out in the literature, the coming into force of the United Nations Convention on the Law of the Sea (LOS Convention) in 1994 strengthened this trend, but only indirectly⁷ as the LOS Convention itself did not encourage the use of integrated ocean governance policies. However, since it laid out so many new powers and duties in the marine environment, the LOS Convention clearly served as a catalyst for integrated ocean policies. The various legal and policy instruments aimed at closing the gaps on the path to using oceans as commons, with the related danger of a tragedy of the commons, were very important in inducing states to think of their maritime areas in a new way. The management tools developed in science and nationally were gradually transferred to the instruments adopted by various intergovernmental organisations. Together they pushed states to adopt integrated management approaches, one of which was the designation of marine protected areas (MPAs) in their coastal areas and in large marine ecosystems.

In principle, there is an overwhelming consensus that more holistic ways to manage the oceans are imperative.⁸ Yet, as the research has pointed out, such approaches face many kinds of problems.⁹ States may well opt nationally for

⁵ See, e.g., Y. Tanaka, “Zonal and Integrated Management Approaches to Ocean Governance: Reflections on a Dual Approach in International Law of the Sea,” *International Journal of Marine and Coastal Law* 19 (2004): 483–514.

⁶ For a historical overview, see L. Juda, *International Law and Ocean Use Management: The Evolution of Ocean Governance* (London: Routledge, 1996).

⁷ The preamble of the LOS Convention provides: “Conscious that the problems of ocean space are closely interrelated and need to be considered as a whole.” *United Nations Convention on the Law of the Sea*, 10 December 1982, 21 *I.L.M.* 1261 (1982).

⁸ For an early but useful theoretical insight into the basic requirements for an integrated ocean policy see A. Underdal, “Integrated Marine Policy: What? Why? How?” *Marine Policy* 4 (1980): 159–169.

⁹ See, e.g., J.-P. Lévy, “A National Ocean Policy: An Elusive Quest,” *Marine Policy* 17 (1993): 75–80. For a recent authoritative comparison, see International Oceanographic Commission,

divergent policies — not uniform ones — and try to expand (even abuse) their already expanded ocean powers on the basis of national interests. If there had been a meeting of states parties to the LOS Convention, national ocean governance might have developed in more co-ordinated and uniform manner than it has. States parties could have closely followed the development of one another's ocean policy through meetings of the parties and implementation committees. Such a process would have arguably also meant that national ocean policies would have paid more attention to the international law of the sea than to national interests.

3.3. Comparison Between the European Union and Canadian Approaches to Ocean Policy

The IMP is clearly a unique exercise in the history of ocean governance. Even though the EU is acting like a federal state in many ways in some policy areas in an even more integrated manner than federal entities — its ocean powers differ vastly from those of federal states. While federal states may have constitutionally delegated many of their powers to their sub-units in many policy areas, this does not usually apply to maritime areas where the federal level exercises most powers affecting areas beyond the immediate coastal zone or territorial sea. This fundamental fact does not hold true for the EU, which, apart from having exclusive jurisdiction over fisheries, has only shared powers over many of the maritime policies. The Member States legislate the extent of their maritime areas and exercise and enforce most powers therein. This is a significant difference between the EU and federal states with respect to ocean governance, and prevents any straightforward comparison between them. This is not to say that useful lessons cannot be found, but care must be taken in such comparisons.

The IMP should, in the opinion of the present author, be seen as the first-ever social experiment in integrated ocean policy where the governing entity is a supranational organisation. The increasing legal development towards holistic

National Ocean Policy. The Basic Texts from Australia, Brazil, Canada, China, Colombia, Japan, Norway, Portugal, Russian Federation, United States of America (Paris: Unesco, 2007) (IOC Technical Paper, 75, Law of the Sea Dossier 1), available: <http://ioc3.unesco.org/abelos/index.php?option=com_docman&task=doc_download&gid=267> (retrieved 20 November 2008). See also R. Friedheim, "Designing the Ocean Policy Future: An Essay on How I Am Going To Do That," *Ocean Development & International Law* 31 (2000): 183–195, pp. 187–189.

ocean management has justified increasing the EU's powers in maritime areas. Yet, the overwhelming challenge of coordinating the actions of sovereign nations that exercise most of the powers pertaining to their sea areas clearly distinguishes the EU's formulation of an integrated maritime policy from the efforts of federal states to create a regional policy. In addition, the IMP can be seen as the most comprehensive policy ever adopted by the EU as it criss-crosses all possible policy areas, adding to the challenge of co-ordinating action within the EU.

The strong maritime traditions of European nation-states would seem to pose difficulties for creating integrated ocean governance at the EU level. Given the EU structure in maritime affairs, one might have assumed that an integrated maritime policy would never have materialised, and if it had, that it would certainly not have been able to borrow from earlier federal integrated ocean policies, in particular Canada's. Yet some interesting similarities exist between the two policies. A review of the similarities and differences between the ocean policies of the EU and Canada follows.

No similarities are evident in the way the ocean policies were legally constructed in the EU and Canada. The Canadian ocean policy was very logically constructed. It was given a clear legal foundation through the 1996 *Oceans Act*,¹⁰ which established the various maritime zones and laid down institutional powers and management structures. The goals, values, principles and management strategies were then specified by political means through the 2002 Oceans Strategy,¹¹ which implements the section 29 obligation of the minister and is based on practical experience gained in the interim, and the 2005 Action Plan.¹² Specific guidance for implementing integrated management plans pursuant to the *Oceans Act* is provided in the "Policy and Operational Framework for Integrated Management of Estuarine, Coastal and Marine Environments in Canada,"¹³ which was adopted in conjunction with the Oceans Strategy.

¹⁰ The *Oceans Act* came into force in 1997; see *Oceans Act*, S.C. 1996, c. 31, available: <<http://laws.justice.gc.ca/en/O-2.4/>> (retrieved 20 November 2008).

¹¹ Oceans Strategy, n. 2 above.

¹² Fisheries and Oceans Canada, *Oceans Action Plan* (Ottawa: Fisheries and Oceans Canada, 2005), available: <http://www.dfo-mpo.gc.ca/oceans-habitat/oceans/oap-pao/index_e.asp> (retrieved 20 November 2008) [hereinafter Oceans Action Plan].

¹³ Fisheries and Oceans Canada, *Policy and Operational Framework for Integrated Management of Estuarine, Coastal and Marine Environments in Canada* (Ottawa: Fisheries and Oceans Canada, 2002), available: <http://www.dfo-mpo.gc.ca/oceans-habitat/oceans/ri-rs/cosframework-cadresoc/page01_e.asp> (retrieved 20 November 2008) [hereinafter Policy and Operational Framework].

The development process was essentially the reverse in the case of the IMP, even though it also started with a legal act, the Marine Strategy Framework Directive (MSFD).¹⁴ The process started with the sixth environmental action program, which identified marine environment protection as a priority area. This paved the way to the adoption of the MSFD (part of the European Marine Strategy) under the lead of DG Environment. The MSFD focused on protecting marine ecosystems and was later deemed by the European Council to be the “environmental pillar” of the IMP.¹⁵ The MSFD requires the Member States to identify their marine regions and sub-regions and to achieve good environmental status in all of them by the year 2020. The Commission started the process of creating the full-scale IMP in 2005. It was adopted on 10 October 2007 (and later by the European Council in December 2007) as a political initiative, not through formal legal procedures. The IMP is led by DG Mare.¹⁶

This difference in how the integrated policies of the EU and Canada were implemented has concrete consequences. In the EU, work on holistic ocean governance started from the “environmental pillar,” which was adopted through

¹⁴ Since the Directive was subject to the co-decision procedure, it had to be accepted by both the European Parliament and the Council. MSFD, n. 1 above.

¹⁵ The heads of states and governments of the EU agreed to the following conclusions on maritime policy at the meeting of the European Council of 14 December 2007 as follows:

The European Council welcomes the Commission Communication on an integrated maritime policy for the European Union and the proposed Action Plan which sets out the first concrete steps in developing an integrated approach to maritime affairs. The broad participation in the preceding public consultation and the comprehensive debate at the Lisbon Ministerial Conference reflected the interest which stakeholders show for the development of such a policy. The future integrated maritime policy should ensure synergies and coherence between sectorial policies, bring added value and fully respect the principle of subsidiarity. Furthermore it should be developed as a tool to address the challenges facing Europe's sustainable development and competitiveness. It should take particularly account of the different specificities of Member States and specific maritime regions which should call for increased cooperation, including islands, archipelagos and outermost regions as well as of the international dimension. The European Council welcomes the conclusion of the Marine Strategy Framework Directive as the environmental pillar of this policy. The European Council invites the Commission to come forward with the initiatives and proposals contained in the Action Plan and calls on the future Presidencies to work on the establishment of an integrated maritime policy for the Union. The Commission is invited to report on progress achieved to the European Council at the end of 2009.

Conclusions from the European Council (14 December 2007), available: <http://ec.europa.eu/maritimeaffairs/conclusions_20071214_en.html> (retrieved 20 November 2008).

¹⁶ For a useful overview, see V. Frank, *The European Community and Marine Environmental Protection in the International Law of the Sea* (Leiden: Martinus Nijhoff Publishers, 2007), pp. 94–104.

a legal act (the MSFD) in 2008. The MSFD requires, among other things, that “Member States shall bring into force the laws, regulations and administrative provisions necessary to comply with this Directive by 15 July 2010 at the latest. They shall forthwith communicate to the Commission the text of those provisions.”¹⁷ Hence, the process of identifying the marine regions and sub-regions, as well as actions to achieve good environmental status for these waters, has started in full because it is legally required of the Member States. The same does not hold true for the IMP, which is a political document and is co-ordinated by a different directorate (DG Mare) than that supervising the implementation of the MSFD. The Commission has recently issued guidance to assist Member States in creating their national IMPs. However, the problem may be that in practice there is no legal backing for this guidance. In Canada, by contrast, all of the goals of the ocean policy are contained in the *Oceans Act* and related policy documents and co-ordinated by a single government agency, the Department of Fisheries and Oceans (DFO). Having a different legal basis and co-ordinating agency than its Canadian counterpart, the IMP may well tilt towards environmental goals rather than those advanced in the Blue Book.

Another difference between the policies is that the Canadian instruments provide only broad strategic level guidance, whereas the IMP and the accompanying Action Plan sets out very specific operational actions for the EU. Canada’s Oceans Strategy is a strategic document whose final part, “Strategic Directions for Implementing Canada’s Oceans Strategy,” moves slightly into operational goals. While Canada’s Oceans Action Plan does contain some operational goals in its final part “Initiatives for Phase I of the Oceans Action Plan,” overall the document is more strategic in nature.¹⁸ As is aptly noted in the Oceans Action Plan, the Oceans Strategy is based on a phased approach towards implementation. Although the IMP and Action Plan both contain strategic level guidance, they also provide details about individual actions to be taken, with the Action Plan even evaluating the benefits of those actions. This has the advantage of providing more specific guidance but, of course, leaves less discretion for the Commission in implementing the IMP.

The differences between the ocean policies of the EU and Canada thus appear to be numerous. The Canadian approach proceeds logically, in a step-by-step fashion, from a clear legal foundation to political goal setting, whereas the EU approach follows two distinct but interlinked tracks. The tracks differ in that the MSFD is legally binding while the IMP is not, and each is led by different directorates; they are linked in that the MSFD is the “environmental

¹⁷ MSFD, Article 26 (1), n. 1 above.

¹⁸ However, the Policy and Operational Framework (n. 13 above) provides more specific guidance on implementing integrated management plans.

dimension” of the IMP. Importantly, the process of drafting both the IMP and the Canadian ocean policy were as inclusive as possible, involving all the relevant stakeholders. The same approach has continued with the implementation of both ocean policies: transparency, public participation and stakeholder involvement have been given a lot of attention. This is very clear in the Canadian approach, which not only aims to involve all levels of government and Aboriginal peoples who have jurisdiction in the relevant maritime areas, but also encourages citizens to participate. The rationale is that broad participation will enhance the legitimacy of ocean management.¹⁹

In the EU, the IMP was the result of extensive stakeholder participation: Over 490 contributions were received and over 230 events held in the year-long stakeholder consultation process, which certainly increased the legitimacy of the exercise.²⁰ The guidance given to Member States in drawing up their national integrated maritime policies also demonstrates that the EU is dedicated to the principle of subsidiarity in the making of the IMP. The guidelines encourage the Member States to draw up their national IMPs together with all relevant levels of government and stakeholders.²¹

¹⁹ See the Policy Framework section of the Oceans Strategy:

Finally, the Strategy responds to the desire of Canadians to be engaged in ocean management activities by promoting stewardship and public awareness. Oceans stewardship means acting responsibly to conserve the oceans and their resources for present and future generations. Through stewardship initiatives, the government can encourage Canadians to volunteer and actively participate in the caring for ocean resources in meaningful and positive ways. Citizens also want to be engaged in decisions that affect them, and look for support for stewardship projects. Canada's Oceans Strategy builds on an existing foundation of stewardship and public awareness activities and will continue to develop and promote national initiatives in these areas. This active participation is encouraged through the Integrated Management planning process, but also through more specific activities. Stewardship initiatives under the Strategy will be co-ordinated with others such as the National Stewardship Initiative and the Natural Legacy Agenda. As well, oceans stewardship initiatives are important for supporting Canada's international commitments under Chapter 36 of Agenda 21. Industry is also interested in public/private sector partnerships that contribute to sustainable ocean use. Government roles in this relationship are to enable and encourage the public and private sectors to participate as completely as possible in helping to support sustainable ocean use. (Oceans Strategy, n. 2 above)

²⁰ See DG Maritime Affairs and Fisheries, European Commission, *Report on Consultations* (2007), available: <<http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=COM:2007:0574:FIN:EN:PDF>> (retrieved 20 November 2008).

²¹ DG Maritime Affairs and Fisheries, European Commission, *Towards best practice in integrated maritime governance and stakeholder consultation. Guidelines for an Integrated Approach to Maritime Policy, Communication from the Commission to the Council, the European Parliament, the European Economic and Social Committee and the Committee of the Regions*, COM(2008) 395 final (Brussels, 26 June 2008), available: <<http://ec.europa.eu/>

Both the IMP and the Canada's ocean policy started out in similar ways from the financial point of view. In general, the EU spending is planned for several years under a Financial Framework, which lays down maximum amounts by category of expenditure. The current framework was established in 2006 and covers the period 2007–2013. When the Financial Framework was established, the IMP was not yet in place. As a result, no provisions were made for the IMP. In 2009, the amounts proposed in the budget to finance the IMP are drawn from unutilised amounts originally foreseen for the Common Fisheries Policy (CFP). According to the responsible EU official, "This does not mean that all the needs of the CFP have not been adequately addressed in the 2009 budget. They have been. Had the IMP not required the resources that have been proposed for it, these resources would not have been utilised for another purpose."²² Initially, the Canadian ocean policy lacked its own budget. Fiscal restraints in 1997 meant that no new funds were provided to implement the 1996 *Oceans Act* or Canada's Oceans Strategy. "Until the federal government's approval of the Oceans Action Plan in 2005, funding for implementation of the national ocean management approach had been achieved through reallocation of funds within DFO."²³ Yet, this changed with the Oceans Action Plan and Health of the Oceans commitment, both of which provided new funding for ocean policy.²⁴

When we examine the substantive elements of the two policies, it does seem that the EU has benefited from the Canadian experience.²⁵ First, the institutional powers have been designed in IMP in much the same way as in the *Oceans Act*. In contrast to the United States' integrated ocean policy, which is based on a committee working under the Council of Environmental Quality, the lead agency in Canada is the minister for the Department of Fisheries and Oceans. The EU used the same approach, with the DG Fisheries and Maritime

maritimeaffairs/pdf/com08_395_en.pdf> (retrieved 20 November 2008) [hereinafter Guidelines].

²² Official of the European Commission, DG Maritime Affairs and Fisheries, C1, pers. comm. (19 December 2008).

²³ See Mageau, VanderZwaag & Farlinger chapter in this book (Chapter IV), p. 79.

²⁴ Id.

²⁵ In fact, when the EU provided guidelines for Member States on how to do the national IMPs, it referred to the experience of many countries, including Canada, and stated:

The principles, objectives and modalities of all these maritime policies are largely similar. All these countries recognise the major contribution made by sea-based activities to their economy. They all acknowledge that the intensive development of these activities poses a challenge to sustainable development and use of their sea resources. And they have all decided to develop an overall policy that allows a comprehensive, coordinated approach, ensuring sustainable development of the different sea resources and activities. (Guidelines, n. 21 above, p. 5)

Affairs acting as the lead agency in developing the IMP. The directorate was administratively re-organised on the basis of marine regions and renamed DG Mare (maritime affairs and fisheries),²⁶ and is the directorate that steers the IMP process.

The goals of the two ocean policies are essentially the same: to promote economic development in such a way that possibly conflicting uses of the ocean can co-exist and prosper and that the overall health of ocean ecosystems is maintained in the long term. These overarching goals are guided by similar principles in both policies: decision-making principles (e.g., the precautionary principle) and management principles (e.g., an ecosystem approach, co-management).²⁷

Moreover, specific goals are expressed in remarkably similar terms, e.g., promoting economic prosperity, stimulating better marine science, building maritime heritage, and taking international leadership in the development of the law of the sea.²⁸ The goal of becoming an international leader in ocean governance is a good illustration of the similarities between the two policies. Although both share this goal, the two policies use different approaches to realizing it. An examination of the relevant parts of each policy illustrates the difference in the extent to which they provide guidance for action.

²⁶ This is recent development, see European Commission, “Commission: new organisation will boost implementation of EU integrated maritime policy and Common Fisheries Policy,” *Press Release* (27 March 2008), available: <http://ec.europa.eu/maritimeaffairs/press/press_rel_270308_en.html> (retrieved 20 November 2008).

²⁷ The IMP provides (1. Executive Summary): “These actions will be guided by the principles of subsidiarity and competitiveness, the ecosystem approach, and stakeholder participation.” The preambular paragraphs 27 and 44 of the “environmental dimension” of the IMP, the MSFD, endorse the precautionary principle. The preamble of the *Oceans Act*, n. 10 above, refers to the sustainable development ecosystem approach to the oceans and their resources; the precautionary approach to the conservation, management and exploitation of marine resources; the integrated management of oceans and marine resources; and economic diversification and the generation of wealth for the benefit of all Canadians, and in particular for coastal communities. The Oceans Strategy, n. 2 above, outlines the following principles: sustainable development, integrated management and precautionary approach.

²⁸ Canada’s Oceans Strategy, n. 2 above, outlines three policy objectives: understanding and protecting the marine environment, supporting sustainable economic opportunities, and international leadership. This is complemented in the Oceans Action Plan, n. 12 above, to expressly include ocean science and technology. The IMP, n. 1 above, includes as its action areas (section 4) the following: maximising the sustainable use of the oceans; delivering the highest quality of life in coastal regions and seas, building a knowledge and innovation base for the maritime policy, promoting Europe’s leadership in international maritime affairs and, finally, raising the visibility of maritime Europe.

Both Canada and the EU are committed to similar goals in regard to high seas biodiversity and marine protected areas. Canada's Oceans Action Plan provides:

There are a number of important areas, such as the protection of high-seas biodiversity and the concept of high-seas marine protected areas, where Canada can bring to the global stage practical solutions that can lead international benchmarking and best practice exercises.²⁹

The EU provides much more specific guidance on this issue (as on many others). Section 4.4. of the IMP provides:

The Commission will propose an Implementing Agreement of UNCLOS [footnote omitted - TK] on marine biodiversity in areas beyond national jurisdiction and work towards successful conclusion of international negotiations on Marine Protected Areas on the high seas.

The Action Plan provides background to the action, describes the action and describes the benefits of choosing exactly this action:

Background:

The Green Paper on Maritime Policy highlights the importance of protecting the marine environment and biodiversity in Areas Beyond National Jurisdiction (ABNJ), including through a multilateral implementing agreement protecting marine biodiversity under UNCLOS. These initiatives are necessary to meet the objectives agreed in the World Summit on Sustainable Development Joint Plan of Action to significantly reduce current rates of biodiversity loss by 2010 and to establish representative networks of marine protected areas by 2012.

Action:

International negotiations are focussing on developing an international regulatory framework that will allow co-ordinated action to protect marine biodiversity in the high seas, including through the establishment of marine protected areas in ABNJ. They also include participation by the EU in international discussions on marine genetic resources in ABNJ to better understand the underlying environmental and socio-economic

²⁹ Oceans Action Plan, n. 12 above, Initiatives for Phase I of the Oceans Action Plan, International Leadership, Sovereignty and Security.

issues. Negotiations are ongoing in several global fora, including in particular the United Nations General Assembly context (law of the sea), the Convention on Biological Diversity and sectoral organisations. At regional level, negotiations are ongoing under regional seas conventions (e.g. North Atlantic, Mediterranean, Baltic) and regional fisheries organisations. Delivering on these objectives will depend on the outcome of such international negotiations, which makes it difficult to estimate a timetable. In addition to these negotiations, the Commission will before the end of 2009 put forward a strategy for the protection of high seas biodiversity through the designation of marine protected areas.

Benefits of an integrated approach/relevance for an integrated maritime policy:

Action in this area must be seen in conjunction and coherent with EU internal action on the protection of habitats, and the across-the-board implementation of an eco-system-based approach, including in fisheries. Furthermore, an integrated approach to these issues aims at going beyond the current sectoral fragmentation of measures in the high seas. The joint implementation of international commitments under UN instruments is necessary to ensure coherent action by economic sectors in the high seas, a condition for sustainable development in areas beyond national jurisdiction.³⁰

Clearly, the goals are very close to each other, but the EU's approach identifies the specific steps to be taken, explicitly justifying the planned action and identifying specific policy and legislative actions in the IMP.³¹

The more specific integrated management approach of the EU has similarities but also differences to that of Canada. These differences mainly stem from the constitutional structures of the two policy entities, but also from their management traditions. Both Canada and the EU promote the establishment of marine protected areas. Canada has three schemes for establishing MPAs, with the responsibilities allocated to three agencies for

³⁰ Oceans Action Plan, n. 12 above, pp. 30–31.

³¹ See, e.g., IMP, n. 1 above, “The Commission will: reassess, in close cooperation with social partners, the exclusions affecting maritime sectors in EU labour legislation,” (p. 9) and “The Commission will: propose a new ports policy, taking account of the multiple roles of ports and the wider context of European logistics; make proposals to reduce the levels of air pollution from ships in ports, namely by removing tax disadvantages for shore side electricity; issue guidelines on the application of the relevant Community environmental legislation to port development” (p. 8).

different issue areas. However, DFO has overall authority in co-ordinating the development and implementation of a national system of marine protected areas on the basis of section 35 (2) of the *Oceans Act*.³² In the EU, the responsible directorate is DG Environment, which supervises the NATURA 2000 programme and ensures that the EU complies with its international obligations in respect of MPAs. These areas may be those already designated under the Wild Birds or Habitats directives or under international legal obligations. The MSFD lays down a legal obligation for the Commission to report on the progress made with respect to marine protected areas.³³

However, the management scheme in Canada is more flexible in the sense that DFO minister can establish different kinds of integrated management systems depending on the overall load facing the ecosystem. The Canadian system also develops incrementally: there is no requirement to first map out all the marine regions. Rather, the large ocean management areas (LOMAs), and more specific integrated governance schemes, are created one-by-one over time.³⁴ Even though more specific guidance in implementing these various integrated governance schemes is given in the “Policy and Operational Framework for Integrated Management of Estuarine, Coastal and Marine Environments in Canada,” the management system is built on tailoring the kind of management structure that best suits the specific conditions in an area. The EU system is more rigid in the sense that it first requires all marine regions to be mapped out by Member States with the help of the Commission. Subsequently, management measures are to be laid down to achieve the good environmental status by 2020 at the latest. However, the guidance given to Member States to implement their own national IMPs contains possibilities for creating various sorts of ocean management models, with participation from national coast guards, national maritime agencies and operators of surveillance

³² See Fisheries and Oceans Canada, “Marine Protected Areas Policy. Developing a National System of Protected Areas for the Marine Environment (March 1999),” available: <http://www.dfo-mpo.gc.ca/oceans-habitat/oceans/ri-rs/mpapolicy-politiquezpm/page05_e.asp> (retrieved 20 November 2008).

³³ Article 21 of the MSFD, “Progress report on protected areas,” n.1 above, reads: “On the basis of the information provided by the Member States by 2013, the Commission shall report by 2014 on progress in the establishment of marine protected areas, having regard to existing obligations under applicable Community law and international commitments of the Community and the Member States. The report shall be submitted to the European Parliament and to the Council.”

³⁴ Appendix to the 2002 ocean governance document lists the integrated management schemes already in place. Oceans Strategy, n. 2 above, available: <http://www.dfo-mpo.gc.ca/oceans-habitat/oceans/ri-rs/cos-soc/page09_e.asp> (retrieved 20 November 2008), Appendix – Integrated Management Initiatives at Work.

systems, together with all possible stakeholders. This stage of national management and implementation is to be carried out by the Maritime Spatial Planning, which means there are possibilities to come up with various kinds of integrated management structures throughout European seas.

3.4. Evaluation

Even though the constitutional structures of the EU and Canada differ in maritime affairs, it is clear that their ocean policies exhibit similar features. This is perhaps not so surprising given that the international binding and non-binding instruments which have established the basic ideals for integrated ocean governance have also found their way into both Canadian and EU ocean policies. As discussed above, there are interesting similarities between the two policies that may well result from Canada being one of the first states to lay down a comprehensive integrated ocean policy.

In comparison to federal states, the greatest challenge for the EU in implementing its IMP is how the Member States will implement the MSFD and, perhaps most importantly, the national IMPs for which guidance was given recently. As the IMP requires, the Commission will

invite Member States to draw up national integrated maritime policies, working closely with stakeholders, in particular the coastal regions; propose in 2008 a set of guidelines for these national integrated maritime policies and report annually on EU and Member States' actions in this regard from 2009.³⁵

Hence, the first signs of whether the Member States have started to react to this political initiative in their national policy will be seen in 2009. However, it does seem that the EU might find it better that the Member States fulfil their “environmental dimension” obligations of the IMP, given that the MSFD obligations are legally required whereas the other obligations adopted via the Communication are not.³⁶

³⁵ IMP, n. 1 above, p. 5.

³⁶ On the other hand, the recently published Roadmap for Maritime Spatial Planning shows that several integrated management structures have already been developed in the EU Member States. See European Commission, *Roadmap for Maritime Spatial Planning: Achieving Common Principles in the EU, Communication from the Commission to the European Parliament, the Council, the Economic and Social Committee and the Committee of Regions*, COM(2008) 791 final (Brussels, 25 November 2008), available: <<http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=COM:2008:0791:FIN:EN:PDF>> (retrieved 10 January 2009).

Chapter 4

Oceans Policy: A Canadian Case Study*

Camille Mageau,** David L. VanderZwaag, and Susan Farlinger

4.1. Introduction

Over the years, Canada, like most other coastal nations, has developed an intricate set of policies and regulatory instruments focused on the management of traditional sectoral uses of the oceans. A decade ago, the necessary steps were taken to modernise the way in which Canadian authorities manage ocean-based activities. Canada did not set out to design “one” comprehensive, all inclusive oceans policy. The primary approach taken was to identify, through Canada’s *Oceans Act*,¹ one federal lead authority responsible for the coordination and harmonisation of existing policy and statutory instruments and to formulate a national vision and guiding principles for oceans management within which existing and emerging policies and laws would be interpreted and implemented.

This chapter outlines Canada’s statutory and policy instruments and implementation approach to oceans management. The political and environmental context within which a new management approach was developed will be described as well as the processes which led to the development of the *Oceans Act*, its policy framework, Canada’s Oceans Strategy² and finally, the Government of Canada’s blueprint for action, Canada’s Oceans Action Plan.³ The relationship between key ocean-related

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** The views expressed in this paper do not necessarily reflect the views of the Government of Canada.

¹ *Oceans Act*, S.C. 1996, c. 31.

² Fisheries and Oceans Canada, *Canada’s Oceans Strategy: Our Oceans, Our Future* (Ottawa: Fisheries and Oceans Canada, Oceans Directorate, 2002), available: <http://www.dfo-mpo.gc.ca/oceans-habitat/oceans/ri-rs/cos-soc/pdf/cos-soc_e.pdf> (retrieved 15 November 2008).

³ Fisheries and Oceans Canada, *Canada’s Oceans Action Plan for Present and Future Generations* (Ottawa: Fisheries and Oceans Canada, Communications Branch, 2005), available:

agreements and Canadian domestic law and practice is summarised. In closing, lessons learned during the past decade will be examined, as will the challenges which lie ahead.

4.2. Ocean Policy Context, Processes and Institutional Arrangements

4.2.1. Basic Information

Canada is a maritime nation which borders on the North Pacific, the Arctic and the North Atlantic oceans, with marine areas covering a broad range of ocean climactic and oceanographic environments. Canada's current ocean regions total almost three million square kilometres,⁴ and this will likely increase significantly once the extended continental shelf is delimited through the 1982 United Nations Convention on the Law of the Sea (LOS Convention) process.⁵

Eight out of the ten provinces and all three territories border on oceans, and approximately 24 percent of Canada's population inhabits the coastal zone along a coastline which is one of the longest in the world at about 245,000 kilometres.⁶ The oceans provide the recreational, environmental, employment, income, and cultural staples to over seven million Canadians who live in coastal communities.⁷

Challenges in coastal and marine environments are recognised by governments worldwide. Canada has, in the past, defined itself as a fishing and shipping nation, with a long history and culture based on the rich productivity and diversity of its ocean resources. With the emergence of a number of other ocean-related industries, many of which vie for access to the same ocean space, the footprint of each industry and that of the sum of these activities have taken their toll on the environment resulting in:

<http://www.dfo-mpo.gc.ca/oceans-habitat/oceans/oap-pao/index_e.asp> (retrieved 14 November 2008).

⁴ World Resources Institute (WRI), *Earth Trends – The Environmental Information Portal. Country Profiles, Canada* (2004), available: <http://earthtrends.wri.org/pdf_library/country_profiles/coa_cou_124.pdf> (retrieved 14 November 2008) [hereinafter WRI].

⁵ *United Nations Convention on the Law of the Sea*, 10 December 1982, 1833 *U.N.T.S.* 397, reprinted in *I.L.M.* 21(6): 1261–1354 [hereinafter LOS Convention].

⁶ Fisheries and Oceans Canada, "Oceans Management," (n.d.), available: <http://www.dfo-mpo.gc.ca/oceans-habitat/oceans/index_e.asp> (retrieved 15 November 2008).

⁷ WRI, n. 4 above.

- failing oceans health, including declining fish stocks, increasing numbers of marine species at risk and invasive species, declining biodiversity, and marine habitat loss;
- growing oceans user conflicts and administrative, jurisdictional and regulatory complexities; and,
- an oceans industry sector that is significantly weaker than its potential.

The marine areas that border Canada are vastly different from one another. The Pacific coast of Canada is characterised by a relatively narrow continental shelf about 50 kilometres in width and a very indented coastal area of bays, fjords with inlets, wetlands, and estuaries. In addition to shipping, and aboriginal, recreational and commercial fishing activities, the dominant industries include ecotourism, with an increasing focus on aquaculture in some areas of the coast.

The Atlantic coast has a much wider continental shelf. Offshore areas have traditionally supported extensive and varied fishing, marine transportation activities and, increasingly, initiatives related to oil and gas, ecotourism and aquaculture.

The Arctic marine area along the northern coast of Canada and its archipelago is characterised by a broad shallow shelf and land fast ice. Transportation activities in the Arctic are largely seasonal and predominantly community re-supply oriented. Land mining, oil and gas exploration, ecotourism, and subsistence harvesting all contribute to the marine-based northern economy.

Canada still has unresolved ocean boundaries.⁸ In the Arctic, the offshore boundary in the Beaufort Sea between Alaska and the Yukon remains in dispute, while Canada and Greenland (Denmark) have yet to settle the boundary in the Lincoln Sea. On the Pacific coast, Canada has maritime boundary issues with the United States in the Dixon Entrance region (British Columbia – Alaska) and seaward of the Juan de Fuca Strait (British Columbia – Washington). In the Gulf of Maine, on the Atlantic coast, Canada and the United States continue to dispute the ownership of Machias Seal Island in the Bay of Fundy and jurisdiction over adjacent waters.⁹

Over the last 15 years, the oceans have been a dynamic growth sector for the Canadian economy, and currently generate over CAD22 billion (2002 estimate) directly through ocean-related industries. Commercial fishing

⁸ D. L. VanderZwaag, *Canada and Marine Environmental Protection: Charting a Legal Course Towards Sustainable Development* (London: Kluwer Law International, 1995).

⁹ T. L. McDorman, P. M. Saunders, and D. L. VanderZwaag, "The Gulf of Maine Boundary: Dropping Anchor or Setting a Course?" *Marine Policy* 9, no. 2 (1985): 90–107.

continues to make an annual contribution to Canada's oceans economy totalling CAD2 billion (harvest value), supplemented by a further CAD1 billion from the fish processing industry. Employment in aquaculture has grown by over 460 percent, and the value of fish farm production has increased by more than 500 percent. Offshore oil and gas production has increased in annual investment value over the past decade from CAD250 million to CAD5 billion. Employment in the offshore oil and gas sector now represents 4.0 percent of the overall oceans industry compared to past levels of 0.3 percent. Considerable renewable energy resources such as offshore wind, wave and tidal energy have been identified on all three of Canada's coasts and initial projects are currently in early development in both British Columbia and the Bay of Fundy. Recreation and tourism have grown by over 33 percent in the past decade despite a drop in the number of recreational anglers. There has been major growth in both coastal tourism (156 percent) and cruise ship tourism (176 percent in the number of passengers); and although tourism still remains a relatively small contributor to the oceans economy, it is increasing in its significance. As a maritime nation, Canada has a significant and vibrant shipping industry. CAD143.7 billion worth of goods and commodities moved through Canada's national marine transportation system in 2006.¹⁰

Aboriginal communities have the longest history of coastal occupancy. Coastal aboriginal cultures are tied to ocean resources for food, social, and ceremonial reasons. Commerce between First Nations, and after contact between aboriginal communities and Europeans, were often based on oceans activities or resources.

Canada is a confederation of ten provinces and three northern territories. Federal jurisdiction extends to marine navigation and shipping, international affairs, defence, environmental protection, as well as the protection of living resources within offshore areas.¹¹ Provinces, the sub-national authorities within Canada, may also exert jurisdiction over some offshore waters. In general, provinces own and manage the seabed within the coastal inter-tidal area. Provinces have constitutional authority over property and civil rights within the province pursuant to section 92(13) of the *Constitution Act, 1867*.¹² Canadian case law has recognised two legal foundations for provincial offshore jurisdiction, marine areas considered *inter fauces terrae* (between the jaws of

¹⁰ Transport Canada, *Transportation in Canada 2007, An Overview* (Ottawa: Minister of Public Works and Government Services, 2007), available: <<http://www.tc.gc.ca/pol/en/Report/anre2007/index.html>> (retrieved 21 November 2008).

¹¹ Fisheries and Oceans Canada, *The Role of the Federal Government in the Oceans Sector* (Ottawa: Fisheries and Oceans Canada, Oceans Directorate, 1997).

¹² *Constitution Act, 1987* (U.K.), 30 & 31 Vict., c. 3, reprinted in R.S.C. 1985, App. II, No. 5.

land) and marine areas considered to be part of a province at the time of confederation.¹³

Management of activities within Canadian marine waters has developed on a sector or regional basis and is therefore diverse and lacks a cohesive approach. For example, there are ten major and 13 minor federal agencies that have mandates that impact on oceans. There are roughly 50 federal statutes directly impacting ocean-related activities and more than 80 provincial laws that affect coastal and marine planning.¹⁴

In addition to this legislated division of power, Canada sets as a high priority its constitutional obligations to Aboriginal peoples. The *Constitution Act, 1982* recognises and affirms existing aboriginal and treaty rights.¹⁵ Where land claim agreements have been settled, and include specific resource management responsibilities and commitments by the federal government to cooperate and collaborate with the signatories, the situation is clear. In many cases, however, claims which may impact on ocean areas have not yet been settled, and interim arrangements which do not prejudice the outcomes of land claims discussions are in place, being developed, or needed.¹⁶

The *Oceans Act* contains an explicit provision to provide certainty that it does not abrogate or derogate from existing aboriginal and treaty rights.¹⁷ This provision sets out the framework for the relationship of *Oceans Act* programmes and activities with Aboriginal peoples. While integrated planning and the development of marine protected areas are without prejudice to rights and title, the involvement and support of Aboriginal peoples is clearly required where their interests are potentially affected. Many coastal communities, of and by themselves, have large Aboriginal populations and in some areas, specific arrangements respecting harvesting and co-management have been made with aboriginal authorities.

The importance of the oceans to the federal, provincial, First Nations, municipal, and local communities, stakeholders, and interest groups requires engagement of these interests in setting priorities and planning oceans activities. It is this context that informed the development of an *Oceans Act*. The federal Department of Fisheries and Oceans Canada (DFO) is the lead

¹³ *Reference Re Ownership of the Bed of the Strait of Georgia*, 1 S.C.R. 388 [1984].

¹⁴ Fisheries and Oceans Canada, *The Role of the Provincial and Territorial Governments in the Oceans Sector* (Ottawa: Oceans Directorate, Fisheries and Oceans Canada, 1997).

¹⁵ *Constitution Act, 1982*, being Schedule B to the *Canada Act 1982* (U.K.), 1982, c. 11.

¹⁶ C. R. Brown, C. Rebecca, and J. I. Reynolds, "Aboriginal Title to Sea Spaces: A Comparative Study," *University of British Columbia Law Review* 37, no. 2 (2004): 449–493; D. J. R. Moodie, "Aboriginal Maritime Title in Nova Scotia: An "Extravagant and Absurd Idea"?" *University of British Columbia Law Review* 37, no. 2 (2004): 495–540.

¹⁷ *Oceans Act*, n. 1 above, s. 2.1.

federal agency responsible for the coordination of both domestic and international oceans policy. This mandate is in addition to more traditional marine responsibilities related to the management of aboriginal, commercial and recreational fisheries, marine safety and communication, environmental response, and the provision of marine scientific advice and research.

4.2.2. Brief Overview of Nature and Evolution of National Oceans Policy

Although the development of a national oceans policy and legislation was first proposed in 1987,¹⁸ the first steps towards the elaboration of a national oceans policy for Canada were taken when the Government of Canada, in 1996, enacted the *Oceans Act*. This statute formalises, in a comprehensive way, how Canada's oceans are to be defined and managed.

The *Oceans Act* lays the foundation for the oceans policy by committing to a number of principles and is structured to delineate the geographic area over which Canada intends to apply its ocean management approach.¹⁹ The Act defines the guiding principles of integrated management, sustainable development, and the precautionary approach, provides the mandate to develop and implement programmes to implement these principles, and situates DFO's existing regulatory and management authorities within the context of oceans management. The Act also recognises other mandated authorities and provides guidance on how their mandates should be delivered within the marine environment.

The development and review of the *Oceans Act*, through the public and parliamentary processes, was complemented by a broad public consultation process which led to Canada's Oceans Strategy, the over-arching oceans policy framework for the integrated management of Canada's oceans.²⁰ During the five years immediately following the proclamation of the *Oceans Act*, the ocean management programmes outlined in the statute were piloted in the field to better define the policy guidance required and inform the development of the federal Oceans Action Plan.

Flowing from the political commitment in the October 2004 Speech from

¹⁸ Fisheries and Oceans Canada, *Oceans Policy for Canada: A Strategy to Meet the Challenges and Opportunities on the Oceans Frontier* (Ottawa: Fisheries and Oceans Canada, Information and Publications Branch, 1987).

¹⁹ *Oceans Act*, n. 1 above, ss. 28–30.

²⁰ Fisheries and Oceans Canada, *Canada's Oceans: Experience and Practices*, Monograph No. 7, Sustainable Development in Canada Series (Ottawa: Minister of Supply and Services, 1999).

the Throne and the 2005 Budget Speech,²¹ Canada's Oceans Action Plan outlines and funds priority areas for action under four major themes, namely: international leadership, sovereignty, and security; integrated oceans management for sustainable development; health of the oceans; and science and technology.²² As part of the National Water Strategy, the federal budget, on 19 March 2007, proposed CAD19 million over two years to support the Health of the Oceans, which will further support sustainable development, management and protection of ocean resources, and water quality.²³

4.2.3. Policy Development Processes

In Canada, the development of an oceans policy has been, and continues to be, an evolutionary process. In 1994, the National Advisory Board on Science and Technology (NABST), following extensive public consultations, recommended to the prime minister that Canada move decisively to address environmental issues confronting oceanic areas and maximise the economic benefits that could be derived by managing ocean resources more sustainably.²⁴ Specific recommendations focused on the need to develop a national policy as well as legislation focused on the management of ocean and coastal spaces and resources.

Although similar calls had been made in the past, there was, at this time, a convergence of domestic and international fishing and pollution issues, primarily in the North Atlantic, that served to focus public, as well as political, interest.²⁵ As a result of this heightened profile, drafting of a comprehensive *Oceans Act* was initiated and the act came into force on 31 January 1997.

²¹ Government of Canada, *Speech from the Throne to Open the First Session of the Thirty-Eighth Parliament of Canada* (Ottawa: Prime Minister's Office, 5 October 2004), available: <<http://www2.parl.gc.ca/Parlinfo/Documents/ThroneSpeech/38-1-e.html>> (retrieved 13 November 2008); Department of Finance Canada, *The Budget Speech 2005* (Ottawa: Department of Finance Canada, 2005), available: <http://www.fin.gc.ca/budget05/pdf/_speeche.pdf> (retrieved 14 November 2008).

²² Fisheries and Oceans Canada, n. 3 above, p. 5.

²³ Department of Finance Canada, *The Budget Speech 2007* (Ottawa: Department of Finance Canada, 2007), available: <<http://www.budget.gc.ca/2007/pdf/speeche.pdf>> (retrieved 12 November 2008).

²⁴ National Advisory Board on Science and Technology (NABST), *Opportunities from our Oceans: Report of the Committee on Oceans and Coasts* (Ottawa: NABST, 1994) [hereinafter NABST].

²⁵ Commissioner of the Environment and Sustainable Development, *Report of the Commissioner of the Environment and Sustainable Development to the House of Commons*,

4.2.3.1. *The Oceans Act*

The *Oceans Act* is comprised of three parts, which provide the necessary infrastructure to move forward with a modern oceans governance framework.

Part One of the Act recognises Canada's maritime zones and commits the Government of Canada to meeting its conservation and management responsibilities within these marine areas. Consistent with the terms of the LOS Convention, Canada has defined its territorial sea, contiguous zone, exclusive economic zone, and continental shelf excluding the outermost extent. Canada is in the process of delimiting the outer extent of the continental shelf and intends to make a submission to the UN Commission for the Limits of the Continental Shelf by the required deadline in 2013.²⁶

Part Two of the Act provides the Minister of Fisheries and Oceans with specific policy and programme authorities to implement Canada's approach to oceans management in estuarine, coastal, and marine ecosystems. Section 29 of the *Oceans Act* provides for the development of a national strategy, Canada's Oceans Strategy, which constitutes the policy framework for modern oceans management and serves as guidance for the development and updating of sector-based policies and processes. The Act calls upon the minister to develop this strategy in collaboration with federal colleagues, provincial and territorial governments, affected aboriginal organisations, coastal communities, and other persons and bodies, including those bodies established under land claims agreements. Finally, the Act includes provisions for the development of three specific programme areas: 1) marine protected areas; 2) marine environmental quality; and 3) integrated management plans. These programmes are the key tools to implement the national ocean policy objectives: understanding and protecting the marine environment, supporting sustainable economic opportunities, and international leadership.

Part Three of the *Oceans Act* sets out the accountabilities for the Act. It identifies the Minister of Fisheries and Oceans as the lead federal authority responsible for oceans management within Canada and situates the existing resource management, scientific, hydrographic, coast guard, and other responsibilities of the department within an oceans management context.

Chapter 1 Fisheries and Oceans Canada – Canada's Oceans Management Strategy (Ottawa: Office of the Auditor General of Canada, 2005), available: <[http://www.oag-bvg.gc.ca/domino/reports.nsf/html/c20050901ce.html/\\$file/c20050901ce.pdf](http://www.oag-bvg.gc.ca/domino/reports.nsf/html/c20050901ce.html/$file/c20050901ce.pdf)> (retrieved 12 November 2008).

²⁶ Foreign Affairs and International Trade Canada, Legal Affairs Branch, *Examples of Current Issues of International Law of Particular Importance to Canada – Oceans Law*, available: <<http://geo.international.gc.ca/cip-pic/library/oceanslaw-en.asp>> (retrieved 12 November 2008).

Following adoption of the *Oceans Act*, DFO re-allocated modest funds to support the implementation of the Act through a series of pilot projects and the development of Canada's Oceans Strategy in consultation with Canadians.²⁷ Pilot projects were selected based on feasibility criteria, including the complexity of the ocean issues involved, the receptivity of potential partners, the level of scientific information available, and the conservation imperatives of the area. Projects included the identification of areas of interest for marine protected areas, and the announcement of several pilot marine protected areas, such as the Sable Gully and Endeavour Hot Vents in 1998.²⁸ Pilot integrated management initiatives were also established in the area of the Eastern Scotian Shelf (ESSIM) in 1998, the Beaufort Sea in 2000, and the Pacific North Coast of British Columbia (PCIMA) in 2001.²⁹ The pilot integrated management and marine protected areas projects provided lessons with respect to policy integration, the building of relationships, the development of the governance structures, and related arrangements.

The policy development process continued its course with two public engagement and consultation processes. The first was focused on the vision for the *Oceans Act*.³⁰ The other focussed on a structured consultation on Canada's Oceans Strategy and was designed to solicit federal, provincial, First Nations, and public input. Over a period of five years, DFO engaged the views and perspectives of Canadians by supporting a wide range of discussions, workshops, and consultation activities across the country.

4.2.3.2. Canada's Oceans Strategy

Canada's Oceans Strategy and its companion Integrated Management and Operational Framework were released in 2002 following formal federal, provincial, territorial, aboriginal, and public consultations.³¹ Presented to Cabinet, the Oceans Strategy received government endorsement and became the basis upon which federal activities were to be conducted in marine waters.

²⁷ Fisheries and Oceans Canada, n. 2 above.

²⁸ Fisheries and Oceans Canada, Statement by David Anderson, Minister of Fisheries and Oceans Canada: Announcement on Offshore Marine Protected Areas (Ottawa: Fisheries and Oceans Canada, 8 December 1998).

²⁹ Commissioner of the Environment and Sustainable Development, n. 25 above.

³⁰ Fisheries and Oceans Canada, *A Vision for Ocean Management*, Ministerial Vision Paper (Ottawa: Fisheries and Oceans Canada, 1994).

³¹ Fisheries and Oceans Canada, n. 2 above; Fisheries and Oceans Canada, *Policy and Operational Framework for Integrated Management of Estuarine, Coastal and Marine Environments in Canada* (Ottawa: Fisheries and Oceans Canada, Oceans Directorate, 2002).

The release of the Canada's Oceans Strategy as a policy of the Government of Canada set out the achievement of its objectives as a shared responsibility for all federal departments with an oceans mandate.³² The following fundamental principles are set out in the *Oceans Act* and Canada's Oceans Strategy:

- *Integrated Management*: plan and manage human activities impacting on oceans in a comprehensive fashion while considering all factors necessary for the conservation and sustainable use of marine resources and the shared use of ocean space.
- *Sustainable Development*: integrate social, economic, and environmental aspects of decision making.
- *Precautionary Approach*: err on the side of caution in making management decisions.

Integrated management is a spatially-based planning process that results in common understanding of ecosystem and human activity objectives on the part of regulators, stakeholders, and interested parties and the production of an "integrated management plan" for a geographic area.³³ The plan provides a framework to conduct activities and to develop and implement integrated and adaptive management strategies and actions. The plans are based on the recognition that integrated management planning must occur in an ecosystem context for the decisions to be environmentally sound and ocean activities sustainable.

Canada's Oceans Strategy commits the government to work collaboratively within the federal government and among levels of government, to share responsibility for achieving common objectives, and to engage Canadians in ocean-related decisions in which they have a stake.³⁴ Integrated management planning includes the establishment of institutional governance mechanisms as a cornerstone of the national oceans approach. This integration is not limited to policies and legislative authorities that oversee the management of oceans activities; its primary focus is planning and managing activities on a geographic basis.

Integration is required to achieve *sustainable development*, which in itself requires that conservation issues be addressed and that economic diversification and multiple uses be recognised as legitimate objectives to be striven for.

³² Fisheries and Oceans Canada, n. 2 above, p. 18.

³³ B. Cicin-Sain and R. W. Knight, *Integrated Coastal and Ocean Management: Concepts and Practices* (Washington, DC: Island Press, 1998).

³⁴ Fisheries and Oceans Canada, n. 2 above, pp. 18–20.

The ability to adapt management decisions to reflect new scientific and technical developments, changing economic and social objectives, and to respond to positive or negative environmental responses, is key to achieving the principles of integrated management and sustainable development.

The *precautionary approach* should be followed as part of the decision-making process for integrated management. When there is a risk of serious or irreversible harm and there is significant scientific uncertainty, then decisions and management options will err on the side of caution. Within the context of oceans management, application of the precautionary principle is inextricably linked to two other concepts, an ecosystem-based and science-based approach to decision making.³⁵

The *ecosystem-based approach* relies on the identification of ecosystem objectives that, together with social and economic objectives, form the basis for integrated management planning and related decision making. These ecosystem objectives are based on an assessment of ecological information and an evaluation of the risk posed to ecosystem structure and function based on both available information and uncertainties. In this way, the risks of uncertainty are incorporated into decisions and are managed into the future through adaptive management.

4.2.4. Institutional Arrangements and Processes Used

Following prime ministerial acceptance of the recommendation by NABST's Committee on Oceans and Coasts (1994) that Canada formulate an overall oceans policy framework and develop ocean-focused legislation,³⁶ a ministerial vision paper on oceans management was released.³⁷ Public comments on the vision paper served to form the basis of the draft legislation. While parliamentary procedures do not allow for public review of draft legislation, information sessions outlining the intent of the legislation were held. The normal parliamentary consultation procedures, which involve formal publication of draft legislation by the House of Commons, as well as targeted consultations with affected parties, were conducted. Witnesses to the

³⁵ D. Cobb, M. Kislalioglu Berkes, and F. Berkes, "Ecosystem-based management and marine environmental quality indicators in northern Canada," in F. Berkes, R. Huebert, H. Fast, M. Manseau, and A. Diduck, eds., *Breaking Ice: Renewable Resource and Ocean Management in the Canadian North* (Calgary: University of Calgary Press, 2005): 71–94.

³⁶ NABST, n. 24 above.

³⁷ Fisheries and Oceans Canada, n. 30 above.

parliamentary review process, including potentially affected stakeholders, environmental non-government organisations, Aboriginal peoples, coastal communities, and academics, broadened the scope of the Act.

DFO also led the development of Canada's Oceans Strategy, incorporating the lessons learned from the pilot application of the *Oceans Act* programme and the views expressed during public engagement processes. Policy development entailed consulting a range of governmental and non-governmental stakeholders and using different mechanisms to connect with sub-national and aboriginal authorities and the academic community. Since 1997, DFO has engaged the views and perspectives of Canadians by supporting a wide range of discussions, workshops, and consultation activities across the country. These activities include the public discussion document, "Towards Canada's Oceans Strategy"³⁸; an interactive website (http://www.dfo-mpo.gc.ca/canwaters-eauxcan/index_e.asp); public opinion polls and research; an international Oceans Stewardship Conference³⁹; international workshops on integrated management; cross-country consultation sessions; the establishment and use of a Minister's Advisory Council on Oceans⁴⁰; and a national oceans discussion series in cooperation with the Canadian Broadcasting Corporation and the International Oceans Institute of Canada.⁴¹ Bilateral meetings were conducted with key national stakeholders including environmental non-governmental organisations and the main aboriginal organisations.

The development of a national oceans policy, therefore, involved a mix of legislation, policy development, pilot projects, and relationship building. While legislation and policy development take place at the national level in federal departments such as DFO, coordination and collaboration are required at many levels to create the environment and tools to implement such a horizontal collaborative initiative. Governance arrangements and processes are described below and Table 4.1 gives an indication of the complexity of these relationships.

³⁸ Fisheries and Oceans Canada, "Toward Canada's Oceans Strategy," Discussion Paper (Ottawa: Fisheries and Oceans Canada, 1997).

³⁹ Fisheries and Oceans Canada, "Partnerships for Living Oceans," Canadian Oceans Stewardship Conference Report, 6–8 June 2001, Vancouver, British Columbia (Ottawa: Oceans Directorate, Fisheries and Oceans Canada, 2001).

⁴⁰ Fisheries and Oceans Canada, "Thibault Appoints Two New Members to Minister's Advisory Council on Oceans," *News Release* (Ottawa, 10 December 2002).

⁴¹ Canadian Broadcasting Corporation (CBC), "Oceans Explorations 2001: Learning From Our Oceans" (IDEAS, CBC Radio One, 2001), available: <<http://www.cbc.ca/ideas/features/oceans>> (retrieved 10 November 2008) [hereinafter CBC].

Table 4.1. National, sub-national and local oceans governance structures and agreements

	Examples of Governance Structures			Examples of Agreements
	National	Sub-National	Local	
International	Membership in international committees, councils and science organisations, including regional fisheries management organisations, Arctic Council, Asia-Pacific Economic Co-operation (APEC), International Maritime Organization, Intergovernmental Oceanographic Commission			
Other government departments (OGD)	Deputy ministers' committee Support committees	Sub-national implementation committees	OGD planning or regulatory processes	National Marine Protected Area Strategy
Provinces and territories	Canadian Council of Fisheries and Aquaculture Ministers' Oceans Task Group	ESSIM Regional Oceans Management Committee	Lead on coastal planning	Canada/British Columbia MOU Canada/Quebec St. Lawrence Action Plan
Aboriginal organisations		Co-management bodies established pursuant to Inuvialuit Final Land Claims Agreement directly involved in Beaufort Sea ocean management planning bodies	Planning process/ traditional ecological knowledge consultation	Turning Point Agreement (British Columbia-First Nations agreement relating to Pacific North Coast LOMA)

Stakeholders				
Local communities	Sub-National Implementation Committees	Advisory/Planning Process		
Industry stakeholders	Sub-national implementation committees	Advisory/planning process		Ocean Management Research Network Canadian Association of Petroleum Producers /draft seismic regulations
Oceans interest groups	Sub-national implementation committees	Advisory/planning process		Membership on Canadian delegations

A Minister’s Advisory Council on Oceans was established in September 2000 for a three-year term to provide advice on ocean management policy issues and to help engage the public and private sectors in issues related to oceans management.⁴² The council consisted of nine individuals from diverse backgrounds representing a range of interest groups, including Aboriginal peoples, industry members and academics.⁴³ As such, the council was instrumental in increasing public understanding and awareness of the nature and intent of Canada’s ocean management approach.

In 2001, federal, provincial and territorial ministers agreed that an Oceans Task Group would be established under the aegis of the Canadian Council of Fisheries and Aquaculture Ministers to help develop and implement Canada’s Oceans Strategy.⁴⁴ This task group continues to provide a forum for federal-provincial issues on oceans management with its work guided by an annual workplan approved by ministerial council.

Further, to foster the scientific understanding necessary to support ocean management policy, and to bridge the gap between natural and social sciences,

⁴² Fisheries and Oceans Canada, n. 40 above.

⁴³ Fisheries and Oceans Canada, “Members of the Minister’s Advisory Council on Oceans (MACO),” Backgrounder (Ottawa: Fisheries and Oceans Canada, September 2000).

⁴⁴ Canadian Council of Fisheries and Aquaculture Ministers, “Fisheries and Aquaculture Ministers Make Progress in Key Areas,” *News Release Ref: 830-729/04* (Toronto: Canadian Intergovernmental Conference Secretariat (CICS), 20 September 2001), available: <http://www.scics.gc.ca/cinfo01/83072904_e.html> (retrieved 12 November 2008).

an Ocean Management Research Network (OMRN) was established as a joint initiative between the Social Science and Humanities Research Council (SSHRC) and DFO in 2001. The OMRN has created a national network of interdisciplinary and cross-sectoral research working groups to create knowledge and best practices for sustainable oceans management.⁴⁵

To aid federal government coordination and input to ocean policy development, a system of interdepartmental committees on oceans was established at the deputy minister, assistant deputy minister, and programme levels. Four interdepartmental working groups were also formed to focus on the four “pillars” set out in Canada’s Oceans Action Plan, namely, international leadership, sovereignty and security; integrated oceans management for sustainable development; health of the oceans; and oceans science and technology.⁴⁶

The call to advance modern ocean management in the Speech from the Throne in 2004 and the 2005 Budget Speech,⁴⁷ and the designation by the prime minister of a parliamentary secretary to support implementation of the Oceans Action Plan provided the high-level profile and the political pressure necessary to secure the funding needed for a government-wide initiative.⁴⁸ This resulted in the Oceans Action Plan (2005–2007). In 2007, the government further committed five years of funding to specific elements of the broad oceans agenda, namely, Health of the Oceans, a CAD61.5 million initiative comprised of 22 specific components being carried out by five partnered federal departments/agencies.⁴⁹

Overall, the various governance mechanisms and agreements have been effective in developing a policy framework and action plan that reflects a range of stakeholder interests. These initiatives have been endorsed at the highest levels of government.

⁴⁵ Ocean Management Research Network, “Review and Update from the National Secretariat: Network News” (Oceans Management Research Network, June 2004), available: <http://www.omrn.ca/eng_about.html> (retrieved 20 January 2007).

⁴⁶ Fisheries and Oceans Canada, “Performance Report for the Period ending March 31, 2004” (Ottawa: Treasury Board of Canada, 2004), available: <http://www.tbs-sct.gc.ca/rma/dpr/03-04/FO-PO/FO-POd34_e.asp> (retrieved 10 November 2008).

⁴⁷ Government of Canada, n. 21 above; Department of Finance Canada, n. 21 above.

⁴⁸ Fisheries and Oceans Canada, n. 46 above.

⁴⁹ Department of Finance Canada, n. 23 above.

4.3. Nature of the Policy and Legislation Established

4.3.1. Nature of the Resulting Policy

The *Oceans Act* is enabling legislation, designed to provide the Minister of Fisheries and Oceans with the responsibility of focusing current federal legislative and policy tools to increase the linkages among and overall effectiveness of federal government efforts in specific geographic areas.⁵⁰ This collaborative aspect of the legislation is the most challenging to implement in that willing partners are needed to advance ocean management. Intergovernmental agreements have been required, as well as negotiations with industry and aboriginal authorities. Implementation of *Oceans Act* programmes have moved at different paces in different areas, with more rapid progress achieved in ocean management areas where existing collaborative mechanisms were already in place. As lead and facilitator, DFO has had to concentrate on building the relationships while at the same time developing the science-based tools and fostering the governance arrangements needed to incorporate the values and interests of others.

The *Oceans Act* and the oceans policy framework do not supersede nor fetter other policies or statutes, but provide context within which other ocean-related mandates should operate. On this basis, both the Act and Canada's Oceans Strategy provide the broad framework to guide further federal policy development to work with other levels of government and provide new context within which to interpret older policies. Together, they provide the principles and key tools to implement modern oceans governance, within which existing policies and statutes, and traditional relationships between regulators and their traditional "clients," may operate. As the guiding principles such as precaution and adaptive management are interpreted and utilised in integrated management planning, they will be integrated into new sectoral policies. Since the building blocks of Canada's oceans policy framework, and the associated implementation programmes, are solidly anchored on precaution, ecosystem-based management, and sustainable development, these principles are by definition imbedded in decisions that will be taken within the integrated management planning areas.

⁵⁰ Oceans Act, n. 1 above, s. 29, 33.

4.3.2. Implementation of Principles

In Canada, an ecologically-based framework to guide the development of integrated management plans has been developed. The integrated management planning framework extends from the large to the small scale, i.e., from large ocean management areas (LOMAs) to coastal management areas (CMAs). The Canadian approach to integrated management recognises that management objectives and planning practices must reflect the fact that ecosystems nest within other ecosystems. Governance structures, practices, and decisions respecting resource and activities management are made with explicit consideration of ecosystem impact. As such, the precautionary approach is built into integrated management through the identification of ecosystem objectives that activities must respect within specified planning areas. A brief review of Canada's incorporation of the principles of ecosystem-based management, integrated management, the precautionary approach, and public participation and community-based management follows.

4.3.2.1. Ecosystem-based Management

The Preamble of the *Oceans Act* states that “conservation, based on an ecosystem approach, is of fundamental importance to maintaining biological diversity and productivity in the marine environment.” An ecosystem-based approach to management recognises that human activities must be managed in consideration of the inter-relationships between organisms, their habitats, and the physical environment, based on the best science available. The Act further holds that human activities should be managed such that marine ecosystems, their structure (e.g., biological diversity), function (e.g., productivity), and overall environmental quality (e.g., water and habitat quality) are not compromised and are maintained at appropriate temporal and spatial scales. It is in these key areas that ecosystem objectives will be set for each of the integrated management areas.⁵¹

Significant domestic and international efforts have been invested in making this principle operational.⁵² In 2001, Canada held a scientific workshop to develop a preliminary framework which had conservation of species and

⁵¹ B. Cicin-Sain, ed., “The Role of Indicators in Integrated Coastal Management, Special issue,” *Oceans and Coastal Management* 46, n. 3–4 (2003).

⁵² Intergovernmental Oceanographic Commission (IOC), *A Reference Guide on the Use of Indicators for Integrated Coastal Management*, ICAM Dossier 1, IOC Manuals and Guides No. 45 (Paris: UNESCO, 2003) [hereinafter IOC].

habitats and the sustainability of human use as the two over-arching objectives.⁵³ Work has continued in Canada, and internationally, to further refine the initial objectives identified at this meeting. Three over-arching ecosystem objectives have been identified: maintain populations, species and communities within bounds of natural variability; conserve the function of each component of the ecosystem so that it can play its natural role in the food web; and conserve the physical and chemical properties of the ecosystem.⁵⁴ This work has resulted in the development of a process and tools to apply ecosystem-based management to decision making within Canada's LOMAs.

Figure 4.1 outlines the process used in Canada to apply an ecosystem-based approach to integrated oceans management. Implementation of ecosystem-based management begins with the identification of marine ecoregions that are based on ecological features and functions.⁵⁵ Existing scientific and traditional information on the state and condition of the ecosystem bound within the planning area is then collected, and a science-based review of that information and an evaluation of the risks posed to ecosystem structure and function are conducted. As a result of the review and evaluation of known scientific information, ecologically and biologically significant areas, ecologically and biologically significant species, and community properties, as well as degraded areas and depleted species of special concern, are identified.⁵⁶ Priority ecosystem-based conservation objectives and limits are defined within these ecoregions. Management decisions and the choice of management measures adopted are informed by the conservation objectives.⁵⁷

⁵³ G. Jamieson, R. O'Boyle, J. Arbour, D. Cobb, S. Courtenay, and R. Gregory, et al., "Proceedings of the National Workshop on Objectives and Indicators for Ecosystem-based Management, Sidney, BC, 27 February – 2 March 2001," *Canadian Science Advisory Secretariat Proceedings Series No. 2001/09* (Ottawa: Fisheries and Oceans Canada, 2001).

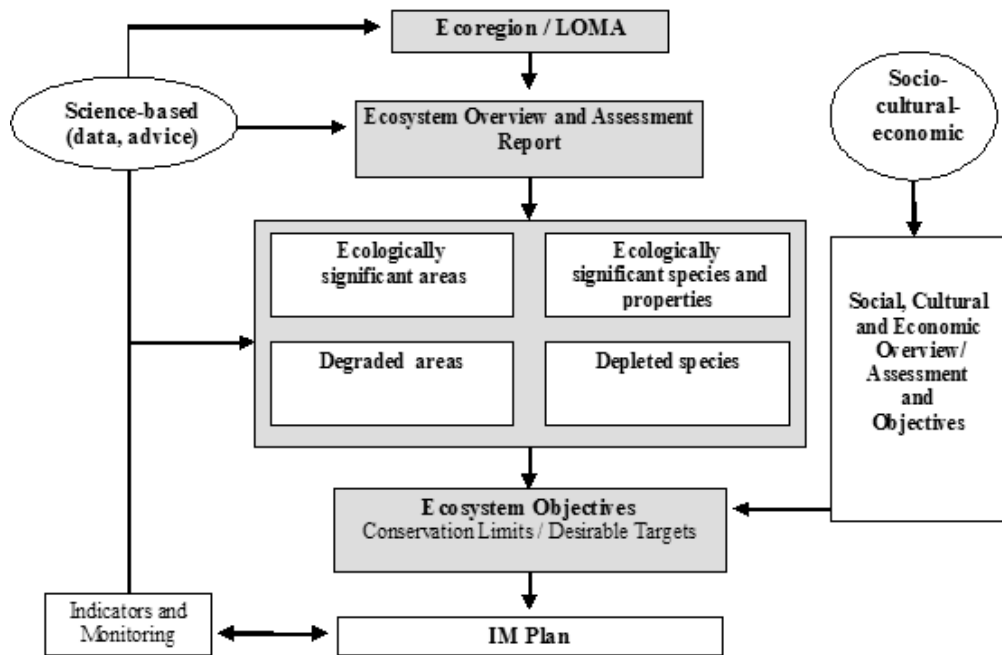
⁵⁴ Id., pp. 16–20.

⁵⁵ H. Powles, V. Vendette, R. Siron, and B. O'Boyle, "Proceedings of the Canadian Marine Ecoregions Workshop, Ottawa, March 23–25, 2004," *DFO Canadian Science Advisory Board Secretariat Proceedings Series 2004/016* (Ottawa: Canadian Science Advisory Secretariat, Fisheries and Oceans Canada, 2004), available: <http://www.dfo-mpo.gc.ca/csas/Csas/Proceedings/2004/PRO2004_016_B.pdf> (retrieved 10 November 2008).

⁵⁶ Fisheries and Oceans Canada, *Identification of Ecologically and Biologically Significant Areas*, Canadian Science Advisory Secretariat (CSAS), Ecosystem Status Report No. 2004/006 (Ottawa: Fisheries and Oceans Canada, 2005), available: <http://www.dfo-mpo.gc.ca/csas/Csas/status/2004/ESR2004_006_e.pdf> (retrieved 10 November 2008).

⁵⁷ Fisheries and Oceans Canada, *Habitat Status Report on Ecosystem Objectives*, Canadian Science Advisory Secretariat (CSAS) Habitat Status Report No. 2004/001 (Ottawa: Fisheries and Oceans Canada, 2004) available: <http://www.dfo-mpo.gc.ca/csas/Csas/status/2004/HSR2004_001_e.pdf> (retrieved 10 November 2008).

Figure 4.1. Development of ecosystem-based management objectives to support integrated management (IM) planning



Source: Oceans Directorate, Department of Fisheries and Oceans Canada, Ottawa, April 2009.

It is important to reiterate that integrated management is a means to achieve an end—the sustainable management of ocean resources and spaces. For this reason, Canada’s integrated management processes are designed to initially identify conservation objectives which must be respected by any activity wishing to operate in the planning area if the ecosystem is to continue to function and sustain the pressures of resource extraction and other ocean uses. Once the “conservation limits” are defined, the Canadian integrated management process focuses on the identification of social, cultural, and economic objectives or desirable targets that sub-national and local governments, stakeholders, and the public wish to achieve in the planning area.

Ecosystem considerations are being incorporated into fisheries management policies, plans, and practices. For example, in Canadian waters where relatively unique and highly sensitive marine ecosystems are known to exist, and where there is scientific evidence that fishing practices are having a long-term adverse effect on the ecosystem, action has been taken to mitigate these effects through the application of management measures. These measures include:

- fishing gear modifications, mesh and hook size considerations, and other measures to ensure that fishing practices conform to specific habitat conservation requirements
- application of seasonal and area fishing closures if impacts cannot be mitigated
- establishment of marine protected areas where long-term protection measures cannot be adequately addressed through fishing closures and other measures
- monitoring of the area for compliance and management effectiveness

However, ecosystems do not respect political or administrative boundaries. As a result, it has been important to give effect to the concept of collaborative planning and management systems. Domestic decision making across ecosystems will be connected by the participation of federal, provincial, territorial, aboriginal, and local authorities and programmes. The minister has the option to use bilateral agreements with provinces/territories and co-management arrangements with aboriginal groups to implement and achieve ecosystem objectives. For example, in 2004, the governments of Canada and British Columbia signed a Memorandum of Understanding Respecting the Implementation of Canada's Oceans Strategy on the Pacific Coast of Canada, with a commitment to develop sub-agreements focused on integrated management, marine protected areas, and information sharing.⁵⁸ In the Arctic, the Beaufort Sea Integrated Management Planning Initiative (BSIMPI) is guided by the Senior Management Committee, a collaborative body composed of representatives from government, aboriginal, and industry stakeholder groups.⁵⁹

Ecosystem-based management objectives for large oceans management areas are set at an ecosystem or broad ecoregion scale. Integrated management planning units, and sectoral management plans nested within these areas, do not necessarily correspond to an entire ecoregion. Consequently, the *Oceans Act*

⁵⁸ Fisheries and Oceans Canada, Memorandum of Understanding Respecting the Implementation of Canada's Oceans Strategy on the Pacific Coast of Canada (2004), available: <http://www.dfo-mpo.gc.ca/oceans-habitat/oceans/ri-rs/bc-cb/index_e.asp> (retrieved 10 November 2008).

⁵⁹ G. M. Elliott and B. Spek, "Integrated Management Planning in the Beaufort Sea: Blending Natural and Social Science in a Settled Land Claim Area," in N. W. P. Munro, T. B. Herman, K. Beazley, and P. Dearden, eds., *Making Ecosystem-based Management Work, Proceedings of the Fifth International Conference on Science and Management of Protected Areas, Victoria, BC, May, 2003* (Wolfville, Nova Scotia: Science and Management of Protected Areas Association, 2004): 1–10.

provides the authority to set marine environmental quality guidelines, requirements and standards which can be specific to one particular planning area, but which complement the broader scale ecosystem objectives.⁶⁰ Monitoring programmes tied to the ecoregion-level ecosystem objectives and the marine environmental quality targets linked to specific management plans provide a mechanism for tracking change over time and triggering management action.

4.3.2.2. Integrated Management

Recognising that integration must carry over to the planning of conservation areas as well, the *Oceans Act* calls for the Minister of Fisheries and Oceans to lead and coordinate the development and implementation of a national system of marine protected areas on behalf of the Government of Canada.⁶¹ Three federal agencies, DFO, Parks Canada, and Environment Canada, are mandated to establish federal marine protected areas, and provincial authorities also are active in protecting areas within their areas of jurisdiction.⁶² To maximise the effectiveness of federal intervention, and ensure that the appropriate tools are being used, DFO, in collaboration with other federal departments, has developed a Federal Marine Protected Areas Strategy to achieve a national network of marine protected areas.⁶³ Efforts to achieve a similar network with provincial authorities are focused on the development of federal-provincial collaboration agreements and their direct involvement in the five integrated management priority areas within which ecologically and biologically sensitive areas are being identified.

As part of the Oceans Action Plan, implementation of integrated management is focused in five priority geographic areas where mandated

⁶⁰ Oceans Act, n. 1 above, s. 32(d).

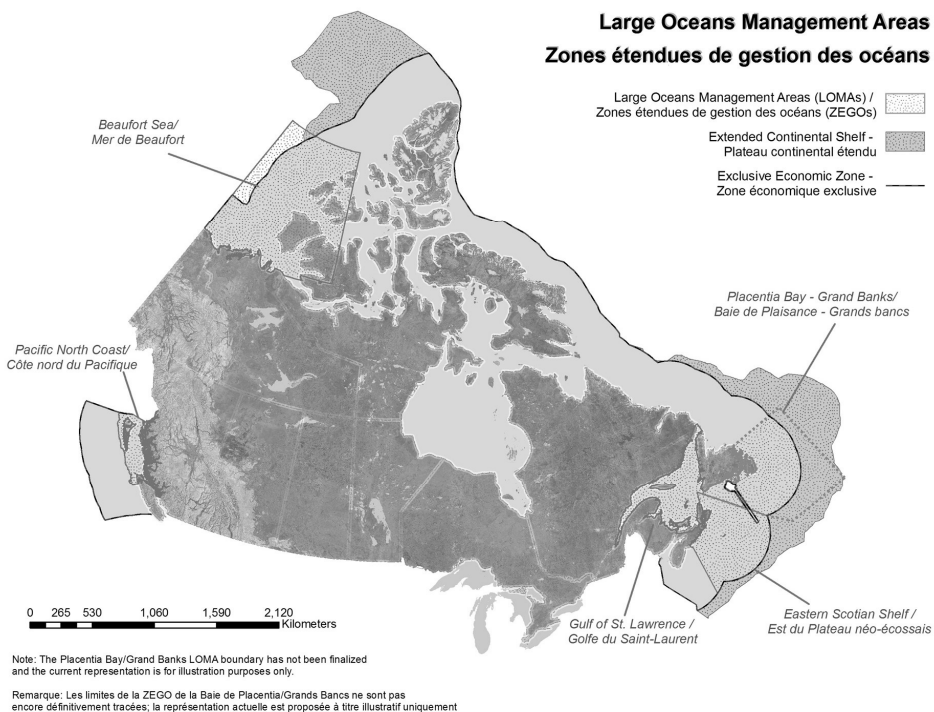
⁶¹ Oceans Act, id., s. 35(2); Fisheries and Oceans Canada, “National Framework for Establishing and Managing Marine Protected Areas,” Work document (Fisheries and Oceans Canada, 1999), available: <http://www.dfo-mpo.gc.ca/oceans-habitat/oceans/ri-rs/mpaframework-cadre-zpm/index_e.asp> (retrieved 10 November 2008).

⁶² Government of Canada, “Working Together for Marine Protected Areas: A National Approach” (Ottawa: Fisheries and Oceans Canada, 1998), available: <http://www.dfo-mpo.gc.ca/oceans-habitat/infocentre/archives/natmpa-zpmnat/index_e.asp> (retrieved 10 November 2008).

⁶³ Government of Canada, *Canada’s Federal Marine Protected Areas Strategy* (Ottawa: Fisheries and Oceans Canada, 2005), available: <http://www.dfo-mpo.gc.ca/canwaters-eauxcan/infocentre/publications/docs/fedmpa-zpmfed/pdf/mpa_e.pdf> (retrieved 10 November 2008).

federal, provincial, territorial, and aboriginal authorities are working cooperatively to develop integrated ocean management plans. These priority integrated management areas are Placentia Bay/Grand Banks off Newfoundland, the Scotian Shelf off Nova Scotia, the Beaufort Sea in the western Arctic, the Gulf of St. Lawrence, and the Pacific North Coast, or Queen Charlotte Basin, off British Columbia (Figure 4.2).

Figure 4.2. Priority integrated management planning areas



Source: Oceans Directorate, Department of Fisheries and Oceans Canada, Ottawa, April 2009.

Activities undertaken within each of the planning areas include the assessment and overview of the state of health of marine ecosystems, which provide mandated authorities and stakeholders with information on marine and coastal ecosystems, and recommendations to support planning and management decisions. In collaboration with the Geological Survey of Canada, DFO is mapping the seabed to better characterise benthic habitats, define bottom communities, and support identification of the most appropriate management

actions.⁶⁴ Areas, species, and community properties in need of special management and/or conservation measures have also been identified, as have degraded areas and depleted species. Governance arrangements to foster federal, provincial, territorial, and aboriginal collaboration have been established as have fora to engage citizens and stakeholders.

While some of these activities were already well advanced in some of the priority LOMAs due to previous federal investments and efforts, the influx of additional funds and the strict accountability attached to the special budget allocations have ensured implementation of Oceans Action Plan initiatives within a prescribed period of time. The Eastern Scotian Shelf is well advanced with the final draft of the ESSIM Integrated Ocean Management Plan released in July 2006.⁶⁵ In the other priority LOMAs of the Pacific North Coast, the Gulf of St. Lawrence, the Placentia Bay/Grand Banks, and Beaufort Sea, ecosystem overview report and assessments are complete. Ecologically and biologically significant areas, species, and properties have also been identified and priority conservation objectives formulated.

Integrated management is more than the development of spatially-based management plans. Effective management requires integration at a variety of levels. There are numerous examples of spatial integration where efforts between provincial authorities, responsible for land-based issues and inter-tidal seabed, and federal authorities, responsible for overlying waters and resources, are being coordinated to establish the necessary protection measures on land and in coastal waters to achieve the objectives of coastal marine protected areas. For example, coastal sand dunes adjacent to the Basin Head Marine Protected Area, off Prince Edward Island, have been protected under the authority of the provincial *Natural Areas Protection Act*.⁶⁶

There are numerous opportunities for science and spatial co-location of federal and provincial science programmes in the five geographic areas. A primary example is the targeted use of seabed mapping using side scan sonar to support integrated management within the priority areas while still addressing the primary agency's geological mandate. A further example is provided by the development of the Federal Marine Protected Areas Strategy by DFO, Parks Canada, and Environment Canada. The strategy requires the three federal agencies with marine protected area mandates to establish a network of marine protected areas, integrate information, engage public interests, and

⁶⁴ Fisheries and Oceans Canada, n. 3 above.

⁶⁵ ESSIM Planning Office, "Eastern Scotian Shelf Integrated Ocean Management Plan (2006–2011) – Final Draft" (Dartmouth, Nova Scotia: Fisheries and Oceans Canada, 2006).

⁶⁶ Government of Canada, "Basin Head Marine Protected Area Regulations, Regulatory Impact Analysis Statement," *Canada Gazette I*, Vol. 139, No. 25 (2005).

determine the best means to achieving the objectives of the marine protected area.⁶⁷

Integration among sectors is multifaceted. One example is the establishment of ONE OCEAN in 2002. This stakeholder driven information and public education group was established in Newfoundland by leaders in the oil and gas industry and the fishing industry to resolve issues of common concern through informal interventions and information exchanges.⁶⁸

At the international level, Canada has worked with the United States and the Intergovernmental Oceanographic Commission (IOC) to develop a handbook on the identification and use of governance, socioeconomic, and ecological objectives, and related indicators. These objectives and indicators measure the effectiveness of integrated coastal and oceans management.⁶⁹

4.3.2.3. Precautionary Approach

Canada has recognised the importance of the precautionary approach in key legislation and policy documents. The preamble to the *Oceans Act* calls for a precautionary approach to marine resources management. Section 30 of the Act mandates that Canada's national oceans strategy be founded on the principles of sustainable development, integrated management, and the precautionary approach.

Other Canadian legislation also incorporates the precautionary approach. The *Canadian Environmental Protection Act, 1999* (CEPA),⁷⁰ for example, requires that administrative decisions under the act, such as whether to allow new chemical substances into Canada, follows the precautionary principle. CEPA also encourages pollution prevention approaches. The 2003 amendments to section 4 of the *Canadian Environmental Assessment Act* (1992) specifically embed precaution as a fundamental purpose of the statute.⁷¹

⁶⁷ Government of Canada, n. 63 above, pp. 12–13.

⁶⁸ ONE OCEAN Secretariat, *ONE OCEAN: Identifying Industry Workshop Priorities and Future Direction*, Report Submitted to the ONE OCEAN Advisory Board (2003), available: <<http://www.oneocean.ca/pdf/ONE%20OCEAN%20REPORT.pdf>> (retrieved 10 November 2008).

⁶⁹ Intergovernmental Oceanographic Commission (IOC), "A Handbook for Measuring the Progress and Outcomes of Integrated Coastal and Ocean Management," ICAM Dossier 2, IOC Manuals and Guides No. 46 (Paris: UNESCO, 2006).

⁷⁰ *Canadian Environmental Protection Act*, S.C. 1999, c. 33, [hereinafter CEPA].

⁷¹ *Canadian Environmental Assessment Act*, S.C. 1992, c. 37, as amended by *An Act to amend the Canadian Environmental Assessment Act*, S.C. 2003, c. 9.

Through an interdepartmental consultation process, Canada has developed guiding principles to be followed by departments/agencies in applying precaution. The Framework for the Application of Precaution in Science-based Decision Making about Risk,⁷² issued in 2003, is broad and applicable to all federal mandates. It is, however, only one element which guides implementation of the precautionary approach. In oceans management, the primary guidance for the precautionary approach remains Canada's Oceans Strategy and in more detail,⁷³ the Policy and Operational Framework for Integrated Management.⁷⁴ The latter specifies that priority will be given to maintaining ecosystem health and integrity, especially in the case of uncertainty. DFO's Aquaculture Policy Framework also notes the need for aquaculture development to occur in the context of a precautionary approach.⁷⁵ Other DFO policies such as, the Wild Salmon Policy,⁷⁶ New Emerging Fisheries Policy,⁷⁷ and the development of an ecosystem-based model for recovery strategy development for endangered and threatened species, all require reference to ecosystem considerations and uncertainty.⁷⁸

Much work remains for all levels of government in working out the application of precaution, with laws varying between strong and weak versions. Canada has adopted a strong precautionary approach to ocean dumping through a "reverse listing" approach, where only wastes on an acceptable list may be disposed of at sea.⁷⁹ *Ballast Water Control and Management Regulations*,⁸⁰ issued to reduce the risk of harmful aquatic species being introduced into

⁷² Government of Canada, Privy Council Office, *Framework for the Application of Precaution in Science-based Decision Making about Risk* (Ottawa: Privy Council Office, 2003), available: <http://www.pco-bcp.gc.ca/docs/InformationResources/publications/precaution/precaution_e.pdf> (retrieved 10 November 2008).

⁷³ Fisheries and Oceans Canada, n. 2 above, p. 11.

⁷⁴ Fisheries and Oceans Canada, n. 31 above, p. 9.

⁷⁵ Fisheries and Oceans Canada, *DFO's Aquaculture Policy Framework* (Ottawa: Fisheries and Oceans Canada, 2002), Principle 2.

⁷⁶ Fisheries and Oceans Canada, *Canada's Policy for Conservation of Wild Pacific Salmon* (Vancouver: Fisheries and Oceans Canada, 2005), available: <<http://www.pac.dfo-mpo.gc.ca/publications/pdfs/wsp-eng.pdf>> (retrieved 22 April 2009), pp. 12–13, 22–23.

⁷⁷ Fisheries and Oceans Canada, *New Emerging Fisheries Policy* (2001), available: <<http://www.dfo-mpo.gc.ca/fm-gp/policies-politiques/efp-pnp-eng-updated-eng.htm#5>> (retrieved 10 November 2008).

⁷⁸ V. Sheppard, R. Rangeley, and J. Laughren, "An Assessment of Multi-species Recovery Strategies and Ecosystem-Based Approaches for Management of Marine Species at Risk in Canada," WWF-Canada Report for Fisheries and Oceans Canada (Ottawa: Fisheries and Oceans Canada, 2005).

⁷⁹ CEPA, n. 70 above, Schedule 5

⁸⁰ *Ballast Water Control and Management Regulations*, S.O.R./2006-129.

Canadian waters through ships' ballast water, are arguably another example of precautionary application. The regulations prescribe management measures for ballast water, requiring exchange at least 200 nautical miles from shore and in water depths greater than 2,000 metres before entering Canadian waters. Emergency ballast exchange within Canadian waters is also restricted to specific zones. These zones are identified based on lowest ecological risk. Although the *Fisheries Act* prohibits the deposit of deleterious substances into waters frequented by fish,⁸¹ discharge standards for six major industries, including pulp and paper mills and petroleum refineries, are set in regulations that do not explicitly emphasise pollution prevention and precaution. Canada is also party to various international bodies, working groups, regional fisheries management organisations, and international scientific organisations where the precautionary approach continues to evolve, and implementation tools are developed, for fisheries.⁸²

Tensions have arisen in Canada over how the precautionary principle/approach should be applied.⁸³ For example, concerns have been raised with respect to the potential risks associated with escapees and the possible spread of parasites from finfish aquaculture operations. There have been calls for the removal of existing open pen salmon farms and prohibition of new farms.⁸⁴ Instead of a prohibitory approach to precaution, governments have responded with various regulatory and licensing controls to mitigate the impact of fish farms, including mandatory monitoring programmes with specific intervention measures.⁸⁵

⁸¹ *Fisheries Act*, R.S.C. 1985, c. F-14, section 36.

⁸² See for example, Food and Agriculture Organization (FAO), *Precautionary Approach to Capture Fisheries and Species Introductions*, FAO Technical Guidelines for Responsible Fisheries No. 2 (Rome: FAO, 1996)

⁸³ For a discussion of the spectrum of precautionary measures and ongoing tensions, see: D. L. VanderZwaag, "The Precautionary Principle in Environmental Law and Policy: Elusive Rhetoric and First Embraces," *Journal of Environmental Law and Practice* 8, no. 3 (1998): 362–363; and D. L. VanderZwaag, S. D. Fuller, and R. A. Myers, "Canada and the Precautionary Principle/Approach in Ocean and Coastal Management: Wading and Wandering in Tricky Currents," *Ottawa Law Review* 34, no. 1 (2002–2003): 119–123.

⁸⁴ S. Leggatt, *Clear Choices, Clean Waters: The Leggatt Inquiry into Salmon Farming in British Columbia, Report and Recommendations* (Vancouver: David Suzuki Foundation, 2001), available: <http://www.davidsuzuki.org/files/Leggatt_reportfinal.pdf> (retrieved 10 November 2008).

⁸⁵ For sea lice, required actions may include chemical treatment or harvesting. See British Columbia Ministry of Agriculture and Lands, "Sea Lice Management 2005" (2005), available: <http://www.agf.gov.bc.ca/ahc/fish_health/Sealice/sealice_strategy_05.pdf> (retrieved 10 November 2008).

The Supreme Court of Canada has opened the legal door for Canadian courts to review administrative decisions in light of adherence to the precautionary principle. In the 2001 *Spraytech* case,⁸⁶ Justice L'Heureux-Dubé referred to the precautionary principle's wide acceptance in international law and policy and relied on the principle to help justify a broad interpretation of provincial legislation as authorising municipalities to regulate pesticides. She recognised that the values and principles reflected in international law may help inform the contextual approach to statutory interpretation and judicial review.⁸⁷

4.3.2.4. Public Participation and Community-based Management

Canadian ocean management policy clearly indicates a commitment to citizen engagement. The overall objective is to create governance mechanisms that foster a greater involvement of the people most affected by decisions. LOMAs primarily address large-scale ecosystem and economic development issues; they also provide the context for nesting a network of smaller CMAs or other ocean management tools, such as marine protected areas.

Participants in ocean and coastal management are clearly identified, including the federal government, provincial/territorial/local authorities, aboriginal organisations and communities, industry, NGOs, community groups, and the academic/science/research community. In keeping with the enabling (rather than directive) and collaborative nature of the *Oceans Act*, oceans management programmes in Canada clearly direct and enable community involvement in the design and management of integrated management plans and marine protected areas.⁸⁸

CMAs enable communities to play a stronger role in issues affecting their future by matching local capabilities and development priorities to the opportunities and carrying capacity of the local ecosystem. Local economic issues, such as inshore fisheries, conventional tourism and ecotourism, aquaculture sites, ports, and other transportation facilities may all be matters considered. Local community groups and individuals play essential roles in

⁸⁶ *114957 Canada Ltée (Spraytech, Société d'arrosage) v. Hudson (Town)*, [2001] 2 S.C.R. 241.

⁸⁷ For a further review of the decision, see K. Chapman (2002) "114957 *Canada Ltée (Spraytech, Société d'arrosage) v. Hudson (Ville)*: Application of the Precautionary Principle in Domestic Law," *Canadian Journal of Administrative Law & Practice* 15, no. 1 (2002): 123–136.

⁸⁸ Fisheries and Oceans Canada, "National Engagement Summary on Canada's Oceans Strategy" (2003) (unpublished).

helping to understand the management area and issues, ensuring that the planning process and associated actions are relevant to the area, and providing “on the ground” expertise and capacity for plan implementation, monitoring, and compliance promotion.

4.3.3. Authority at National Level

In addition to leading and facilitating the development and implementation of an oceans management strategy, the Minister of Fisheries and Oceans is authorised to

- coordinate the activities of ocean stakeholders to develop a strategy,
- develop tools and coordinate with stakeholders the development of specific plans to implement the strategy,
- develop integrated management plans for all Canadian marine waters,
- establish, as required, sub-national and local bodies to assist with the implementation plans,
- establish and enforce measures/regulations associated with marine protected areas, and
- develop marine environmental quality guidelines.

In the October 2004 Speech from the Throne, the Government of Canada made better management of its ocean spaces and resources a government-wide priority and called for the development of “an Oceans Action Plan by maximising the use and development of oceans technology, establishing a network of Marine Protected Areas, implementing integrated management plans and enhancing the enforcement of rules governing oceans and fisheries, including rules governing straddling fish stocks.”⁸⁹ The government also made a significant investment in strengthening initiatives related to international fisheries and oceans governance. These efforts are focused on improving compliance within the Northwest Atlantic Fisheries Organization (NAFO), creating conditions for change, and strengthening global fisheries and oceans governance.

With the endorsement of the government-wide Oceans Action Plan, seven federal departments are now responsible for the delivery of specific elements of this national work plan. Their tasks range from international coordination,

⁸⁹ Government of Canada, n. 21 above.

completion of ecosystem overview reports, and developing governance arrangements, to seabed mapping. Table 4.2 identifies key activities in Phase 1 of the Oceans Action Plan.

Table 4.2. Key activities of Phase 1 of the Oceans Action Plan

Oceans Action Plan Phase 1 Initiative	Key Activities
International Leadership, Sovereignty and Security	
1. Gulf of Maine Canada-United States collaboration	Joint ecosystem overview and objectives setting for integrated management planning
2. Arctic Marine Strategic Plan	Eight countries address key issues in the circumpolar Arctic via the Working Group for the Protection of the Arctic Marine Environment (PAME) of the Arctic Council
3. International fisheries and oceans governance	Ecosystemic research with a focus on the Grand Banks Appointment of an ambassador for fisheries conservation Strengthening global governance
Integrated Management in Large Ocean Management Areas (LOMAs)	
4. Ecosystem overview and assessment reports	Review and assessment of scientific knowledge in five LOMAs
5. Ecologically and biologically significant areas (EBSA)	Identification of areas and species requiring special management measures in LOMAs
6. Seabed mapping	Characterisation of habitat in LOMAs
7. Ecosystem objectives (EO)/ Smart regulations	Ecosystem specific EOs and possible regulatory options
8. Economic assessment and analysis	Documentation of value of activities in support of integrated management planning
9. Targeted sub-national consultations	Engagement of affected and responsible parties in LOMAs, marine protected areas
10. Agreements with provinces, territories, and aboriginal authorities	Development of agreements on roles and responsibilities.
11. Sub-national management and advisory bodies	Intergovernmental and stakeholder for LOMA planning and management
Health of the Oceans	
12. <i>Oceans Act</i> marine protected areas (MPAs)	Key MPAs designated by 2007

13. Canadian Wildlife Service marine wildlife areas	Key marine wildlife areas designated
14. National Marine Protected Area Strategy to establish a network	Implementation of federal MPA strategy to establish a network
15. Science research and advice for marine protected areas	Development of tools including selection criteria for EBSAs
16. Ballast water and marine pollution regulations	Science support and completion of the regulatory process
17. Pollution prevention surveillance for sea-based sources	Increased surveillance
Oceans Science and Technology	
18. Oceans technology network	Support of technology networks and research priorities
19. Placentia Bay Technology Demonstration Project	Integration of real time data to support oceans management decisions

An Oceans Action Plan Secretariat coordinates integration of the inter-departmental efforts to deliver the Oceans Action Plan. In addition to housing the secretariat, DFO is responsible for the implementation of ocean programmes key to plan implementation (integrated management, marine protected areas, and marine environmental quality).

4.3.4. National and Sub-National Division of Authority

While there is a clear federal responsibility for the protection of the marine environment and the sustainable use of marine resources, effective environmental protection and conservation require broad-based partnerships. Provincial, territorial, and local governments have roles and responsibilities with regards to oceans activities. Provinces and territories have primary responsibility for their lands, the shoreline and specific seabed areas, and municipalities have responsibility for many of the land-based activities affecting the marine environment, such as sewage and waste disposal. Aboriginal authorities also have a key governance role to play where settled land claims include marine resource management responsibilities

There is a strong provincial/territorial desire and a practical need for sub-national engagement. To this end, the federal, provincial, and territorial governments collaborate under the auspices of the Canadian Council of Fisheries and Aquaculture Ministers (CCFAM) through the Oceans Task Group

and through existing and developing regional governance mechanisms to develop joint work plans and approaches.⁹⁰ One of the goals is the development of agreements or memoranda of understanding similar to the Canada-British Columbia memorandum of understanding (MOU) on oceans to support integrated planning and ensure complementary and harmonised regulation. This initiative also involves collaboration with Aboriginal peoples and governments in priority areas and, where possible, establishes agreements to strengthen oceans management and address oceans priorities.

The efforts of the Oceans Task Group are supplemented by regional federal and provincial implementation committees focused on the Oceans Action Plan. An Aquaculture Task Group under the CCFAM, composed of both federal and provincial representatives, has facilitated discussions on clarifying and coordinating federal-provincial responsibilities in relation to aquaculture.⁹¹

Management and advisory bodies are currently in place, or being established, to support specific integrated management plans and marine protected area management plans. They involve a forum for stakeholders, including industry, academia, NGOs, Aboriginal peoples, and citizens. Their goals are to provide on-going communication, information-sharing, input, and to effectively inform oceans management planning processes. For example, the ESSIM Stakeholder Advisory Council is a representative multi-stakeholder working group that provides “regular input, advice and support” to the initiative’s planning process.⁹²

Various other federal-provincial coordination mechanisms also exist. For example, councils of federal-provincial/territorial ministers address environment, wildlife, and energy issues. Joint federal-provincial offshore petroleum boards have been established for Nova Scotia and Newfoundland and Labrador through accords and mirror federal-provincial legislation.⁹³ The boards are responsible for reviewing environmental impacts of proposed offshore hydrocarbon activities and for imposing operational conditions.⁹⁴

⁹⁰ Canadian Council of Fisheries and Aquaculture Ministers, n. 44 above.

⁹¹ See “Canadian Council of Fisheries and Aquaculture Ministers,” available: <http://www.aquaculture.ca/English/CAIA_CCFAM.html> (retrieved 22 April 2009).

⁹² ESSIM Planning Office, n. 65 above, p. 1

⁹³ V. Penick, “Legal Framework in the Canadian Offshore,” *Dalhousie Law Journal* 24, no. 1 (2001): 1–22; A. Taylor, and J. Dickey, “Regulatory Regime: Canada-Newfoundland/Nova Scotia Offshore Petroleum Board Issues,” *Dalhousie Law Journal* 24, no. 1 (2001): 51–86.

⁹⁴ More information on the Canada-Nova Scotia Offshore Petroleum Board is available from <<http://www.nsopb.ns.ca>> and for the Canada-Newfoundland and Labrador Offshore Petroleum Board from <<http://www.cnlopb.nl.ca>> (both retrieved 10 November 2008).

4.3.5. Domestic Implementation of International Agreements

The effectiveness of Canada's management efforts in the Arctic, Pacific and Atlantic oceans requires close collaboration and cooperation with adjacent nations and with other states. Canada has worked with the United States and Mexico through the Commission for Environmental Cooperation (CEC) since 1994⁹⁵ and, more recently, through the Security and Prosperity Partnership of North America⁹⁶ to address issues of common concern. Canada and the United States are also coordinating efforts under their respective oceans action plans. Canada also participates in the Arctic Council,⁹⁷ which provides a mechanism for eight circumpolar nations to collaborate with respect to addressing Arctic marine environmental issues.

While a broad array of international environmental agreements have relevance to the oceans, this chapter briefly discusses Canada's implementation efforts and challenges under five key documents: the LOS Convention, the Convention on Biological Diversity, MARPOL 73/78, the 1996 Protocol to the London Convention, and the Global Programme of Action for the Protection of the Marine Environment from Land-based Activities.

4.3.5.1. UN Convention on the Law of the Sea

Although Canada was a leading country in negotiations for the LOS Convention and signed the convention in 1982,⁹⁸ it did not ratify the LOS Convention until 7 November 2003 with the convention entering into force for Canada on 7 December 2003.⁹⁹ Delays in ratification were, in part, due to deep concerns relating to high seas and straddling stock fisheries issues. Canada had

⁹⁵ Commission for Environmental Cooperation (CEC), *Strategic Plan for North American Cooperation in the Conservation of Biodiversity* (Montreal: CEC, 2003), available: <<http://www.cec.org/files/pdf/BIODIVERSITY/Biodiversitystrategy.pdf>> (retrieved 10 November 2008).

⁹⁶ Information on the Security and Prosperity Partnership of North America, launched at Waco, Texas, in 2005 is available from <<http://www.spp-pp.gc.ca/menu-en.aspx>> (retrieved 10 November 2008).

⁹⁷ Information on the activities of the Arctic Council is available from <http://www.arctic-council.org>. See also, Chapter 6 in this volume.

⁹⁸ T. L. McDorman, "Will Canada Ratify the Law of the Sea Convention?" *San Diego Law Review* 25, no. 3 (1988): 535–579, pp. 536–538.

⁹⁹ T. L. McDorman, "Editorial – Canada Ratifies the 1982 United Nations Convention on the Law of the Sea," *Ocean Development & International Law* 35, no. 2 (2004): 103–114.

already, through the *Oceans Act*,¹⁰⁰ incorporated into domestic law its maritime zones and the jurisdictional entitlements set out in the LOS Convention, namely a 12 nautical mile territorial sea, a contiguous zone out to 24 nautical miles from the territorial sea baselines, a 200 nautical mile exclusive economic zone (EEZ), and a continental margin extending beyond the EEZ in accordance with Article 76 of the LOS Convention.¹⁰¹

Recent federal funding has enabled Canada to initiate the process to delimit the outer extent of its continental shelf. Canada plans on making a submission to the UN Commission for the Limits of the Continental Shelf by 2013. A number of challenges related to LOS Convention implementation face Canada, including issues related to revenue sharing responsibilities of federal and provincial authorities for oil and gas production beyond 200 nautical miles,¹⁰² and the scope of Canada's powers to regulate shipping as new areas become accessible in the Arctic due to climactic variations.¹⁰³

By ratifying the 1995 UN Agreement on Straddling and Highly Migratory Fish Stocks in August 1999,¹⁰⁴ Canada has made international fisheries reform and modernisation a major priority.¹⁰⁵ In May 2005, Canada hosted a major international conference on high seas fisheries governance,¹⁰⁶ and Canada continues to push for more effective addressing of illegal, unreported and

¹⁰⁰ *Oceans Act*, n. 1 above, Part 1.

¹⁰¹ LOS Convention, n. 5 above.

¹⁰² A. Chircop, "Energy Policy and International Royalty: A Dormant Servitude Relevant for Offshore Development," in M. H. Nordquist, J. N. Moore, and A. S. Skaridov, eds., *International Energy Policy, the Arctic and the Law of the Sea* (London/Boston: Martinus Nijhoff, 2005), pp. 247–270.

¹⁰³ The effects of climate change could open up Canadian Arctic waters to commercial traffic by as early as 2015. See Foreign Affairs and International Trade Canada, *Canada's International Policy Statement: A Role of Pride and Influence in the World – Diplomacy* (Ottawa: DFAIT, 2005), available: <http://geo.international.gc.ca/cip-pic/current_discussions/ips-archive-en.aspx> (retrieved 10 November 2008), p. 7.

¹⁰⁴ *Agreement for the Implementation of the Provisions of the United Nations Convention on the Law of the Sea of 10 December 1982 Relating to the Conservation and Management of Straddling Fish Stocks and Highly Migratory Fish Stocks*, 4 August 1995, 2167 U.N.T.S. 88, reprinted in *I.L.M.* 34, no. 6: 1547–1580; *Regulations Amending the Coastal Fisheries Protection Regulations*, SOR/2004-110, Regulatory Impact Analysis Statement, *Canada Gazette II*, Extra Vol. 138, No. 6 (2004).

¹⁰⁵ Foreign Affairs and International Trade Canada, n. 103 above.

¹⁰⁶ Government of Canada, *Conference on the Governance of High Seas Fisheries and the UN Fish Agreement – Moving from Words to Action, St. John's, Newfoundland and Labrador, May 1 to 5, 2005: Conference Report* (1 June 2005), available: <http://www.dfo-mpo.gc.ca/fgc-cgp/conf_report_e.pdf> (retrieved 10 November 2008).

unregulated (IUU) fishing.¹⁰⁷ Various high seas biodiversity and fishing issues remain to be worked out, not only in Canadian ocean policy, but globally. For example, how might discrete high seas fish stocks be better managed¹⁰⁸ and how should access to genetic biodiversity beyond national jurisdiction be addressed?¹⁰⁹

4.3.5.2. Convention on Biological Diversity

The Convention on Biological Diversity (CBD), as an international treaty, identifies a common problem, sets overall goals, policies and general obligations, and organises technical and financial cooperation.¹¹⁰ The responsibility for achieving its goals rests with countries themselves. Under the convention, governments undertake to conserve and sustainably use biodiversity. Parties are required to develop national biodiversity strategies and action plans and to integrate these into broader national plans for environment and development. Following the adoption of a Canadian Biodiversity Strategy in 1995,¹¹¹ Canada's progress has varied in implementing the key commitments under Article 8 of the CBD. Implementation of the Oceans Action Plan addresses several key components of the national biodiversity strategy, including a focus on the establishment of a network of marine protected areas, regulating the risk associated with the use and release of living modified organisms, preventing and controlling the introduction of alien species, and developing necessary legislation or other regulatory provisions to protect threatened species and populations.

¹⁰⁷ Government of Canada, *Canada's National Plan of Action to Prevent, Deter and Eliminate Illegal, Unreported and Unregulated Fishing* (Ottawa: Communications Branch, Fisheries and Oceans Canada, 2005), available: <http://www.dfo-mpo.gc.ca/misc/npoa-iuu/npoa-iuu_e.pdf> (retrieved 10 November 2008).

¹⁰⁸ See generally, K. M. Gjerde and D. Freestone, eds., "Unfinished Business: Deep-Sea Fisheries and the Conservation of Marine Biodiversity Beyond National Jurisdiction," Special Issue, *International Journal of Marine and Coastal Law* 19, no. 3 (2004): 209–222.

¹⁰⁹ Major disagreements have arisen among countries as to whether the high seas freedom principle or the principle of common heritage of humankind should apply. See United Nations, *Report on the Work of the United Nations Open-ended Informal Consultative Process on Oceans and the Law of the Sea at its Fifth Meeting*, UN Doc. A/59/122 (New York: General Assembly, United Nations, 2004), available: <<http://daccessdds.un.org/doc/UNDOC/GEN/N04/412/21/PDF/N0441221.pdf?OpenElement>> (retrieved 10 November 2008), pp. 23–24.

¹¹⁰ *Convention on Biological Diversity*, 5 June 1992, 1760 *U.N.T.S.* 79, reprinted in *I.L.M.* 31, no. 4: 822–841.

¹¹¹ Government of Canada, *Canadian Biodiversity Strategy: Canada's Response to the Convention on Biological Diversity* (Ottawa: Canadian Museum of Nature, 1995).

Marine protected areas are established under the authority of the three federal agencies, DFO, Parks Canada and Environment Canada. Under the authority of the *Oceans Act*,¹¹² seven offshore marine protected areas have been established: the Endeavour Hydrothermal Vents (2003) and the Bowie Seamount (2008) off British Columbia; the Gully (2004) off Nova Scotia; Basin Head (2005) off Prince Edward Island; Gilbert Bay (2005) off Labrador; Eastport (2005) off Newfoundland; and the Musquash Estuary Marine Protected Area (2006) off New Brunswick.¹¹³ Three additional *Oceans Act* marine protected areas are at various stages in the designation process (one of which may be officially designated before Parliament recesses for the summer in 2009) and a further six areas of interest identified via conservation setting priorities and consultations but not yet endorsed by the Minister and for which formal regulatory work has not been undertaken but will need to be completed before the end of fiscal year 2012 under the Health of the Oceans initiative. These *Oceans Act* marine protected areas (Figure 4.3) complement the contributions of the other federal marine protected area authorities to building a domestic network. The national biodiversity strategy also links Canada's marine protected areas network on a continental basis, through a proposed regional marine protected area action plan with the United States and Mexico,¹¹⁴ and on a global level, particularly through the World Summit on Sustainable Development commitment to establish a representative network by 2012.¹¹⁵

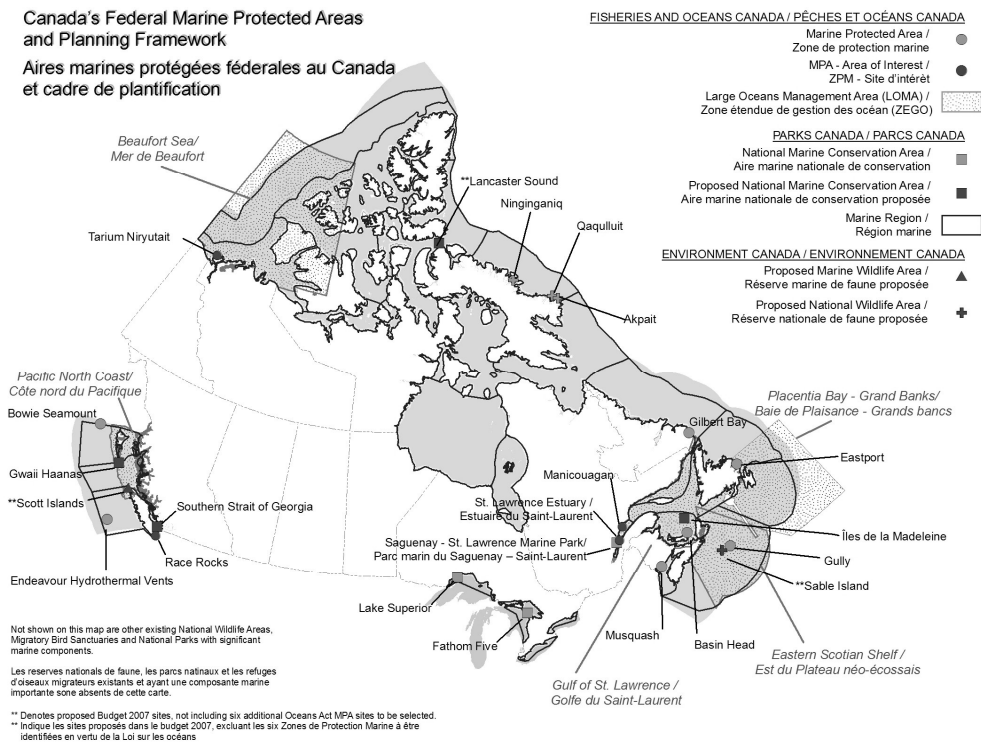
¹¹² *Oceans Act*, n. 1 above, s. 35.

¹¹³ *Endeavour Hydrothermal Vents Marine Protected Area Regulations*, SOR/2003-87; *Gully Marine Protected Area Regulations*, SOR/2004-112; *Basin Head Marine Protected Area Regulations*, SOR/2005-293; *Eastport Marine Protected Area Regulations*, SOR/2005-294; *Gilbert Bay Marine Protected Area Regulations*, SOR/2005-295; *Musquash Estuary Marine Protected Area Regulations*, SOR/2006-354; and *Bowie Seamount Marine Protected Area Regulations*, SOR/2008-124.

¹¹⁴ Fisheries and Oceans Canada, n. 3 above, pp. 6, 11.

¹¹⁵ United Nations, *Report of the World Summit on Sustainable Development, Johannesburg, South Africa, 26 August – 4 September 2002* (New York: United Nations, 2002), available: <<http://www.world-tourism.org/sustainable/wssd/final-report.pdf>> (retrieved 10 November 2008), p. 26.

Figure 4.3. *Oceans Act* marine protected areas and areas of interest



Source: Oceans Directorate, Department of Fisheries and Oceans Canada, Ottawa, April 2009.

With respect to the introduction of new alien aquatic species via ballast water in ships, Canada initially relied upon voluntary measures set out in the Guidelines for the Control of Ballast Water Discharge from Ships in Waters under Canadian Jurisdiction.¹¹⁶ However, in light of the 2004 International Convention for the Control and Management of Ships' Ballast Water and Sediments,¹¹⁷ Canada issued binding *Ballast Water Control and Management Regulations* which came into force 8 June 2006.¹¹⁸

¹¹⁶ Transport Canada, *Guidelines for the Control of Ballast Water Discharge from Ships in Waters under Canadian Jurisdiction*, Transport Canada Publication No. 13617 (Ottawa: Canadian Marine Advisory Council, Transport Canada, 2001), available: <<http://www.tc.gc.ca/MarineSafety/TP/Tp13617/Tp13617Erev1.pdf>> (retrieved 10 November 2008).

¹¹⁷ *International Convention for the Control and Management of Ships' Ballast Water and Sediments*, IMO Document BWM/CONF/36 (2004).

¹¹⁸ *Ballast Water Control and Management Regulations*, n. 80 above.

In December 2002, Canada enacted the *Species at Risk Act* (SARA).¹¹⁹ The Act is part of a three-pronged Government of Canada strategy for the protection of wildlife species at risk, which also includes commitments under the 1996 national Accord for the Protection of Species at Risk and activities under the Habitat Stewardship Programme for Species at Risk. SARA implements key elements of the Canadian Biodiversity Strategy. The Act requires recovery strategies and action plans to be prepared for listed endangered and threatened species and management plans for species of special concern. SARA formally recognises the role of the independent advisory Committee on the Status of Endangered Wildlife in Canada (COSEWIC) in assessing species at risk. SARA applies to all federal lands in Canada, all wildlife species listed as being at risk, and their critical habitat. The Act also puts in place various prohibitions, such as prohibiting persons from killing, harming, harassing, or taking an individual of a listed endangered or threatened species and from damaging or destroying the residence of one or more individuals of a listed endangered/threatened species. The need to better define with scientific rigour key provisions of the act relating to critical marine habitat and residences, as well as the shared accountability between federal ministers, and between federal and provincial ministers, make it difficult to fully assess the effectiveness of the statute and to make recommendations for its improvement.¹²⁰

However, listing of some marine fish species has been a challenge since listing under SARA involves a political decision rather than scientific determination. For example, COSEWIC has listed as endangered Cultus Lake and Sakinaw Lake sockeye salmon populations, Interior Fraser River coho salmon, the Newfoundland and Labrador population of Atlantic cod and the porbeagle shark and has categorised as threatened, the Laurentian North population of Atlantic cod.¹²¹ Because of potential social and economic impacts of SARA listing for these populations, the Canadian government has chosen against listing.¹²² Other tools, such as government programmes and initiatives by NGOs and industry, are expected to protect and assist recovery of these non-listed species.

¹¹⁹ *Species at Risk Act*, S.C. 2002, c. 29 [hereinafter SARA].

¹²⁰ For an early critique, see D. L. VanderZwaag and J. A. Hutchings, "Canada's Marine Species at Risk: Science and Law at the Helm; but a Sea of Uncertainties," *Ocean Development and International Law* 36, no. 3 (2005): 219–259.

¹²¹ Committee on the Status of Endangered Wildlife in Canada (COSEWIC), *Canadian Species at Risk* (Ottawa: COSEWIC, 2007).

¹²² See SI/2005-2 (decision not to list Cultus and Sakinaw salmon); SI/2006-61 (decision not to list Newfoundland and Labrador population Atlantic cod and Interior Fraser population of coho salmon); and SI/2006-110 (decision not to list the porbeagle shark).

The CBD's Programme of Work on Marine and Coastal Biological Diversity includes consideration of protected areas beyond national jurisdiction.¹²³ High seas issues, particularly as they relate to ecosystem health, are of interest to Canada. Canada is working with existing governance bodies and their scientific advisors to integrate scientific knowledge and expertise to provide best available scientific advice to inform decisions. For example, in December 2005, Canada hosted an international scientific experts' workshop to review and assess ecologically-based criteria for the identification of areas and/or resources that are ecologically and biologically significant and may require special management measures, including protected area status in high seas.¹²⁴ The intent of the workshop was to provide integrated advice to authorities such as the CBD, the United Nations Food and Agriculture Organization (FAO), and the International Maritime Organization (IMO) for their consideration.

4.3.5.3. MARPOL 73/78

Canada has only formally accepted the first three annexes of MARPOL¹²⁵ dealing with oil pollution, noxious liquid substances carried in bulk and harmful substances carried in packaged form respectively. However, Canada has adopted *Regulations for the Prevention of Pollution from Ships and for Dangerous Chemicals*¹²⁶ which will allow accession by Canada to the other three annexes covering sewage (Annex (IV)), garbage (Annex V) and air pollution (Annex VI). The regulations issued under the *Canada Shipping Act 2001*, also bring Canada into line with the revisions to Annexes I and II of MARPOL which came into force 1 January 2007. Prevention of pollution from

¹²³ Conference of the Parties (COP) CBD, "Decision VII/5 on Marine and Coastal biological diversity: Review of the Programme of Work on Marine and Coastal Biodiversity," Seventh Conference of the Parties to the Convention on Biological Diversity (CBD COP-7), 9–20 February 2004, Kuala Lumpur, Malaysia (2004).

¹²⁴ World Conservation Union (IUCN), "Update on MPAs beyond National Jurisdiction, February 2004 – February 2006", (Gland: IUCN, February 2006).

¹²⁵ *International Convention for the Prevention of Pollution from Ships*, London, 2 November 1973, 1340 U.N.T.S. 184, as amended by *Protocol of 1978 relating to the International Convention for the Prevention of Pollution from Ships of 1973*, 17 February 1978, 1340 U.N.T.S. 61 [hereinafter MARPOL].

¹²⁶ *Regulations for the Prevention of Pollution from Ships and for Dangerous Chemicals*, SOR/2007-86.

harmful substances in packaged form continues to be addressed by the *Dangerous Goods Shipping Regulations*.¹²⁷

Canada has chosen to apply stricter vessel-source pollution control standards for its Arctic waters. Pursuant to the *Arctic Waters Pollution Prevention Act*,¹²⁸ passed in 1970, Canada has imposed special pollution discharge and other restrictions for vessels operating in a 100 nautical mile pollution prevention zone. For example, oil deposits from ships are generally prohibited with just a few exceptions, such as when due to stranding or collision and when due to engine exhaust.¹²⁹ Canada is proposing to extend the special shipping standards out to 200 nautical miles in the Arctic in light of Article 234 of the LOS Convention.¹³⁰ Article 234 grants coastal states special legislative and enforcement jurisdiction over vessels navigating in ice-covered waters.¹³¹

4.3.5.4. 1996 Protocol to the 1972 London Convention

Becoming the tenth country to accede to the 1996 Protocol,¹³² which takes a precautionary approach to ocean disposal, Canada ensured its implementation through the provisions of the *Canadian Environmental Protection Act, 1999*.¹³³ The Act adopts a “safe list” approach by only allowing ocean disposal of a limited list of wastes listed in Schedule 5 and any disposal must be in accordance with the conditions of a Canadian permit. Before issuing an ocean disposal permit, the Minister of Environment is required to subject the application to a waste assessment process, set out in Schedule 6 of the Act, which, among other things, requires refusal of a permit if re-use, recycling, or treatments of the waste are practical options.

¹²⁷ *Dangerous Goods Shipping Regulations*, S.O.R./81-951, as amended.

¹²⁸ *Arctic Waters Pollution Prevention Act*, R.S.C. 1985, c. A-12.

¹²⁹ *Arctic Shipping Pollution Prevention Regulations*, C.R.C., c. 353.

¹³⁰ Bill C-3, An Act to amend the Arctic Waters Pollution Prevention Act, is presently before the Canadian Parliament. For information see: <<http://www2.parl.gc.ca/Sites/LOP/LEGISINFO/index.asp?List=ls&Query=5652&Session=22&Language=e>> (retrieved 22 April 2009).

¹³¹ D. M. McRae and D. J. Goundrey, “Environmental Jurisdiction in Arctic Waters: The Extent of Article 234,” *University of British Columbia Law Review* 16, no. 2 (1982): 197–228.

¹³² *Protocol to the Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter*, London, 7 November 1996, (1997) *I.L.M.* 36: 1; *Disposal at Sea Regulations*, SOR/2001-275; Regulatory Impact Analysis Statement, *Canada Gazette II* Vol. 135, No. 17 (2001).

¹³³ CEPA, n. 70 above, Division 3.

4.3.5.5. Global Programme of Action for the Protection of the Marine Environment from Land-based Activities

Canada became the first country to develop a National Programme of Action for the Protection of the Marine Environment from Land-based Activities (NPA) in 2000.¹³⁴ The NPA sets national priorities for addressing land-based marine pollution and activities through a high, medium, and low ranking approach. Listed as high contaminant priorities are sewage and persistent organic pollutants. Responding to shoreline construction/alteration and wetland and salt marsh alteration are also listed as high priorities. Through separate chapters for four main coastal regions (the Pacific, Arctic, Southern Quebec/St. Lawrence, and the Atlantic), the NPA also describes regional problems, priorities, and needed actions. A federal/provincial/territorial committee, established in 1996 soon after the Global Programme of Action for the Protection of the Marine Environment from Land-based Activities (GPA) Washington Conference and co-chaired by Environment Canada and DFO, has been responsible for the development and implementation of the NPA.

Tracking implementation activities is difficult because of the numerous sources of land-based marine pollution, the multiple jurisdictions and programmes involved along Canada's extensive coastlines,¹³⁵ and the lack of a dedicated funding for GPA implementation. Canada's report to the 2001 Intergovernmental Review Meeting on Implementation of the Global Programme of Action for the Protection of the Marine Environment from Land-based Activities included an annex highlighting more than 90 key programmes, within government, NGOs, and communities that address the goals and priorities of the GPA.¹³⁶ For example, the collaborative development, by federal, provincial and local authorities, of integrated management processes and plans at the coastal management area (CMA) scale is contributing directly

¹³⁴ Federal/Provincial/Territorial Advisory Committee on Canada's National Programme of Action for the Protection of the Marine Environment from Land-based Activities, *Canada's National Programme of Action for the Protection of the Marine Environment from Land-based Activities (NPA)* (Ottawa: Government of Canada, 2000).

¹³⁵ For a summary of the various programmes in the four Atlantic provinces, see P. G. Wells, "Invigorating the United Nations Global Programme of Action (GPA) for the Protection of the Marine Environment from Land-based Activities – utilising both bottom-up and top-down approaches," *Marine Pollution Bulletin* 44, no. 8 (2002): 719–721.

¹³⁶ Federal/Provincial/Territorial Advisory Committee on Canada's National Programme of Action for the Protection of the Marine Environment from Land-based Activities, *Implementing Canada's National Programme of Action for the Protection of the Marine Environment from Land-based Activities: National Report to the 2001 Intergovernmental Review Meeting on Implementation of the Global Programme of Action* (Ottawa: Environment Canada, 2001).

to the implementation of the NPA. In a national report on GPA implementation prepared for the Second Intergovernmental Review Meeting in Beijing, China in October 2006, Canada described various other projects contributing to GPA implementation including a technology investigation for enhancing municipal wastewater treatment in Arctic climates and an inventory of land-based sources of pollution in the Hudson Bay watershed.¹³⁷

Canada also contributes to the GPA by advancing GPA activities at the regional level. The Regional Programme of Action for the Protection of the Arctic Marine Environment from Land-based Activities (RPA), adopted by Arctic Council ministers in 1998, established two high priorities for regional action: addressing persistent organic pollutants and heavy metals, and identified pollution hot spots in the Russian Federation.¹³⁸ The Arctic Council's Protection of the Arctic Marine Environment (PAME) Working Group has updated the RPA, under the lead of Canada and Iceland, with revisions going before the Arctic Council ministers for approval in April 2009.¹³⁹

Projects to assess effluent discharges from seafood processing plants have been undertaken on both the Atlantic and Pacific coasts.¹⁴⁰ The Global Programme of Action Coalition for the Gulf of Maine (GPAC), a network of hundreds of individuals from community organisations, government, industry, indigenous communities, and researchers, was forged through a pilot project of the North American Commission for Environmental Cooperation and has facilitated the convening of various bi-national workshops to further GPA implementation.¹⁴¹ GPAC helped to convene, in collaboration with the Gulf of Maine Council on the Marine Environment, a Gulf of Maine Summit where

¹³⁷ Environment Canada, *National Report on GPA Implementation* (2006), available: <http://www.gpa.unep.org/documents/national_report_Canada_english.pdf> (retrieved 10 November 2008).

¹³⁸ Arctic Council, *Regional Programme of Action for the Protection of the Arctic Marine Environment from Land-based Activities* (Ottawa: Public Works and Government Services Canada, 1999), available: <http://www.arctic-council.org/About/376_eng.pdf> (retrieved 10 November 2008)

¹³⁹ See PAME, "PAME Progress Report to Senior Arctic Officials, 19–20 November 2008, Kautokeino, Norway," available: <<http://arcticportal.org/uploads/BW/p8/BWp8LeLvRW6AKx9HfLECHQ/Dec-08.PAME-Report-to-SAOs-Nov-2008.pdf>> (retrieved 23 April 2009).

¹⁴⁰ Environment Canada, *Protecting Canada's Coastal and Marine Environment* (2004), available: <http://www.npa-pan.ca/youth/NPA_brochure.pdf> (retrieved 20 January 2007), p. 15.

¹⁴¹ For a further review of the pilot projects, see D. L. VanderZwaag, "Transboundary Challenges and Cooperation in the Gulf of Marine Region: Riding a Restless Sea Toward Misty Shores," in H. N. Scheiber, ed., *Law of the Sea: The Common Heritage and Emerging Challenges* (The Hague: Martinus Nijhoff, 2000), pp. 279–281.

participants discussed ecosystem indicators for three priority areas: contaminants and pathogens, fisheries and aquaculture, and land use.¹⁴²

4.3.6. Enforcement

While each federal statute pertaining to oceans has its own set of regulations, enforcement procedures, penalties and fines, Section 35 of the *Oceans Act* provides the Minister of Fisheries and Oceans with the authority to develop specific regulations pertaining to the designation of marine protected areas and the prescription of measures needed to achieve the conservation objectives of the marine protected area. Section 37 of the Act provides for penalties if prescribed measures are contravened, with persons liable to a fine not exceeding CAD100,000 on summary conviction or up to CAD500,000 for an indictable offence. The Act also provides the authority to make regulations prescribing marine environmental quality requirements and standards. In practice, this is intended to give effect to those ecosystem objectives that require the force of regulation.

With respect to enforcement and surveillance, the approach adopted by the Canadian government is to multi-task pollution prevention among fishery officers and other federal and provincial enforcement officers active in the geographic area where the oceans conservation or management measure is being applied. Notwithstanding the above, enforcement is only one of many measures on the compliance continuum. Consequently, substantial effort is dedicated in both the integrated management and marine protected area processes to engaging stakeholders and involving them in advisory and management bodies. Better understanding and “ownership” of the management plans and associated regulatory measures provides support and potentially reduces the more costly surveillance and enforcement efforts.

Regulations developed under the *Oceans Act* include those to designate seven current marine protected areas and to date no contraventions have been detected. Regulations focused on the mitigation of seismic sound in the marine environment are also under development. As part of this process, DFO held targeted public consultations in 2005 and 2006 and revised its draft Statement

¹⁴² P. King and C. MacKenzie, eds, *Gulf of Maine Summit: Committing to Change, Summit Report* (Boscawen, NH: Gulf of Maine Council on the Marine Environment and the Global Programme of Action Coalition for the Gulf of Maine, 2005), available: <http://www.gulfofmainesummit.org/Summit_%20Report/Summit_Report.pdf> (retrieved 10 November 2008).

of Canadian Practice Respecting the Mitigation of Seismic Sound in the Marine Environment.¹⁴³ The Statement of Canadian Practice has now been given effect under the authority of the Newfoundland and Labrador and Nova Scotia Petroleum Boards for oil and gas applications, and *Oceans Act* regulations are under development for non-oil and gas seismic surveys.

Canada has been a leader in developing legislative provisions supportive of effective enforcement and creative sentencing options for those convicted of environmental and fisheries offences. Most federal and provincial statutes provide for strict liability offences where the Crown does not have to show fault (intentional, reckless, or negligent behaviour) by the offender but only a guilty act, such as a deleterious deposit into waters frequented by fish. Many statutes allow judges to be innovative in issuing sentencing orders beyond the traditional sanctions of fines or imprisonment. For example, section 79.2 of the *Fisheries Act* allows courts to impose various requirements on offenders, including prohibiting activities that may continue or repeat the offence, directing remedial and avoidance measures, directing convicted persons to publish the facts relating to the offence, requiring persons to pay governmental costs of remedial or preventative actions, ordering persons to perform community service, directing persons to contribute funds for the purpose of promoting fish habitat conservation and fisheries management, and requiring persons to comply with any other conditions for securing the person's good conduct.

A recent legislative effort to bolster enforcement in the oceans sector is aimed at more effectively countering ship-source pollution, especially in contravention of MARPOL standards, which has had damaging consequences to migratory seabirds. The 2005 amendments to the *Migratory Birds Convention Act, 1994* and the *Canadian Environmental Protection Act, 1999* expand the scope of persons who may be held responsible for offences,¹⁴⁴ extends the jurisdiction of Canadian courts to cover infringements in the EEZ, and substantially increases penalties.¹⁴⁵

¹⁴³ Fisheries and Oceans Canada, "Performance Report for the Period ending March 31, 2006" (Ottawa: Treasury Board of Canada, 2006), available: <http://www.tbs-sct.gc.ca/dpr-rmr/0506/FO-PO/fo-po_e.pdf> (retrieved 10 November 2008).

¹⁴⁴ *Migratory Birds Convention Act*, S.C. 1994, c. 22, as amended by *An Act to amend the Migratory Birds Convention Act, 1994 and the Canadian Environmental Protection Act, 1999*, S.C. 2005, c. 23; CEPA, n. 70 above.

¹⁴⁵ Persons responsible for depositing a substance harmful to migratory birds not authorised under the *Canada Shipping Act* may include masters, chief engineers, owners and operators of a vessel, and directors/officers of a corporation which is the owner/operator of a vessel (*An Act to amend the Migratory Birds Convention Act, 1994 and the Canadian Environmental Protection Act, 1999*, S.C. 2005, c. 23, s. 5.4). Persons or vessels contravening provisions of the *Migratory*

4.3.7. Research and Education

Canada's Oceans Strategy emphasises the need to base decisions on sound science and to address uncertainties in our knowledge base so that management actions can be adjusted as new scientific information becomes available.¹⁴⁶ The importance given to improving our understanding of marine ecosystems, their properties and critical functions, as well as the impacts of single and multiple activities on these parameters, has resulted in a shift in the orientation and organisational structure of the research and scientific support services within DFO and by other service providers. Increased partnerships with academia, international scientific organisations, and sister agencies in other governments have facilitated the development of tools for the application of ecosystem-based considerations of ocean issues and the building of a rigorous peer-review scientific advisory process designed to support all ocean managers.

To further develop the scientific understanding necessary to support the implementation of Canada's ocean management policy, an Ocean Management Research Network (OMRN) was established as a joint initiative between the Social Science and Humanities Research Council and the Department of Fisheries and Oceans. The OMRN creates a national network of interdisciplinary and cross-sectoral research working groups to develop and integrate knowledge and best practices for sustainable oceans management.¹⁴⁷

The commitment to advance ocean science and technology is anchored in Canada's Oceans Action Plan with the objective to improve information sharing through connecting information networks, promote innovation and new technologies by supporting prototype development and targeted research and development, and enhanced commercialisation through demonstration projects in the priority LOMAs.¹⁴⁸

Birds Convention Act, 1994 or its regulations are subject to a fine of up to CAD1,000,000 upon conviction by indictment and to a fine of not more than CAD300,000 upon summary conviction. Persons may also be subject to imprisonment up to three years (upon indictment) or up to six months (on summary conviction) (s. 9(1)). Persons and vessels may be convicted for a separate offence for each day the offence is committed or continued (s. 9(2)).

¹⁴⁶ Fisheries and Oceans Canada, n. 2 above, pp. 12–13, 22.

¹⁴⁷ See OMRN website at <<http://www.omrn-rngo.ca/>> (retrieved 27 April 2009).

¹⁴⁸ Fisheries and Oceans Canada, n. 3 above, p. 10.

4.3.8. Financing

Due to fiscal restraints in 1997, no new funds were provided to implement the *Oceans Act* or Canada's Oceans Strategy. Until the federal government's approval of the *Oceans Action Plan* in 2005, funding for implementation of the national ocean management approach had been achieved through reallocation of funds within DFO. The programmes delivered in the six administrative regions of DFO have been dependant on transfers of national funds on an annual basis. Since 1997, the department has redirected approximately CAD100 million to fund the activities in support of the oceans strategy.

The Oceans Action Plan, however, provided some new funding, in the order of CAD28 million over two years across involved departments.¹⁴⁹ The 2007 federal budget proposed CAD19 million over two years to help clean and protect Canada's oceans and support increased water pollution prevention, surveillance, and enforcement along its coasts.¹⁵⁰ Once approved by Cabinet (May 2007) and Treasury Board (September 2007), the Health of the Oceans commitment grew from CAD19 million over two years to CAD61.5 million over five years, projected through 2011–2012. This amount is allocated to five federal departments/agencies as follows: Transport Canada - CAD23.85 million; DFO - CAD23.173 million; Environment Canada - CAD8 million; PCA - CAD6.25 million; and Indian and Northern Affairs Canada - CAD0.175 million.

4.4. Implementation, Evaluation and Long-term Outlook

As referenced earlier, the single greatest challenge in implementing a "horizontal" oceans policy in Canada is the need to persuade or show other sectors, departments, levels of government, and traditional stakeholders that the policy and the integrated management process have benefit and interest for them. Moving from the theoretical level to the application of concepts, such as ecosystem-based management and precaution, in day-to-day decisions is fraught with science challenges, as well as concerns about change. The focus on

¹⁴⁹ Fisheries and Oceans Canada, "Backgrounder: Oceans Action Plan – Phase 1" (May 2005), <<http://www.dfo-mpo.gc.ca/media/back-fiche/2005/hq-ac47a-eng.htm>> (retrieved 27 April 2009).

¹⁵⁰ Department of Finance Canada, n. 23 above.

developing operational tools and guidelines for application has helped to overcome some of these challenges.

There are many challenges in implementing an oceans policy which seeks integration of the planning and management of ocean activities among various levels of government. An additional challenge is re-orientating single species, single activity decisions to decisions focused on the sustainability of the ecosystem and, therefore, of the industries and traditions dependent upon ocean resources. Perhaps the greatest challenges are implementing the institutional changes and building the relationships and capacities essential to achieving integration.

It is through the development of area-based integrated management plans, such as the ESSIM Integrated Ocean Management Plan, that agencies and stakeholders will see themselves (or not) in the product and understand the ecosystem, social and economic objectives that will guide activities in the area.

When addressing an ocean management issue, it is key to accurately assess the spatial and temporal scale at which the management action needs to be taken. If an environmental or economic issue is ecosystem-wide, a sub-national or local intervention will not be effective in addressing the problem. Alternately, if the management issue is multi-sectoral and requires action by different government authorities, intervention by a limited number of responsible authorities will not result in the desired outcomes. An additional challenge is the selection of the appropriate performance indicators. Such indicators must also be chosen in consideration of the spatial and temporal scale at which the system will respond.

4.4.1. Monitoring and Reporting

The *Oceans Act* requires a review of the administration of the Act by Parliament within three years after its enactment.¹⁵¹ The *Report on the Oceans Act* by the Standing Committee on Fisheries and Oceans, in October 2001, concluded that the Act was fundamentally sound. It made 12 recommendations including a recommendation that a performance-based reporting system be established and reports provided to Parliament on an annual basis. A further recommendation called for the preparation of a state of the ocean report on

¹⁵¹ Oceans Act, n. 1 above, section 52.

a periodic basis to track the health of the oceans, ocean communities, and related ocean industries.¹⁵²

On 29 September 2005, the Commissioner of the Environment and Sustainable Development reported to the House of Commons on *Oceans Act* implementation and issued key recommendations.¹⁵³ Recommendations directed to DFO included:

- having Canada's Oceans Action Plan recognised and managed as a government *horizontal initiative*;
- finalising and implementing operational guidance for integrated management planning, including marine protected areas, in the five priority ocean areas;
- planning and managing its resources to ensure commitments and targets set out in departmental documents, such as the annual report on plans and priorities, are met, as well as the 2002 World Summit on Sustainable Development oceans commitments;
- finalising and implementing an accountability framework for its management activities, and
- improving communications to the public, including periodic information on the state of the oceans.

The recommendations were addressed by the Government of Canada through Phase 1 of the Oceans Action Plan released in May 2005.¹⁵⁴ The recommendations continue to be addressed, in part, through the horizontal management of the Health of the Oceans initiative involving five federal organisations, as well as the ongoing convening of Interdepartmental Oceans Committees (ICOs) at the director general, assistant deputy minister, and deputy minister levels.

Federal departments are required to provide a performance report to Parliament as part of their annual report on plans and priorities. Information on programmes, their budgets, plans, and expected results for integrated management, marine protected areas and other ocean management activities are provided for public scrutiny.¹⁵⁵

¹⁵² Standing Committee on Fisheries and Oceans, *Report on the Oceans Act*, (Ottawa: House of Commons, Parliament of Canada, 2001), available: <<http://cmte.parl.gc.ca/cmte/Committee/Publication.aspx?COM=216&SourceId=37019&SwitchLanguage=1>> (retrieved 10 November 2008).

¹⁵³ Commissioner of the Environment and Sustainable Development, n. 25 above.

¹⁵⁴ Fisheries and Oceans Canada, n. 3 above.

¹⁵⁵ Fisheries and Oceans Canada, n. 46 above.

DFO has developed a Results-based Management and Accountability Framework to monitor the progress and implementation of the national ocean policy.¹⁵⁶ This framework sets out performance measurement goals and indicators to assess departmental progress. The Results-based Management and Accountability Framework was designed to track how DFO uses resources to undertake activities in order to affect the desired results and achieve stated outcomes.

From an oceans management programme perspective, monitoring, assessment, reporting, and re-evaluation of management measures applied to achieve the marine environmental quality objectives and social and economic objectives defined for integrated management and marine protected areas are an integral part of the operational frameworks of *Oceans Act* programmes.

4.4.2. Outlook

Funding for Phase 1 of the Oceans Action Plan, renewed funding in the 2007 federal budget and interest shown by other levels of governments to develop collaborative governance arrangements and processes, augur well for short-term implementation of Canada's Oceans Strategy. Integrated management processes are ongoing in five LOMAs and seven marine protected areas have been designated. Work is progressing towards the designation of the remaining candidate marine protected areas originally identified during the pilot phase of the policy development process. For the implementation of the international pillar of the Oceans Action Plan, an international fisheries and oceans governance strategy is being implemented to provide a coordinated approach to addressing key fisheries and oceans governance issues. Key partnerships have been developing with coastal nations with shared interests and maritime boundaries, and considerable international efforts are being directed to addressing environmental issues in the high seas.

Priority actions completed under Phase 1 of the Oceans Action Plan include the development of some ocean management agreements with federal, provincial, territorial, and aboriginal partners. Although these governance arrangements are pivotal, so is the development of capacity at all levels of government, and within the stakeholder community, to implement integrated management in all Canadian marine waters. Changes in relationship among sectors, and between sectors and their regulators, require time and investment.

¹⁵⁶ Commissioner of the Environment and Sustainable Development, n. 25 above, p. 12.

Successful replacement of sectoral relationships by multiple industry coalitions and management decisions integrated to focus on a geographic space rather than single activities all define the long-term outlook of successful oceans management in Canada. Health of the Oceans funding has secured support for the integrated management process with respect to the advancement of federal and national marine protected area networks, through to 2012. This augers well for meeting international biodiversity commitments. However, the broader commitment to applying integrated oceans management beyond the LOMA boundaries continues to be a challenge due to funding and capacity issues.

4.5. Lessons Learned

While Canada, like other countries, is still learning in the complex field of ocean policy and governance, seven major lessons do stand out.

1. Enabling ocean management legislation provides a useful guide

Canada's *Oceans Act* has provided an important framework for directing how human uses of Canada's oceans may be better managed. The Act has defined Canada's maritime zones and recognised the attendant rights and responsibilities within those zones in conformity with the LOS Convention. The Act has clearly designated DFO as the lead federal authority for developing integrated management plans for marine areas, for setting the environmental quality standards which must be met, and for designating/establishing marine protected areas. The Act has facilitated the development of a broad policy framework and a government-wide plan of action.

2. Passing an oceans act should not detract from the need for other legislative and regulatory reforms

While Canada's *Oceans Act* has substantially advanced ocean governance initiatives and arrangements, there remain several sectoral laws which do not yet reflect the modern ocean governance commitment of the Government of Canada. For example, Canada's *Fisheries Act*, dating back to 1868, has yet to be "modernised" to reflect modern ocean governance principles, although the policies guiding its application have evolved over time.

In response to this problem, the Minister of Fisheries and Oceans introduced two proposed revisions of the *Fisheries Act*, Bill C-45 in December

2006 and Bill C-32 in November 2007. The proposed revisions explicitly supported the application of the principles of sustainable development, including the ecosystem approach, precaution, and increased stakeholder participation in decision making. However, both bills died on the order paper when the parliamentary sessions were prorogued (formally ended). As of the time of writing, a new fisheries bill had not been reintroduced.

3. Including sustainable development principles in national oceans-related legislation is very important

While principles by their nature tend to be general and open to various interpretations, principles such as integration, precaution, and the ecosystem approach do serve useful functions. At the very least, principles invite decision makers and others to rethink traditional management approaches. Principles may be considered part of the search for “good governance.” They facilitate discussions and debate within government bureaucracies, but also among the broader public.

4. Developing integrated management plans and establishing marine protected areas takes time

Building the relationships and capacity required to bring participants at all levels to the table takes time and requires skilled negotiation. The special relationship of the government with Aboriginal peoples must be considered and managed in the development of marine protected areas and integrated management planning processes. Both of these processes involve multiple steps, all of them requiring, to a greater or lesser extent, the involvement of other government authorities and meaningful consultation with affected parties.

In going forward, one of the major tests will be the management of public expectations for timely and focused intervention to address issues of immediate concern to them. User conflicts and environmental degradation have evolved over years. To change human relationships and to detect positive responses in the marine environment will likely require decades.

5. Federated states face particular challenges in achieving integrated coastal/ocean management

Being a country with eight provinces and three territories fronting ocean areas, Canada faces special challenges in achieving integrated coastal/ocean management. Canada’s *Oceans Act* recognises the constitutional limitations of

the federal government by limiting integrated management planning to marine waters and not directly encompassing provincial coastal lands and rivers.¹⁵⁷ The *Oceans Act* requirement for the federal government to collaborate with other levels of government seeks to draw in other government authorities as partners in the integrated management process while respecting the current division of powers. The extent to which integrated management planning initiatives will influence provincial laws, policies, and interests remains to be seen.

The complexity of shared federal-provincial responsibilities may also affect the pace of legislative and regulatory developments. For example, development and enactment of Canada's *Species at Risk Act* was prolonged in part due to the jurisdictional complexities and sensitivities surrounding species at risk. Several other ocean-related activities, such as aquaculture management, involve both federal and provincial authorities and, therefore, present significant challenges because of federal-provincial jurisdictional issues.

The relationship of the federal government with provinces and territories continues to develop, and much of the success of integrated planning will depend on continuing progress. It is through these inter-jurisdictional relationships, and between regulators, that an existing fragmented set of laws and policies will be coordinated in the domestic management of oceans activities.

6. Limited marine ecosystem understanding continues to be a major challenge

While Canada is firmly committed to implementing an ecosystem-based approach to management, including fisheries management, the limited scientific data and understanding of complex marine ecosystems remains a challenge. Canada's Oceans Action Plan has recognised that ecosystem-based science needs to be strengthened and one of the pillars of the plan is to enhance ocean science and technology.¹⁵⁸

7. Incentives are critical for changes in governance and accountability

Ecosystem-based integrated management of oceans requires changes in governance both within the federal agencies and between levels of government.

¹⁵⁷ Oceans Act, n. 1 above, s. 28.

¹⁵⁸ Fisheries and Oceans Canada, n. 3 above, pp. 9–10.

Until implementation of the Oceans Action Plan was initiated, neither the necessary inter-agency structures, nor other departmental accountabilities were in place. During the first years of implementation of Canada's *Oceans Act* and oceans policy, both accountability and financing (internal reallocation) were located with only one department (DFO). This situation did not support a coordinated federal approach.

As recommended in the 2005 *Report of the Commissioner of the Environment and Sustainable Development*, a horizontal, all-of-government approach is a fundamental requirement for success in bringing all federal regulators to the table. Sub-national authorities (provincial, territorial, aboriginal) and stakeholders may require capacity-building and incentives to participate in a national programme. Financial investment is required to build integrated management and may be an important incentive both at the federal and sub-national level.

4.6. Conclusion

Integrated management objectives involve significant changes in science advice, regulatory activities, and intergovernmental and stakeholder relationships. While progress has been made in pilot areas, the advent of the targeted Oceans Action Plan with federal government political and financial support is allowing the coherent development of integrated management plans in five key areas of Canada's oceans.

Experience gained since the promulgation of the *Oceans Act*, and adoption of Canada's Oceans Strategy as the federal policy framework, has highlighted the need for clear implementation strategies. Efforts will need to continue on advancing

- intersectoral and inter-departmental buy-in (Canada's Oceans Action Plan),
- intergovernmental(federal-provincial) relationships (Canadian Council of Fisheries and Aquaculture Ministers and federal-provincial agreements),
- increased collaboration internationally to address issues of common concern, and
- clear guidelines for the interpretation and implementation of ecosystem-based management.

Implementing a results-based system of monitoring and reporting for government-wide initiatives is daunting, with ministerial accountabilities continuing to be linked to single activities as opposed to the horizontal target of integrated oceans management. Generating the political will, profile, and resources to support a robust policy and effective implementation of the integrated approach continue to be long-term goals.

Chapter 5

Maritime Spatial Planning: About the Sustainable Management of the Use of Our Seas and Oceans

Nicole Schäfer*

5.1. Introduction

The law of the land cannot swim. Every major marine activity impacts on every other one. [...] Sometimes this impact is positive; sometimes it is negative. It is simply not possible, in any meaningful way, to deal with these activities separately.¹

Sustainable development is at the heart of the European Union's agenda.² Its challenge is to ensure mutual reinforcement of economic growth, social welfare, and environmental protection. On 7 June 2006, the European Commission adopted the Green Paper "Towards a Future Maritime Policy for the Union: A European Vision for the Oceans and Seas."³ With the Green Paper the European Union (EU) acknowledged for the first time that its policies on maritime transport, industry, coastal regions, offshore energy, fisheries, the marine environment, and other relevant areas had been developed separately. Attempts were made to ensure that their impact on one another was taken into account. But neither a governance structure was established that took care of the broader links between the different sectoral policies. Nor was the responsibility assumed for examining in a systematic manner how these policies could be combined to develop synergies and reinforce each other.

It is indisputable that fragmented decision making can result in the adoption of conflicting measures, which in turn has negative consequences on the marine environment or imposes disproportionate constraints on competing

* The views expressed in this publication are those of the author and do not necessarily reflect the views of the European Commission.

¹ E. Mann Borgese, *The Oceanic Circle. Governing the Seas as a Global Resource* (Tokyo: United Nations University, 1998), p. 6.

² Commission of the European Communities, *Communication from the Commission to the Council and the European Parliament on the review of the Sustainable Development Strategy: A Platform for Action*, COM(2005) 658 final, 13 December 2005.

³ Commission of the European Communities, *Towards a future maritime policy for the Union: A European Vision for the Oceans and Seas*, COM(2006) 275 final, 7 June 2006.

maritime activities. The mainly sectoral treatment of complex ecosystems like the seas and oceans makes it difficult to comprehend the potential impact of one set of activities upon another. The Green Paper launched a broad debate about a future maritime policy for the EU. A year-long consultation phase was organised involving all stakeholders, decision makers, and institutions in the shaping of the new policy. Nearly 500 contributions were received throughout this consultation phase, clearly revealing the enormous potential of the seas and the scale of the challenge that has to be embraced to achieve sustainable use and development of our seas and oceans.

The idea to forge a new vision for the management of our relations with the seas and oceans and to establish an integrated approach to maritime affairs that involves all relevant sectoral policies was broadly supported. Consequently, the various contributions led to the development of the so-called “Blue Book”—a policy white paper—which constitutes the foundation of a new integrated, inter-sectoral approach towards cooperation and effective coordination of all sea-related policies at various decision-making levels.⁴ The new EU Integrated Maritime Policy recognises that all matters relating to Europe’s oceans and seas are interlinked and that sea-related policies must be developed in an integrated manner if the desired results are to be achieved. The Blue Book was adopted with an accompanying Action Plan on 10 October 2007⁵ and endorsed by the European Council in December 2007.

Of course, the development of an EU Integrated Maritime Policy did not happen “out of the blue.” Facing the challenges of globalisation and competitiveness, climate change, degradation of the marine environment, maritime safety and security, and energy security, as well as overall sustainability, inevitably lead to more strategic and integrated thinking. In addition, this EU policy has to be seen in an international context.

There is first and foremost the United Nations Convention on the Law of the Sea (LOS Convention), adopted in 1982, which states in its preamble that “[...] the problems of ocean space are closely interrelated and need to be

⁴ Commission of the European Communities, *Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions. An Integrated Maritime Policy for the European Union*, COM(2007) 574 final, 10 October 2007, available: <<http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=COM:2007:0575:FIN:EN:PDF>> (accessed 29 April 2009) [hereinafter Blue Book].

⁵ Commission Staff Working Document, *Accompanying Document to the Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions, An Integrated Maritime Policy for the European Union*, Brussels, SEC(2007) 1278, 10 October 2007, available: <http://ec.europa.eu/maritimeaffairs/pdf/ActionPaper/action_plan_en.pdf> (accessed 29 April 2009).

considered as a whole [...]”.⁶ Other countries have established integrated regimes for the sustainable management of their oceans and seas. In 1997, Canada adopted the *Oceans Act* and became one of the first countries in the world to make a legislative commitment to a comprehensive approach for the protection and development of oceans and coastal waters.⁷ The Act calls for the development of a national oceans strategy to guide the management of Canada’s estuarine, coastal and marine ecosystems. Canada’s Oceans Strategy, adopted in 2002, provides the overall strategic framework for Canada’s oceans-related programmes and policies and introduces the aim of developing and implementing integrated ocean management plans.⁸

Another example of a state that has adopted an integrated maritime regime is Australia, which established a Marine Park Authority for the Great Barrier Reef and already in 1994 had adopted a 25-year strategic plan for the Great Barrier Reef World Heritage Area.⁹ The plan outlines strategies for managing and preserving this coral reef ecosystem and provides the basis to ensure wise use and protection of the World Heritage Area. Eight different strategic areas are identified, including resource management, research and monitoring, and integrated planning. For each of these areas, the strategic plan provides 5-year and 25-year objectives to guide the sustainable use and management of each area. It is important to note that although protected, the Great Barrier Reef Marine Park is a multiple-use area.

These are just two examples from many. For instance, the United States is active in the sustainable management of human activities at sea (e.g., in the Gulf of Maine), and on 27 October 2001, China adopted the Law on the Management of the Sea Uses. These examples make no claim to be complete, but they do illustrate that the recent developments at the European level towards an integrated maritime policy echo similar dynamic approaches from around the world. All these initiatives follow the same conviction: we have to change how we make policies and take decisions to safeguard ocean sustainability.

⁶ *United Nations Convention on the Law of the Sea*, Montego Bay, 10 December 1982, 1833 U.N.T.S. 396 [hereinafter LOS Convention].

⁷ *Oceans Act*, S.C. 1996, c. 31.

⁸ Fisheries and Oceans Canada, *Canada’s Oceans Strategy: Our Oceans, Our Future* (Ottawa: Fisheries and Oceans Canada, Oceans Directorate, 2002), available: <http://www.dfo-mpo.gc.ca/oceans-habitat/oceans/ri-rs/cos-soc/pdf/cos-soc_e.pdf> (retrieved 15 November 2008).

⁹ Great Barrier Reef Marine Park Authority, *The Great Barrier Reef: Keeping it great* (Townsville: GBRMPA, 1994), available: <http://www.gbrmpa.gov.au/__data/assets/pdf_file/0005/2111/mp_017_full.pdf> (retrieved 29 April 2009).

The implementation of an integrated maritime policy requires adequate planning tools that cut across sea-related sectoral policies and supports unified policy making. Maritime spatial planning is considered to be one of the key tools in this regard. The following sections elaborate on the development of maritime spatial planning, its character and procedural steps, as well as the challenges that lie ahead in order to use maritime spatial planning to its maximum capacity in the European Union.

5.2. The Emergence of Maritime Spatial Planning

We are at a crossroads in our relationship with the oceans.¹⁰

At the European level the term *maritime* spatial planning is favoured over marine spatial planning, despite the current situation whereby many countries use a different term. During the development of the EU Integrated Maritime Policy, emphasis was placed on the fact that integrated sustainable management is more than nature protection and conservation. The ecosystem-based approach, which underpins not only the Integrated Maritime Policy but also maritime spatial planning, requires the consideration of ecological and socio-economic aspects. The term *maritime* spatial planning highlights the importance of managing all sea-related sectors and human activities at sea in an integrated, well-balanced manner and in compliance with a healthy ecosystem.

5.2.1. The Current Situation: Use Without Coordination

Our interactions with the sea are more intense, more varied, and create more value than ever before. On the one hand technology and know-how allow us to extract ever more value from the sea, new uses such as offshore installations for renewable energy (particularly offshore wind farms) complement traditional uses, and more and more people benefit from the generated values. On the other hand the cumulative effect of this increased activity leads to competition for limited marine space and increases stress on marine ecosystems. The growing vulnerability of coastal areas, increasingly crowded coastal waters, the key role of the oceans in the world's climate system, and the continuous deterioration of

¹⁰ Blue Book, n. 4 above, p. 2.

the marine environment all call for a stronger focus on our oceans and seas. The current fragmented decision-making framework in maritime affairs in Europe is inadequate in meeting these challenges. Policies on, for instance, maritime transport, fisheries, energy, surveillance and policing of the seas, tourism, the marine environment, and marine research have developed on separate tracks, which leads to inefficiencies, incoherencies, and conflicts of use.

The example of the Belgian part of the North Sea illustrates clearly the current situation of multiple uses of marine space without coordination. The scientific GAUFRE project (2003–2005)¹¹ was launched to deal with the high level of use in the Belgian part of the North Sea in a structural manner. The North Sea is one of the most exploited areas of water in the world, and the Belgian part of the North Sea lies at the hub of these activities. An assessment of the current activities in the rather small Belgian sector of the North Sea resulted in a chaotic picture of overlapping uses and an overuse of the available marine space by 264 percent.¹²

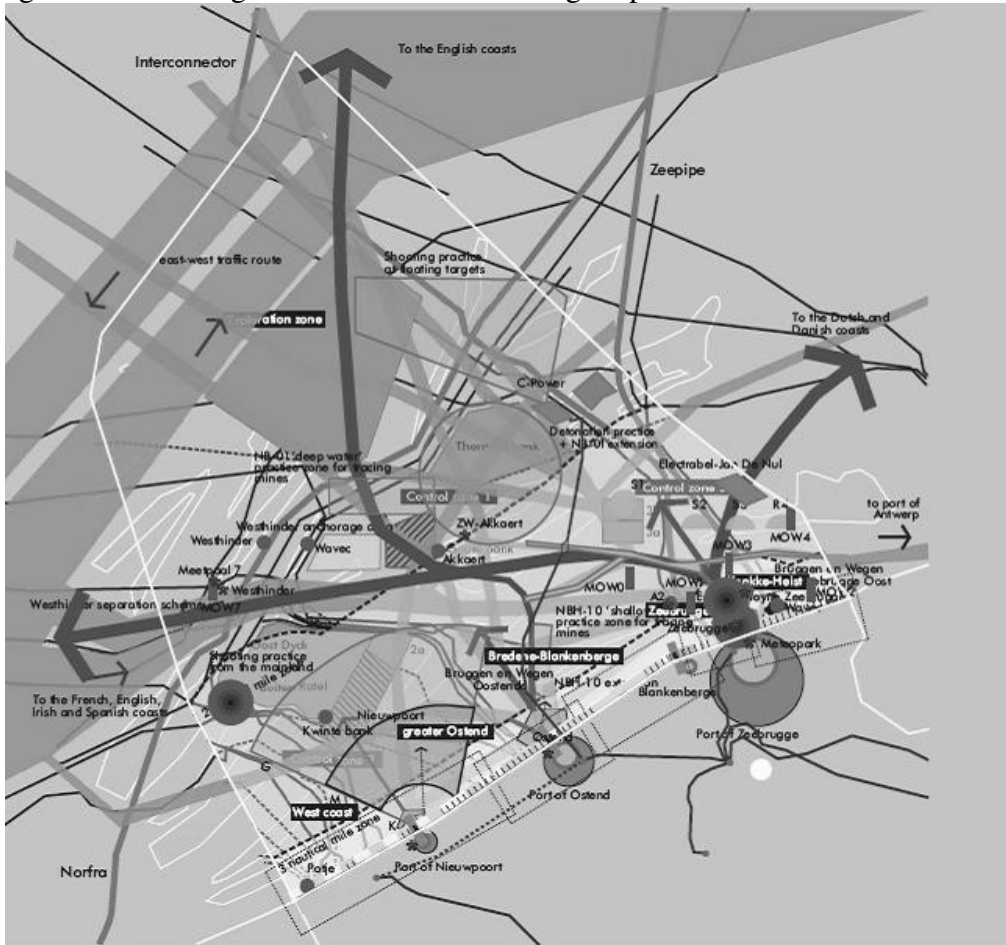
The GAUFRE project highlighted the urgent need for a spatial structure plan due to the demands of renewable energy at sea (offshore wind farms), the Common Fisheries Policy of the EU, and the requirement to delineate marine nature reserves (the Natura 2000 network)¹³ in the Belgian sector of the North Sea. It must be emphasised that the Belgian example is not an exceptional case. The same picture of uncoordinated, potentially conflicting, high-density uses could be drawn for any other European sea basin.

¹¹ The project was made up of an interdisciplinary team of experts, representing legal sciences, socio-economic sciences, as well as experts in marine biology and marine geology.

¹² “The GAUFRE Project 2003–2005,” available: <http://www.maritieminstituut.be/main.cgi?s_id=165=&lang=en> (retrieved on 29 April 2009).

¹³ The Habitats Directive (together with the Birds Directive) forms the cornerstone of Europe’s nature conservation policy. These directives require EU Member States to identify areas for nature protection, which will in turn form a Europe-wide network of nature protection areas—the so-called Natura 2000 network, available: <http://ec.europa.eu/environment/nature/legislation/habitatsdirective/index_en.htm> (retrieved on 29 April 2009).

Figure 5.1. Existing maritime uses in the Belgian part of the North Sea



Source: “The GAUFRE Project 2003–2005,” available at Universiteit Gent Maritiem Instituut website: <<http://www.maritieminstituut.be>> (retrieved 18 November 2008).

5.2.2. Maritime Spatial Planning: A Key Tool for Sustainable Decision Making

Existing planning frameworks have a largely terrestrial focus and often do not address how coastal developments affect the sea and vice versa. Maritime spatial planning (MSP) is a coordinated, integrated process that builds on an ecosystem-based approach.¹⁴ It seeks to integrate all relevant maritime sectors

¹⁴ The ecosystem approach refers to “the comprehensive integrated management of human activities based on the best available scientific knowledge about the ecosystem and its

and human activities; no sector is given priority over another. MSP therefore reaches beyond managing and protecting the marine environment. Its main objective is to allocate marine space in a rational manner and thus arbitrate between different sectoral or user interests. MSP provides certainty for investments through a reliable planning process that helps to secure the sustainable and integrated development of sea areas by balancing economic, social and environmental objectives.

Despite some similarities, MSP differs significantly from terrestrial or land use planning. Thus terrestrial planning systems cannot simply be transferred to the marine environment. MSP operates in a continuous three-dimensional environment and in complex ecosystems, and has to simultaneously address activities that take place on the seabed, in the water column, and on the water surface. These activities are usually not independent from each other but are permanently intertwined. MSP must take account of both fixed structures, such as oil rigs, pipelines or wind farms, but also the mobile nature of many maritime activities (such as fishing and navigation) that use space but not permanent structures. Additionally, the time dimension plays an important role in MSP. The compatibility or incompatibility of uses is highly dependent on the various seasonal stages of an ecosystem and might therefore significantly vary over time, e.g., compatibility between nature protection and fisheries, recreational fishing and commercial fisheries, or nature protection and marine tourism. This variation has to be taken into account when maritime spatial management decisions are made.

The most striking difference, however, between MSP and terrestrial planning is the legal framework in which the related activities take place. Land use planning takes place against a common background of land tenure rights which do not have a maritime equivalent. Instead, maritime activities are regulated through a range of sectoral laws, plans, and licenses/permits.

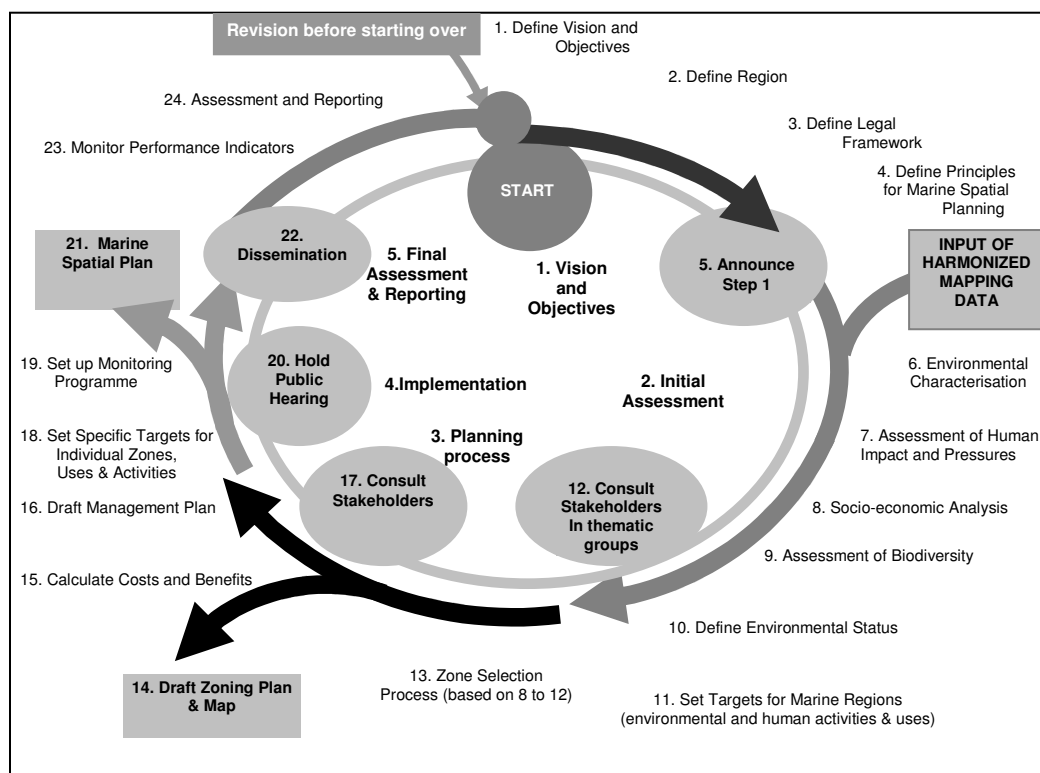
MSP is place-based management in the sense that it has to reflect the specific uses, needs and challenges of a given sea area. It is important to define the planning area in a transparent manner, involving all relevant stakeholders and decision makers, in order to avoid any misunderstandings or user conflicts throughout the process. This might result in a country deciding to develop a prescriptive maritime spatial plan only for a particularly vulnerable or densely

dynamics, in order to identify and take action on influences which are critical to the health of marine ecosystems, thereby achieving sustainable use of ecosystem goods and services and maintenance of ecosystem integrity.” C. Ehler and F. Douvère, *Visions for a Sea Change. Report of the First International Workshop on Marine Spatial Planning*, Intergovernmental Oceanographic Commission and the Man and Biosphere Programme. IOC Manual and Guides 46: ICAM Dossier, 3 (Paris: UNESCO, 2007), p. 16.

used area where conflicts between different activities are likely to occur. More general management principles might suffice for an area with a lower density of uses. The decision on whether to opt for a stricter or more flexible approach should be subject to an assessment and evaluation process.

MSP is a circular process that—pursuant to the identification of the planning area—consists of the definition of objectives, the assessment of the present situation for which the best available data and information should be used, stakeholder involvement, the transparent and participatory development of a maritime spatial plan, the implementation of this plan, enforcement measures, evaluation, and subsequent revision or amendments to the plan. Figure 5.2 was developed by the BALANCE project and provides a good overview of the steps in the MSP process. The development of a maritime spatial plan is hence only one step in the entire process and by no means a final result.

Figure 5.2. Planning cycle as developed by the BALANCE project



Source: Jan Ekeboom et al., *Towards marine spatial planning in the Baltic Sea, BALANCE Technical Summary Report 4/4*, May 2008, p. 21, available: <<http://balance-eu.org/publications/index.html>> (retrieved 29 April 2009).

MSP can be implemented through various instruments of which zoning is only one possible option. Current practice shows, however, that the delineation of zones for certain maritime activities is the preferred option. The reason for this choice might be that the process of zoning is well known from land use planning and is therefore a familiar way to deal with spatial management. Whether or not zoning is the best way to implement MSP or whether other instruments have to be developed that are tailor made for the specific demands of MSP is a matter of further research and debate.

5.3. Current Practices

Knowing is not enough; we must apply. Willing is not enough; we must do.¹⁵

At the European level, MSP is a fairly new approach. Implementation of MSP is the responsibility of EU Member States, and the experiences at the national level remain limited. Despite the application of the subsidiarity principle, action at the EU level can provide significant added value. As announced in the Blue Book for the EU Integrated Maritime Policy and the accompanying Action Plan, the European Commission adopted on 25 November 2008 the Communication “Roadmap on Maritime Spatial Planning: Achieving Common Principles in the EU.”¹⁶ This Communication aims to facilitate the development of MSP and to encourage its implementation both at the national and EU levels. To support this objective, the Roadmap provides information on existing approaches in EU Member States and other international examples, as well as indicating international and EU legal instruments that have an impact on MSP. Based on this stocktaking exercise, the Roadmap identifies ten key principles for MSP that will form the basis for a broad debate on a common approach to MSP in the EU. These key principles are:

1. Using MSP according to area and type of activity
2. Defining objectives to guide MSP
3. Developing MSP in a transparent manner
4. Stakeholder participation

¹⁵ Johann Wolfgang von Goethe (1749–1832).

¹⁶ Commission of the European Communities, *Communication from the Commission, Roadmap on Maritime Spatial Planning: Achieving Common Principles in the EU*, COM(2008) 791, 25 November 2008.

5. Coordination within Member States – simplifying decision making
6. Ensuring the legal effect of national MSP
7. Cross-border cooperation and consultation
8. Incorporating monitoring and evaluation in the planning process
9. Achieving coherence between terrestrial and maritime spatial planning – relationship with integrated coastal zone management (ICZM)
10. A strong data and knowledge base

As follow-up to the Roadmap, the European Commission is currently organising a series of four workshops throughout 2009 to further discuss the applicability of the key principles and to develop a common understanding on MSP across the EU. Additionally, it is envisaged that two pilot projects will be launched in the Baltic Sea and the North Sea/North East Atlantic area to test the cross-border implementation of MSP. These pilot projects will be run in close cooperation with EU Member States, relevant stakeholders, and international organisations. Finally, the Commission will launch a study on the economic benefits of MSP. Up until now such benefits are assumed but cannot yet be proven by facts and figures. This study will help to identify reliable information in this respect.

5.3.1. Examples from European Countries

Some European countries have been the forerunners for the implementation of MSP, while others have more recently started to develop integrated management strategies for their sea areas. The activities vary significantly regarding their legally-binding function and their sectoral coverage. Some Member States have developed, on the basis of their terrestrial planning law, maritime spatial plans that will become executive order law once the consultation process is finalised (e.g., Belgium and Germany). Others have developed strategic or integrated management plans that are not legally binding but aim to give guidance to the maritime sector regarding, for example, the location of maritime installations (e.g., the Netherlands and Norway). Furthermore, policy framework documents—marine bills—have been prepared (e.g., by the United Kingdom and Scotland) or currently are under preparation (e.g., by Sweden) to implement a national integrated maritime policy and to steer future maritime development in a sustainable way. In all these policy setting documents, MSP plays an important role in implementing a coordinated approach to the allocation of marine space.

Most recently, Poland has adopted guidelines on maritime policy. These guidelines seek to upgrade the maritime dimension in all areas of the country's development. They are meant to be a basis for developing a regulatory system based on an integrated cross-sectoral approach to maritime affairs. The French government has launched the *Grenelle de la Mer*, applying the principles from the *Grenelle de l'Environnement*, its long-term policy vision on ecological and sustainable development, to the oceans and seas. Further to the identified need for an integrated approach to the sea and new governance structures, the *Grenelle de la Mer* will develop a comprehensive strategy for the sea in the form of a law based on sound scientific, economic, and social assessment by the end 2009.

It must be emphasised that MSP not only has a present but also a forward-looking dimension. As far as current practice is concerned, EU Member States tend to focus mainly on the management of ongoing maritime uses and related licensing procedures. Given the ecosystem-based approach of MSP and the cross-border nature of all maritime activities, this approach can be seen as too short-sighted. Objective setting remains a sectoral-oriented process, which leads to an unrealistic account of user interests following on the slogan "no limits." This way of objective setting does not reflect the capacity and the performance of the ecosystem and therefore has to be changed. An integrated assessment of all sectoral demands and the mirroring of the assessment results with the capability of a given ecosystem will very likely lead to a revision of the present set of objectives. In order to use MSP to its maximum management and steering capacity, foreseeable uses and sectoral developments have to be taken into account, as well as the political climate that influences the development of the sea and the ocean.

Currently, there is a different approach to MSP in northern Europe compared to southern Europe. While many northern European countries have both a regime for integrated coastal zone management (ICZM) and MSP, the southern European states tend to focus their activities on the implementation of ICZM. The management of coastal zones has a long tradition in these countries, and recent developments like the ratification of the ICZM protocol under the Barcelona Convention strengthen this tradition. The very complex situation of the Mediterranean Sea (a large number of third countries and so far no exclusive economic zone claims by EU Member States) challenges the implementation of MSP. However, both the Barcelona Convention ICZM protocol and the experience of other EU Member States with the spatial management of territorial waters (e.g., Spain has launched a study to zone its territorial waters for offshore wind uses, and the German federal state of Mecklenburg Vorpommern has developed integrated maritime spatial planning

for its territorial waters) offer interesting opportunities for the elaboration of MSP particularly in complex sea areas like the Mediterranean and the Black Sea.

5.3.2. International Good Practices

Internationally, there are many good practices examples that can be highlighted regarding the use and implementation of MSP. Australia, with its management of the Great Barrier Reef, has the longest tradition. As mentioned above, the Great Barrier Reef Marine Park is a multiple-use area. The instrument of zoning is applied to help to manage and protect the values of the marine park. Zoning plans define what activities can occur in which locations, both to protect the marine environment and to separate potentially conflicting activities. Australia is currently the only country that has a sufficiently long experience with zoning (over 15 years), which has resulted in a monitoring and evaluation process of the ocean management activities at the Great Barrier Reef. This process was developed following extensive research and the most comprehensive community consultation process ever undertaken on an Australian environmental issue. It led, in 2004, to the introduction of revised zoning of the Great Barrier Reef Marine Park as part of the Great Barrier Reef Marine Park Authority's Representative Areas Program.¹⁷

In Canada, the Eastern Scotian Shelf Integrated Management (ESSIM) Plan was endorsed by the senior intergovernmental Regional Committee on Ocean Management in December 2006. This is the first integrated ocean management plan under the *Oceans Act* (see above). The initiative is a collaborative ocean planning process that considers the ecosystem and all of its uses comprehensively. The aim of the plan is to provide a common basis for commitment and action for sustainable use, conservation, and integrated ocean management in the Eastern Scotian Shelf planning area. To achieve this aim the plan is organised according to the following goals:

- Collaborative governance and integrated management
- Sustainable human use
- Healthy ecosystems

¹⁷ Australian Government, Great Barrier Reef Marine Park Authority, available: <http://www.gbrmpa.gov.au/corp_site> (retrieved 29 April 2009).

The ESSIM plan employs a multi-stakeholder planning and objective-based approach to integrated ocean management. The objective-based management framework consists of a hierarchy of objectives, associated management strategies and actions, and a reporting system. Key elements are identified for effective implementation, monitoring, and evaluation of the plan. This initiative represents a long-term commitment to integrated ocean management.

These are only two of many examples that illustrate the rich international experiences in MSP that can benefit the development at European level and vice versa. Lessons are still to be learned and a number of challenges are ahead of us to improve the knowledge and skills that are needed to implement MSP in a meaningful way. The following section will touch upon some of these challenges.

5.4. Challenges for Implementation and Future Development of MSP

An invasion of armies can be resisted, but not an idea whose time has come.¹⁸

5.4.1. MSP in the High Seas

According to the LOS Convention, a nation state has full jurisdiction in its internal waters and the territorial sea (up to 12 nautical miles) and sovereign rights for the purpose of economic exploitation (e.g., resources, energy) in the exclusive economic zone (up to 200 nautical miles). The possibility of regulating maritime uses in the high sea—in other words to implementing MSP in areas outside national jurisdiction—are very limited. This does not, however, mean that sustainable management of the high seas is not needed. As Elisabeth Mann Borgese stated, “In the seas and oceans, where everything flows, everything interacts with everything else, and resources are ‘straddling’, the notion of hard and fast ‘boundaries’ is rather meaningless to start with. It is impossible to manage resources or to protect the environment even within the largest Exclusive Economic Zone, if there is no management beyond the boundary.”¹⁹ The LOS Convention is not at its final stage. Regulations and

¹⁸ Victor Hugo (1802–1885), *Histoire d’un crime*, 1852.

¹⁹ Borgese, n. 1 above, p. 123.

rules have to be flexible enough to adapt to changing framework conditions. When the LOS Convention was adopted, the urgent need for sustainable management and the protection of the marine environment were probably not as obvious as they are today. Some success has been made regarding the protection of the marine environment in the high seas (one example in this respect is the PELAGOS sanctuary for marine mammals in the Mediterranean²⁰). It might be worth considering whether the LOS Convention should be amended to facilitate the use of MSP in the high seas.

5.4.2. International Governance Structures

Current practice shows that a reliable governance structure is a pre-condition for meaningful and long-term sustainable management of marine resources. Further work needs to be done to develop governance structures, particularly at the international level, when sea basins are shared by several countries or, in the case of the EU, by different Member States. The United Nations Environment Programme Regional Seas Programmes might offer an opportunity to achieving this goal. However, the objectives of the Programme and the various regional seas conventions largely focus on the protection of the marine environment. If MSP is to be respected and accepted by all maritime sectors, its neutral position is of utmost importance. As illustrated above, MSP provides the appropriate framework to arbitrate between sectoral interests. This only works if all the sectors are treated as equals. Any situation that can lead to a biased MSP process must be avoided. This could become a difficulty if regional sea conventions are given the added responsibility of implementing MSP at the international level whilst their mandate is not broadened beyond environmental issues.

5.4.3. Cumulative Effects of Maritime Uses

MSP builds on the ecosystem approach. Ecosystem-based management requires the protection of the ecosystem, its functioning and processes; the recognition of all inter-connectedness within and among systems; the integration of

²⁰ The Pelagos Sanctuary, available: <<http://www.tethys.org/sanctuary.htm>> (retrieved 29 April 2009).

ecological, social, economic and institutional perspectives; and place-based management. In order to meet these requirements, assessment methods and instruments are needed that take the whole ecosystem into account. Currently, assessments are mainly carried out on a case-by-case basis (e.g., in the framework of an environment impact assessment for major infrastructure or installations) and in a national rather than cross-border context. Further research is urgently needed to develop appropriate tools and methodologies that help to measure the cumulative effects of human activities on an ecosystem.

5.4.4. Compatibility of Uses: The Different Dimensions of MSP

Knowledge about the compatibility of uses at sea remains very limited. Information that is available was mainly gathered with the focus on a certain situation or conflict (e.g., the reaction of migrating birds to a new offshore wind farm or the level of disturbance of marine mammals due to the installation and operational noise of windmills). The information is, therefore, generally site specific and results cannot necessarily be transferred to a similar situation or a different location. The question of compatibility is also closely linked to the cumulative effects of maritime activities. Although a specific location and activity might be compatible, compatibility might not be assured if the project in question is examined in the context of its adjacent uses. Furthermore, there are no reliable methods and instruments to measure the influence of the time dimension to compatibility. Research and further scientific input is needed to develop tools that better match the complex challenges posed in marine ecosystems.

5.4.5. Educational Needs

A relatively untouched challenge is that of educational needs. Who are the people that will implement maritime spatial planning? Where can these people be trained? What kind of knowledge do they need? Universities have only taken the first steps to build up this educational base, e.g., summer schools for MSP or ICZM. To date, no full curriculum has been developed to teach MSP at the university level. Lessons can be learned from land use planning. Educational institutions offer a programme of a general study that provides the students with an overview of the related sectoral policies and conveys integrated thinking,

coordination and cooperation with regard to land use planning. A similar set-up is needed for MSP. Students, as well as employees of the responsible public authorities, have to have at least a basic knowledge about maritime transport, shipping, maritime energy (both fossil and renewable), oceanography, biology, the marine environment, fisheries and aquaculture, coastal and marine tourism, the land-sea interface and so forth. Internationally, it is time to join forces and develop training programmes and courses that provide the people that have to implement MSP with the required knowledge and skills.

5.5. Conclusion

MSP is a rather new development at the European level. Although spatial planning at sea was used by some countries at the national level already in the 1960s and 1970s (examples are the United Kingdom, the Netherlands and Norway), the related management activities focussed to a large extent only on sectoral needs (planning for one particular sector like the dredging industry, offshore oil and gas exploitation, fisheries and aquaculture, etc.). This can not be considered MSP as it is defined today. Integrated plans that include all relevant maritime sectors did not exist and still are very rare. Even the most advanced EU Member States like Germany, the Netherlands or Belgium have not managed yet to integrate all maritime sectors. Particularly fisheries, but also recreational uses of the sea or military uses, are very challenging to integrate. This is not only due to the specific structure of the given sectors but also to the restricted accessibility or limited availability of reliable data and information. At the European level, it is the first time that an attempt has been made towards a concerted framework for MSP, to encourage its implementation, and to develop a common understanding of the process and its instruments. A joint learning process that has only started, it is, however, promising. Global challenges like climate change and the maritime dimension that encompass virtually any human activity have led to the conviction that sectoral decision making should be replaced by an integrated, all-embracing approach to the management of marine resources. Diverse user interests in the seas and oceans have to be carefully measured and guided to ensure their compliance with a healthy marine environment that everything else depends on.

This chapter has only touched upon some of the future challenges in regard to implementing MSP. The availability and accessibility of reliable information and data will also be an important issue in the future. If conflicts of uses between maritime sectors are to be avoided, or at least reduced to

a minimum, trust has to be build to turn the current “my interests first and without limits” approach into a real integrated approach. Implementing MSP will provide economic benefits. This is not only relevant for maritime industries, but also for the credibility of the whole MSP process. It is important to prove with facts and figures that the effort as well as the costs involved in implementing MSP will pay off. If we truly want to achieve sustainable use of marine resources and protect the marine environment for coming generations, MSP provides a promising way forward.²¹

²¹ More information on the different aspects of MSP is provided in the Special Issue of *Marine Policy*, “The Role of Marine Spatial Planning in Implementing Ecosystem-Based Sea Use Management,” Volume 32, September 2008.

Part II

Ocean Resources

Chapter 7

Ocean Renewable Energy in the European Union: Understanding and Strengthening EU-Canada Relations in Law of the Sea and Ocean Governance

*Freedom-Kai Phillips**

7.1. Introduction

Ocean-based renewable energy sources, though in their infancy relative to other more widely employed technologies (particularly wind and solar), have an immense potential to positively impact two preeminent EU energy policy goals: greenhouse gas emission reduction and security of supply. Europe has made many progressive strides in terms of renewable energy governance, and other nations may therefore benefit greatly from a comparative assessment of the EU's ocean renewable energy policy. This contribution examines the legal framework governing the development of ocean renewable energy in the EU, in particular the Renewables Directive, and provides an overview of the various policy instruments employed by the Member States domestically, with special reference to those relevant for ocean renewable energy utilisation. Finally, the paper also includes a detailed case-study of the Scottish Strategic Environmental Assessment (SEA) as a singular example of a particularly comprehensive implementation scheme for commercially viable ocean energy projects.

7.1.1. Energy Governance in the EU – Starting Points

Apart from the Treaty establishing the European Atomic Energy Community (EURATOM)¹ and the former Treaty establishing the European Coal and Steel

* I must offer a most heartfelt thank you to Professors Meinhard Doelle and David VanderZwaag at Dalhousie University, Faculty of Law. Were it not for their guidance, wisdom and continued patience this project would not have been a success. Also I would like to extend my gratitude to Ms. Maria Pettersson of Luleå University of Technology for her insightful comments and contributions to this chapter.

Community,² there is a notable lack of treaty provisions in the field of energy. Although the treaty establishing the European Community obliges the EU to take the “energy measures” necessary for the achievement of such Community targets as a common market, and an economic and monetary union, it does not hold any provisions regarding the Community’s competence in energy matters. The lack of explicit Community competence in this respect is foremost due to the Member States’ unwillingness to give up sovereignty in an area of such considerable economic importance as energy supply. As a consequence, decisions affecting the use of land and water areas, such as physical planning, and decisions that significantly impact the choice of energy sources and the energy supply mix must be taken in unison.

Notwithstanding the lack of expressed competence in energy matters, it is still possible for the EU to introduce energy policy instruments via the general competence since the Treaty does not include any special provisions regarding, for example, renewable energy. The EU may thus use its general competence regarding harmonisation and environmental protection to take measures with the intention to promote an increased use of renewable energy sources.

The opportunity to direct the energy policy in the Member States via legislative measures was first used in 2001 with the adoption of the Renewables Directive. Prior to this piece of legislation, renewable energy was primarily promoted via cooperation agreements, recommendations and research support and to some extent via other environmentally related legislation, such as the energy conservation requirement that follows from the Integrated Pollution Prevention Control Directive.³ During 2000–2005, the EU established a system for emissions trading as a first step to achieving its commitments under the international climate regime. Under certain circumstances the emission trading system may promote an increased use of renewables, although the overall purpose with the system is to reduce the emissions of greenhouse gases, primarily carbon dioxide, and thus mitigate climate change. The trading system is built upon three legal regimes: the actual trading directive,⁴ which establishes

¹ *Treaty Establishing the European Atomic Energy Community* (Euratom), Rome, 25 March 1957.

² *Treaty Establishing the European Coal and Steel Community* (ECSC), Paris, 18 April 1951.

³ Council Directive 96/91 of 24 September 1996 concerning integrated pollution prevention and control.

⁴ Directive 2003/87/EC of the European Parliament and of the Council of 13 October 2003 establishing a scheme for greenhouse gas emission allowance trading within the Community, *Official Journal* 275/32 of 25 October 2003, available: <<http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2003:275:0032:0046:EN:PDF>> (retrieved 14 November 2008).

the cap-and-trade system; the “linking directive”,⁵ which links the EU trading system to the flexible mechanisms of the Kyoto Protocol; and the Registries Regulation.⁶ The extent to which the trading system may promote the use of renewables will depend on, among other things, the size of the cap.

A couple of other legal regimes have been adopted with the intention to promote the use of renewable energy sources, although they are of minor importance for the utilisation of ocean renewable energy development.⁷ Overall, there are (at least) four EU directives that have bearing on the development of ocean renewable energy and each is based on the Community’s competence in matters regarding the environment (Article 175 (1)). The EU regulatory framework for offshore renewable development is examined below.

7.2. The European Regulatory Framework

In 2007, the Commission presented an energy policy for Europe (the “energy” package) with the intention to secure energy supply and promote sustainable development.⁸ The primary drivers behind the proposal are the imminent threat of climate change, the increasing import dependency, and the rising energy prices. In view of this, the EU made several decisions, e.g., to reduce the emissions of greenhouse gases by 20 percent and that one fifth of gross

⁵ Directive 2004/101/EC of the European Parliament and of the Council of 27 October 2004 amending Directive 2003/87/EC establishing a scheme for greenhouse gas emission allowance trading within the Community, in respect of the Kyoto Protocol's project mechanisms, *Official Journal* L 338/18 of 13 November 2004, available: <<http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2004:338:0018:0023:EN:PDF>> (retrieved 14 November 2008).

⁶ Commission Regulation (EC) No 2216/2004 of 21 December 2004 for a standardised and secured system of registries pursuant to Directive 2003/87/EC of the European Parliament and of the Council, *Official Journal* L 386/1 of 29 December 2004, available: <<http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2004:386:0001:0077:EN:PDF>> (retrieved 15 November 2008).

⁷ Directive 2003/30/EC of the European Parliament and of the Council of 8 May 2003 on the promotion of the use of biofuels or other renewable fuels for transport, [2003] *Official Journal* L 123/42 of 17 May 2003, available: <http://ec.europa.eu/energy/res/legislation/doc/biofuels/en_final.pdf> (retrieved 15 November 2008); Commission of the European Communities, *Biomass Action Plan*, Communication from the Commission, COM(2005) 628 final (Brussels, 7 December 2005).

⁸ Commission of the European Communities, *An energy policy for Europe*, Communication from the Commission to the European Council and the European Parliament, COM(2007) 1 final (Brussels, 10 January 2007).

domestic consumption should stem from renewables by the year 2020.⁹ As a means to implement the energy policy, the Renewable Energy Road Map speaks in favour of policies and measures to e.g., remove administrative barriers and improve the existing legal framework to promote an increased use of renewables.

Europe's renewable energy renaissance has many longstanding public policy concerns at its foundation. Following the first oil crisis in the 1970s, Europe became astutely aware of the prevailing issue of energy security and how external energy developments may have far-reaching negative effects on European economies. Although minor strides were made to consider the issue, real progress to combat this innate vulnerability in European strategic policy was hindered early on by two key factors: complexity and cost. In the early 1980s, energy again rose to the forefront of Europe's domestic and foreign policy interests. Yet, this time it was not purely in the context of security; rather environmental protection became an ever-strengthening competing interest. As the geo-political landscape of the 1970s cooled, the price of energy began to stabilise. However, with the signing of the Vienna Convention and the Montreal Protocol,¹⁰ rising international anxiety over global greenhouse gas emission added a new dimension to the European security dynamic. In response, the European Community (EC) recognised the promotion of renewable energy sources as a new policy objective,¹¹ subsequently removing market barriers to their exploration and development.¹² The question of fossil fuel demands juxtaposing environmental protection culminated with the recognition of the problems posed by climate change and adoption of the United Nations Framework Convention on Climate Change (UNFCCC) signed at the Rio

⁹ Commission of the European Communities, *Renewable Energy Road Map. Renewable Energies in the 21st century: building a more sustainable future*, Commission Communication, COM(2006) 848 final (Brussels, 10 January 2007).

¹⁰ *Vienna Convention for the Protection of the Ozone Layer*, 22 March 1985, 1513 U.N.T.S. no.26164, (entered into force 22 September 1988), available: <<http://www.unep.org/Ozone/pdfs/viennaconvention2002.pdf>> (retrieved 15 November 2008); *Montreal Protocol on Substances that Deplete the Ozone Layer*, 16 September 1987, 1522 U.N.T.S. no. 26369, (entered into force 1 January 1989) available: <<http://www.unep.org/OZONE/pdfs/Montreal-Protocol2000.pdf>> (retrieved 15 November 2008).

¹¹ Council Resolution of 16 September 1986 concerning new Community energy policy objectives for 1995 and convergence of the policies of the Member States, *Official Journal* C 241 of 25 September 1986, available: <[http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:31986Y0925\(01\):EN:HTML](http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:31986Y0925(01):EN:HTML)> (retrieved 15 November 2008), para. 1.f.

¹² Council Recommendation of 9 June 1988 on developing the exploitation of renewable energy sources in the Community(88/349/88), *Official Journal* L 160 of 28 June 1988, available: <<http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:31988H0349:EN:HTML>> (retrieved 15 November 2008), p. 46.

Conference of 1992. At Rio, the international community established a global partnership for environmental protection and development aimed at preventing severe climatic interference.¹³ It was now readily apparent that the issues of environmental preservation and energy usage were increasingly interconnected and could not be addressed independently.

Early on, European Member States were receptive to renewable energy sources as a means to foster a secure and sustainable energy supply. Shortly after Rio, the EC implemented the ALTENER programme as a financial support mechanism to promote innovation in renewable energy sources, coupled with a modest renewable energy target of 8 percent by 2005.¹⁴ In 1995, in response to the mounting environmental, economic and technological developments, the EC put forward a reformed energy policy to adapt to the rapid progress internationally and that was aimed at increasing overall competitiveness, gaining security of supply, environmental protection,¹⁵ and working towards a 12 percent renewable energy source mix by 2010.¹⁶ Renewable energy sources were acknowledged as an avenue with immense potential, and one which should be more robustly promoted in the EU, as well as at the national level. Subsequently, the EC launched a second five-year promotion initiative – ALTENER II – with a bolstered budget and a broadened mandate,¹⁷ and granted Member States the option to give priority to installations using renewable energy sources.¹⁸ This approach allowed the EU to capitalise on the strategic gains made by the benchmark programme,

¹³ *United Nations Framework Convention on Climate Change*, 9 May 1992, 1771 U.N.T.S. no. 30822 (entered into force 21 March 1994), available: <<http://unfccc.int/resource/docs/convkp/conveng.pdf>> (retrieved 15 November 2008) [hereinafter UNFCCC].

¹⁴ Council Decision of 13 September 1993 concerning the promotion of renewable energy sources in the Community (Altener programme) (93/500/EEC), *Official Journal* L 235 of 18 September 1993, available: <<http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:31993D0500:EN:HTML>> (retrieved 15 November 2008), p. 41.

¹⁵ Commission of the European Communities. *White Paper: An Energy policy for the European Union*, Com (95) 682 (Brussels, 13 December 1995), available: <http://aei.pitt.edu/1129/01/energy_white_paper_COM_95_682.pdf> (retrieved 15 November 2008).

¹⁶ M. M. Roggenkamp, C. Redgwell, A. Rønne, and I. del Guayo, eds, *Energy Law in Europe*, 2nd edition (New York: Oxford University Press, 2007), p. 376.

¹⁷ Common Position (EC) no 9/98 adopted by the Council on 19 January 1998 with a view to adopting a Council Decision concerning a multiannual programme for the promotion of renewable energy sources in the Community (Altener II), *Official Journal* C 62 of 26 February 1998, available: <<http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:C:1998:062:0031:0037:EN:PDF>> (retrieved 15 November 2008), p. 31.

¹⁸ Directive 96/92/EC of the European Parliament and of the Council of 19 December 1996 concerning common rules for the internal market in electricity, *Official Journal* L 27 of 30 January 1997, available: <http://www.seecon.org/infrastructure/sectors/energy/documents/electricity_directive/dir96-92.pdf> (retrieved 15 November 2008), p. 25.

simultaneously empowering Member States with the requisite flexibility necessary to expand the percentage played by renewable energy sources in the national energy mix indefinitely.

Although the strategies imposed by the EU were forward looking, on-the-ground progress of renewable energy sources was more modest. Member States developed renewable energy sources to differing degrees dependent upon their economic and geographic limitations, resulting in a great disparity in levels of renewable energy source consumption and types employed across the EU. Furthermore, a lack of “qualified objectives” made it difficult to calculate the progress of the ALTENER and associated programmes.¹⁹ The signing of the Kyoto Protocol increased international pressure for a reformed policy on renewable energy sources by the EU as the emission reduction framework in place proved to be inadequate to fulfill the EU’s international obligations.²⁰ Finally, because Member States developed renewable energy sources in a fragmented fashion, the EU lacked a clear-sighted common vision for the integration of renewable energy sources into the energy mix. Consequently, the European Parliament requested a concrete legal framework addressing, e.g., proposals for grid access for renewable energy sources,²¹ continuation of current programmes, as well as setting clear binding targets for future developments.²²

¹⁹ Special Report No 17/98, on support for renewable energy sources in the shared-cost actions of the Joule-Thermie Programme and the pilot actions of the Altener Programme together with the Commission’s replies (Submitted pursuant to Article 188c(4)(2) of the EC Treaty), *Official Journal C* 356 of 20 November 1998, available: <[http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:31998Y1120\(03\):EN:HTML](http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:31998Y1120(03):EN:HTML)> (retrieved 15 November 2008), p. 39, para. 7.1.

²⁰ Commission of the European Communities, *Green Paper: Towards a European strategy for security of energy supply*, Communication from the Commission, COM (2000) 796 (Brussels, 29 November 2000), available: <http://aei.pitt.edu/1184/01/energy_supply_security_gp_COM_2000_769.pdf> (retrieved 15 November 2008).

²¹ Resolution A4-0199/98 incorporating Parliament’s recommendation to the Commission for a proposal for a European Parliament and Council Directive on the feeding in of electricity from renewable sources of energy in the European Union, *Official Journal C* 210 of 17 June 1998, available: <<http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:C:1998:210:0100:0165:EN:PDF>> (retrieved 15 November 2008), p. 143.

²² Resolution A5-0078/2000 of the European Parliament on Electricity from renewable energy sources and the internal electricity market (SEC(1999) 470 (C5-0342/1999 (2000/2002(COS))), *Official Journal C* 378 of 29 December 2000, available: <<http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:C:2000:378:0089:0095:EN:PDF>> (retrieved 15 November 2008), p. 93, para. 6.

7.2.1. The Renewables Directive

With the submission of the Renewables Directive (the so-called RES-E directive),²³ the EU took a firm stance to enhance the role played by renewables in Europe and to establish a comprehensive framework to do so.²⁴ Although many previous strides were made to foster momentum behind the use of renewable energy sources, in practice their integration into the Community energy mix was a slow process. The Renewables Directive aims to streamline and enhance the integration of renewable energy sources into the market. However, rather than trying to amalgamate the previous programmes, Member States are provided with the flexibility to implement their own unique renewable energy strategies or to experiment with various sources.²⁵ Functionally, the Directive accomplishes four key goals: (i) outlining key definitions; (ii) designing a complex reporting mechanism; (iii) designating the administrative requirements of Member States; and (iv) setting a bolstered renewable energy consumption target for the Community. Each of these goals must be assessed in more detail to clearly define the new energy framework in place for the Community and to truly appreciate the energy vision of the EU.

7.2.1.1. Definitions

The Renewables Directive outlines four key definitions in Article 2. Of most relevance, “renewable energy sources” is given a broad and expansive definition, and valid sources are enumerated. Most notably, both wave and tidal energy systems are encompassed as eligible sources,²⁶ opening the door for future work on marine renewable energy development. Article 2 also defines “biomass” as biodegradable products, “consumption” as gross national energy usage, and “energy produced from renewable sources” as energy produced from purely renewable plants as well as hybrid plants (both renewable and non-renewable). While the first two definitions are straightforward, the definition of

²³ Directive 2001/77/EC of the European Parliament and of the Council 27 September 2001 on the promotion of electricity produced from renewable energy sources in the internal market, *Official Journal* L 283/33 of 27 October 2001, available: <http://eur-lex.europa.eu/pri/en/oj/dat/2001/l_283/l_28320011027en00330040.pdf> (retrieved 15 November 2008) [hereinafter Renewables Directive].

²⁴ Roggenkamp, n. 16 above, p. 377.

²⁵ *Id.*

²⁶ Renewables Directive, n. 23 above, Article 2(a), eligible sources are defined as “renewable non-fossil energy sources (wind, solar, geothermal, wave, tidal, hydropower, biomass, landfill gas, sewage treatment plant gas and biogases).”

energy produced from renewables has a key point. It is possible to use a hybrid plant as a start-up to a full scale renewable plant. This provides a transitional strategy for energy producers and opens the door for smaller scale or more localised projects, and lowers the economic burden on producers at the onset of a project.

7.2.1.2. Reporting Mechanism

A very important contribution made by the Renewables Directive is the design and implementation of a complex reporting mechanism for both the EU and Member States which has numerous requirements. First, Member States are obliged adopt and publish a report outlining domestic consumption targets for renewable energy sources over the next decade. Member States are also to conduct a review and re-evaluation of these targets every five years, with the caveat that they must be consistent with the targets outlined in the Annex, as well as those agreed upon under the Kyoto Protocol.²⁷

Second, Member States are to publish a report analysing the progress made towards meeting national targets, the reliability of the “guarantee of origin” system,²⁸ and whether or not this progress is in line with national commitments. Moreover, progress is to be re-evaluated and republished on two-year review cycles.²⁹ Third, the Commission must publish a report assessing the progress made in terms of both domestic as well as Community renewable energy consumption targets. The Commission report may be accompanied by policy proposals to the European Parliament or revised targets where necessary.³⁰

Forth, the Commission shall evaluate the role played by support schemes, their cost-effectiveness, and their success in achieving national targets.³¹ Fifth, Member States are obliged to publish a report assessing both the devices used to ensure and expand grid access,³² as well as the existing legislative and regulatory mechanisms in place, with an aim to reducing barriers to increased renewable energy production, streamlining administrative procedures, and ensuring transparency and non-discriminatory behaviour towards renewable energy sources.³³ Finally, based on the previous reports submitted by Member

²⁷ Id., Article 3(2).

²⁸ Id., Article 5(5).

²⁹ Id., Article 3(3).

³⁰ Id., Article 3(4).

³¹ Id., Article 4(2).

³² Id., Article 7(7).

³³ Id., Article 6(2).

States, the Commission will publish a summary report every five years with the first being no later than 31 December 2005, on the implementation of the Directive. This report will also consider the success of the guarantee system,³⁴ the efficacy of current administrative procedures with a view to disseminating best practices,³⁵ the progress made towards achieving national and Community targets, the external costs of non-renewable energy sources, and, if necessary, it may make proposals to the European Parliament.³⁶ In the end, the Renewables Directive includes a total of ten reporting requirements.³⁷ The comprehensiveness of the reporting mechanism clearly demonstrates the importance of the renewable energy policy objective and the dedication to accomplishment embodied by the EU.

7.2.1.3. Administrative Requirements

Member States are required to take “appropriate steps” to foster greater use of renewables, and progress must be proportional to the committed targets found in the Annex.³⁸ Fundamentally, these steps come in the form of complementary initiatives, such as support schemes (Article 4), guarantees of origin (Article 5), administrative and planning procedures (Article 6), and grid system issues (Article 7). Each of these four steps is discussed individually.

1. Support Schemes

Even with the cost of renewable energy source electricity dropping, due to both technological and economic advances, the overall expenditure associated with renewable energy production is still very high and is expected to remain as such in the medium term. Support schemes are an indispensable tool to make renewable energy source electricity affordable for consumers. Functionally, they come in four broad forms (although there are hybrid models in use) and are used to differing degrees across the EU.

First, feed-in tariffs are used by most Member States and, generally speaking, are a tax paid by electricity companies and distributors to domestic renewable energy source electricity producers. This additional capital assists in

³⁴ Id., Article 5(6).

³⁵ Id., Article 6(3).

³⁶ Id., Article 8.

³⁷ P. Bertoldi, R. Bowie, P. Hodson, J. Lorentzen, H.V. Malvik, and A. Toth (contributors) and L. Werring (editor), *EU Energy Law, Vol. III, EU Environmental Law: Energy Efficiency and Renewable Energy Sources* (Leuven, Belgium: Claeys & Casteels, 2006), p. 61.

³⁸ Renewables Directive, n. 23 above, Article 3(1).

offsetting the high cost of renewable energy sources, and ensures a moderate price for consumers. The primary advantages of such a programme are security of investment, flexibility in application, and support for medium- and long-term technological cost reduction. However, because each Member State has different internal economic factors to consider prior to implementation of a feed-in tariff, they inevitably are extremely complex to harmonise at the Community level.³⁹

Second, the tradable green certificate system, admittedly not as widespread in terms of use,⁴⁰ has many positive attributes. As a more market-based initiative, green certificates' help to offset the added cost of renewable electricity production by requiring consumers (and some producers depending upon the country) to purchase a specified number of certificates ensuring both consumption and production of renewable electricity. Certificates are purchased on a secondary market between consumers and producers, which ensures the highest possible return for investment with non-compliance punished via fine. However, the volatility of such a programme poses a deterrent to potential investors and does little to drive-down either technological or service prices.⁴¹

Third, a pure-tendering procedure,⁴² the use of which was originally limited and is currently on the decline, is one where the state procures tenders for the production of renewable electricity, which is then provided to consumers at the price outlined by the provider in the tender. The theoretical advantage to such a system is the optimal use of market forces to provide the lowest price to consumers. However, in practical terms the tendering procedure might hinder advancement rather than drive it. Since the increased production cost is shouldered by the end-use consumer, there is little market force to drive down overall costs of renewable energy technology, and projects may hence fail due to uncompetitive bidding.⁴³

Finally, tax incentives are used to encourage more widespread use of renewables but are generally seen as an additional policy tool rather than a stand-alone strategy.⁴⁴ Realistically, Member States tend to use a complex combination of the above programmes based on the internal needs of both the market and their citizens.

³⁹ Bertoldi et al., n. 37 above, p. 29.

⁴⁰ Id., currently used in Sweden, United Kingdom, Italy, Belgium and Poland.

⁴¹ Id., p. 30.

⁴² Id., currently used in only Ireland and France, with both jurisdictions having recently indicated a shift to a feed-in/green certificate hybrid model.

⁴³ Id.

⁴⁴ Id., currently in use only by Malta and Finland, with Cyprus, the United Kingdom and Czech Republic viewing them simply as a complementary policy tool.

2. Guarantee of Origin

One of the primary necessities of a renewable energy programme is the ability to differentiate unequivocally between renewable and non-renewable forms of electricity within the same market. Consumers have become increasingly interested in their ecological impact and are turning to renewables as one avenue to limit that impact even if they are more costly. However, if consumers are going to pay a premium for a green energy source, there must be administrative oversight to insure accuracy. Member States are granted full freedom to design their own domestic certification process barring that the procedure is accurate, transparent and non-discriminatory.⁴⁵

Although the procedural elements are in the hands of the Member State and thus will differ marginally across the EU, the substantive criteria for a “guarantee of origin” are expected to be identical EU wide. A guarantee of origin should outline the type of energy source used, the date(s) and location(s) production occurred, and provide consumers with an assurance of authenticity.⁴⁶ Furthermore, guarantees of origin are expected to be mutually respected by other Member States, although refusal of recognition is acceptable as long as it is based on objective, transparent and non-discriminatory criteria.⁴⁷ In practical terms, a guarantee of origin is going to be recognised across the Community.⁴⁸ Finally, Member States are expected to designate to a competent body with oversight of the guarantee process to ensure accuracy, accountability, and reliability.⁴⁹

3. Administrative and Planning Procedures

A major impediment to the wide scale development of renewable energy is the administrative barriers that must be satisfied by potential producers.⁵⁰ As such, Member States are to designate to a competent body with the power to evaluate the current legislative and regulatory framework. The goal is to remove unnecessary regulatory and non-regulatory barriers to renewable electricity production, streamline existing administrative measures, and ensure that rules are objective, transparent and non-discriminatory.⁵¹ Although it seems wise to have common administrative criteria across the EU, in practice, flexibility is

⁴⁵ Renewables Directive, n. 23 above, Article 5(1).

⁴⁶ *Id.*, Article 5(3).

⁴⁷ *Id.*, Article 5(4).

⁴⁸ Bertoldi et al., n. 37 above, p. 49.

⁴⁹ Renewables Directive, n. 23 above, Article 5(5).

⁵⁰ Bertoldi et al., n. 37 above, p. 52.

⁵¹ Renewables Directive, n. 23 above, Article 6(1).

necessary. Furthermore, Member States are expected to coordinate the varying administrative organs addressing renewable energy development domestically⁵² because renewable energy projects typically fall under multiple and overlapping heads of power.

4. Grid System Issues

Producers of renewable electricity, often because of their small size and relative vulnerability, must be assured that the energy produced can be incorporated into the national grid effectively. Thus, Member States are expected to require domestic transmission system operators (TSO) and distribution system operators (DSO) to give priority grid access to installations producing electricity from renewable energy sources.⁵³ Member States must also require TSOs and DSOs to establish and publish objective rules on grid adaptation and connection costs (cost-bearing),⁵⁴ to provide new producers with a thorough estimate of the costs of grid connection,⁵⁵ and to create and publish a set of standard rules for cost sharing among beneficiaries in relation to system installation and grid upgrades (cost-sharing).⁵⁶ The rationale for these points stems from the localised and often rural nature of renewable electricity production.

Generally speaking, electricity grids were created during the era of state-owned enterprises frequently left rural areas without the infrastructure necessary to transmit or connect to a national grid.⁵⁷ In many cases, these infrastructure modernisation costs are shared among the parties, however, in some cases, Member States may require TSOs and DSOs to shoulder the full cost of adaptation.⁵⁸ Regardless, grid system connection costs are required to only reflect the reasonable cost of the benefit of connection and must not be unduly prohibitive to the integration of renewable energy.⁵⁹ Undoubtedly this is, and will continue to be, an issue of importance as the production of renewable energy increases.

⁵² *Id.*, Article 6(2).

⁵³ *Id.*, Article 7(1).

⁵⁴ *Id.*, Article 7(2).

⁵⁵ *Id.*, Article 7(4).

⁵⁶ *Id.*, Article 7(5).

⁵⁷ Bertoldi et al., n. 37 above, p. 37.

⁵⁸ Renewables Directive, n. 23 above, Article 7(3).

⁵⁹ *Id.*, Article 7(6).

7.2.1.4. Renewable Electricity Consumption Targets

If the reporting element of the Renewables Directive is considered to be one of its most vital contributions, the bolstered renewable electricity consumption target is the most indispensable. Member States agreed upon individual *indicative* consumption targets which are, in many cases, quite progressive. However, they also vary greatly due to geographic and economic differences. For instance, Belgium has rather limited sources of renewable energies and thus its target is very low, 6 percent renewable electricity consumption by 2010.⁶⁰ Others, for instance Austria or Sweden, have a surplus and thus have considerably higher targets (78 and 60 percent respectively).⁶¹ If the Member States meet their national targets, 21 percent of total electricity consumption in the EU will be produced by renewable energy sources by 2010.

Although some Member States are heading in the right direction, the majority of countries are behind schedule. In the present situation, the EU will only manage to produce 19 percent of its electricity from renewables in 2010. Hence, to accomplish its goals, additional efforts might be required.⁶²

7.2.1.5. Discussion

In view of the fact that Member States are unlikely to achieve the sectoral targets for renewable electricity consumption proposed in the Renewables Directive, in many respects, the Directive can be considered a policy failure.⁶³ The shortcomings have varying explanations. First, although the cost of renewable energy technologies are on the decline, the inability to internalise the external costs of renewable energy sources into the market price of renewable electricity has negatively affected short-term funding options, in turn giving non-renewable sources a competitive edge in short-term affordability.⁶⁴ Bearing in mind the decentralised character of renewable energy applications, a second

⁶⁰ Id., Annex.

⁶¹ Id.

⁶² Commission of the European Communities, *Renewable Energy Road Map: Renewable energies in the 21st century: building a more sustainable future*, Commission Communication, COM (2006) 848 final (Brussels, 10 January 2007), available: <http://ec.europa.eu/energy/energy_policy/doc/03_renewable_energy_roadmap_en.pdf> (retrieved 16 November 2008).

⁶³ Roggenkamp, n. 16 above, p. 382.

⁶⁴ Commission of the European Communities, *Green Paper: A European Strategy for Sustainable, Competitive and Secure Energy*, Communication from the Commission, COM (2006) 105 (Brussels, 8 March 2006), available: <http://ec.europa.eu/energy/green-paper-energy/doc/2006_03_08_gp_document_en.pdf> (retrieved 16 November 2008), p. 4.

practical consideration is the difficulty of streamlining various administrative processes. Proponents of renewable electricity projects have run up against opaque authorisation procedures, varying certification standards, and incompatible certification and testing regimes.⁶⁵ This reality prompted the European Council to request a “coherent framework” based on a new directive to increase the renewable energy capacity.⁶⁶

In response, a second renewables directive was proposed for consideration in early 2008.⁶⁷ At its basis is a binding target of 20 percent renewable energy source electricity and a 10 percent binding target for biofuels in the transportation sector.⁶⁸ Moreover, the Renewables Directive II aims to address many of the practical considerations brought to the forefront through consultations with relevant stakeholders and the EU Strategic Energy Review. First, it requires all Member States to have a “National Action Plan” that sets out renewable energy policy targets in various sectors and outlines national policies aimed at fulfilling those requirements.⁶⁹ Second, it aims to standardise and expand the use of the guarantee of origin regime.⁷⁰ At current, guarantees of origin are used by Member States for differing reasons, be it disclosure, recommended practices or to qualify for a national support scheme.⁷¹ A guarantee of origin will now, beyond specifying the source, date of and authenticity of production, require a host of new information, including the location, type, capacity, and operational date of the installation, the country of issue, and the amount and type of investment aid granted to the installation.⁷² Furthermore, guarantees of origin are to be recognised across the Community,⁷³

⁶⁵ Id.

⁶⁶ Council Directive 96/91 of 24 September 1996 concerning integrated pollution prevention and control, *Presidential Conclusions, Council of the European Union*, 9 March 2007 doc. 7224/07, available: <<http://register.consilium.europa.eu/pdf/en/07/st07/st07224.en07.pdf>> (retrieved 16 November 2008), Annex 1, point 7.

⁶⁷ Proposal for a Directive for the European Parliament and of the Council on the promotion of the use of energy from renewable sources, COM (2008) 19 of 23 January 2008, available: <<http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=COM:2008:0019:FIN:EN:PDF>> (retrieved 16 November 2008), [hereinafter Renewables Directive II], p. 2.

⁶⁸ Id.

⁶⁹ Id., Article 4(1)

⁷⁰ Commission of the European Communities, *Impact Assessment on Directive for the European Parliament and of the Council on the promotion of the use of energy from renewable sources*, Commission Staff Working Document, SEC(2008) (Brussels, 23 January 2008), available: <http://ec.europa.eu/energy/climate_actions/doc/2008_res_ia_en.pdf> (retrieved 16 November 2008), p. 12.

⁷¹ Id.

⁷² Renewables Directive II, n. 67 above, Article 4(2 a-e).

⁷³ Id., Article 4(3).

registered domestically with a competent body,⁷⁴ and fully transferable among Member States provided the transferor has achieved their immediate targets.⁷⁵

Third, administrative procedures are to be clarified and streamlined by having licensing procedures clearly defined and certification criteria determined objectively, clear guidelines established for inter-administrative cooperation, and a fast-track procedure for smaller projects.⁷⁶ Furthermore, local and regional councils are to consider renewable energy development when planning, designing and refurbishing both industrial and residential areas.⁷⁷ Fourth, Member States are to provide to builders, planners, installers and architects information on support measures for renewable energy.⁷⁸ Member States are also required to ensure that the cost and energy efficiency of equipment is made available by suppliers and to develop a certification programme for installers of small-scale projects.⁷⁹ Finally, Member States are expected to develop infrastructure and to grant priority access for further expansion of renewable electricity production.⁸⁰

A few important caveats must be noted at this juncture. Firstly, there are notable shortcomings in this directive. Most glaring, despite having binding targets for 2020, the proposed directive does not have binding targets in the interim, nor does it set out penalties for failure to reach these targets.⁸¹ Furthermore, because it is a directive and not a regulation, it is subject to national implementation, thus leaving immense room for variations of policies particularly regarding priority grid access.⁸² In this context, it is important to point to the EU's lack of competence in certain matters strongly related to the development of renewable energy, in particular regarding land use and planning, which are vital areas for the implementation of all kinds of renewable energy installations. The Member States' discretion is thus extensive and it is possible that, for example, planning regimes will function as barriers to the achievement of these targets.

Secondly, even if this proposed directive passes the complex approval process in the EU, this is clearly not the last of the directives aimed at

⁷⁴ Id., Article 7.

⁷⁵ Id., Article 9(1-2)

⁷⁶ Id., Article 12(1).

⁷⁷ Id., Article 12(3).

⁷⁸ Id., Article 13(1).

⁷⁹ Id., Article 13(2-4).

⁸⁰ Id., Article 14 (1-2).

⁸¹ D. Hendricks, "Directive sets the EU pathway," *Refocus* 9 (January–February 2008), available: <<http://www.renewableenergyfocus.com/articles/general/features/EU%20pathway/EUpathway.html>> (retrieved 10 November 2008), pp. 1–2.

⁸² Id.

promoting renewable energy in the EU. The consolidation of the internal market is still a process under construction,⁸³ and this package should be viewed no differently. Realistically, it should be considered as a step in the right direction and a demonstration of Europe's clear intention to use renewable energy source as a principle policy tool to achieving both energy security and environmental protection.

However, whether it is progressive environmentalism or enlightened self-interest as its basis, the EU has clearly forged a new direction for the energy sector. Renewable energy sources have an immense potential to positively contribute to Europe's strategic as well as environmental concerns, provided that the market climate is welcoming to their arrival. Responding to a decade of fragmented progress in the renewable energy sector, the Renewables Directive has taken Europe in a new direction by attempting to craft the ideal market conditions for renewable energy development. Although much in this Directive may be commended, such as the monitoring, support and reporting initiatives, progress has not been made at the pace expected.

A revamped and more robust renewable energy policy has been submitted to the European Parliament for its consideration. This proposal sets out additional monitoring and reporting requirements, as well as an increased renewable electricity consumption targets. However, it is lacking in terms of consumption targets or penalties for failing to reach the prescribed targets. This is a notable shortcoming, and one that will surely need to be resolved if the pace of renewable energy development is to quicken.

7.3. Regulatory Frameworks in the Member States

To reiterate, the EU Member States have considerable room to design their own energy policy. In the absence of Community legislation and in the wake of energy crises and environmental concerns, many Member States have taken the matter into their own hands and introduced legal and economic instruments aiming to diversify energy supply and increase the use of renewable energy sources. Some of the most prominent countries in this respect are Denmark, Germany and Spain, who had in place specific renewable energy legislation early on. The initiatives have grown over time, but the overall picture is still

⁸³ Roggenkamp, n. 16 above, p. 391.

shattered; some countries have a complete institutional framework in place for the energy sector, whereas others are a bit behind in this respect.⁸⁴

It is thus clear that the European Member States have, and will continue to play an indispensable role in transitioning the renewable energy policy from the EU blackboard to the boardroom. Although widespread goals are deliberated at the Community level, it is in the hands of the Member States that they gain their unique characteristics. And the Member States have indeed approached the renewable question with much diversity and employed varying strategies and initiatives dependent upon geographic, economic and social limitations. Of the renewable energy sources explored, ocean-based renewable energy systems are of particular importance to the question of ocean governance. This section focuses on initiatives taken by various Member States to expand the role played by ocean renewables in their respective jurisdictions. Eight states have been selected due to their advances in marine renewable energy sources, with each assessment focusing on the promotion of resources and regulatory framework for ocean-based renewable energy. Although each Member State confronts the subject matter differently, cumulatively many creative programmes have been implemented and much can be gained from a comparative analysis.

7.3.1. Belgium

Although little has transpired practically, in terms of extracting the potential of marine renewables in Belgium's North Sea, it is nevertheless an important policy objective. Belgium has a renewable electricity target of 6 percent by 2010⁸⁵ and a proposed target of 13 percent by 2020.⁸⁶ As of yet, only 2.2 percent of electricity consumption comes from renewable sources.⁸⁷

Previous attention has been focussed predominantly on the use of hydro and biomass (biogas, biowaste and sold biomass) but ocean-based renewables, particularly wave energy, is an ever-growing area of focus. Belgium employs a programme using tradable green certificates (TGC), with a guaranteed

⁸⁴ An important aspect regarding legal instruments put in place by Member States is that they must not under any circumstance be contrary to Treaty rules. Particularly relevant in the context of policy instruments to support renewable energy production are the Community rules regarding state support (Art. 87) and the free movement of goods (Art. 28). See e.g., *Case C-379/98 – PreussenElectra* (2001).

⁸⁵ Renewables Directive, n. 23 above, Annex.

⁸⁶ Renewables Directive II, n. 67 above, Annex I.

⁸⁷ Id.

minimum price set for electricity produced from renewables, to promote ocean-based renewable energy sources.⁸⁸ However, the TGC market is rather small and generally allows only cost-effective technologies to thrive, which is a worry, although market conditions are considered acceptable for continued expansion.⁸⁹

On 17 May 2004, Belgium passed a royal decree empowering the Minister of Energy with the ability to provide “domain concessions” for the creation and investigation of potential installations for offshore renewable energy such as wind and water. The decree is valid both for the territorial waters and the exclusive economic zone.⁹⁰ Belgium thus has a designated zone for the location of renewable energy installations, as well as a specific regime outlining criteria for eligibility and a procedure for the granting of concessions. Belgium also has in place an research and development initiative for ocean renewable energy sources called the Sustainable Economically Energy Efficient Wave Converter (SEEWEC) that aims to integrate the commercial manufacturing of wave technologies into the market.⁹¹ Overall, Belgium may not have an abundance of ocean-based renewable resources, but they are taking focused strides to engage what resources they do have.

7.3.2. Denmark

Stemming from a change in the political character of the Danish government in early 2001, many of the progressive renewable energy initiatives undertaken in the 1990s were either abolished or allowed to run their course without renewal.⁹² Though this political chill has seemingly subsided, the Danish wave energy development programme has nevertheless not been reinstated, and no formal development plan has been designed to replace it.⁹³ Denmark has

⁸⁸ Commission of the European Communities, *The share of renewable energy in the EU: County Profiles, Overview of Renewable Energy Sources in the Enlarge European Union*, Commission Staff Working Document, SEC(2004) 547 (Brussels, 26 May 2004), available: <http://ec.europa.eu/energy/res/legislation/country_profiles/2004_0547_sec_country_profiles_en.pdf> (retrieved 10 November 2008), p. 14; see Bertoldi et al., n. 37 above, p. 31.

⁸⁹ Bertoldi et al., n. 37 above.

⁹⁰ International Energy Agency (IEA), *Implementing Agreement on Ocean Energy Systems Annual Report 2007* (IEA-OES Executive Committee, 2007), available: <http://www.iea-oceans.org/_fich/6/IEA-OES_Annual_Report_2007.pdf> (retrieved 10 November 2008) [hereinafter IEA], p. 34.

⁹¹ Id.

⁹² Commission of the European Communities, n. 88 above, p. 20.

⁹³ IEA, n. 90 above, p. 41.

a renewable electricity target of 29 percent by 2010⁹⁴ and a proposed target of by 30 percent 2020.⁹⁵ Currently, 17 percent of electricity consumption comes from renewable sources.⁹⁶ Regardless of the political climate, renewables still play a crucial role in the Danish energy mix.

Wind energy is the most widely used renewable energy source, accounting for 18.5 percent of the total 28.5 percent renewable electricity produced domestically.⁹⁷ Ocean-based renewables are still only in the developmental phase, with most of the work being done by private developers. Denmark uses primarily a feed-in tariff system, coupled with a tendering programme for offshore wind projects. However, the current feed-in tariffs are ineffectual at procuring investment, and broad policy reform has been slow coming.⁹⁸

In 2007, Denmark reaffirmed its determination to double its production of renewable electricity production by 2020.⁹⁹ This was followed in 2008 by a policy statement put out by the Minister of Climate and Energy proposing a new “Renewable Energy Act.”¹⁰⁰ While ocean-based renewable energy sources are not the primary focus of this legislation, which mainly concentrates on wind and biomass, marine renewables will most surely be incorporated once they have passed the development phase.

7.3.3. France

The French are uniquely situated geographically, with a favourable wave climate on their Atlantic coast near the Bay of Biscay, and an equally favourable tidal climate in the Mediterranean basin. France has a renewable electricity target of 21 percent by 2010¹⁰¹ and a proposed target of 23 percent

⁹⁴ Renewables Directive, n. 23 above, Annex.

⁹⁵ Renewables Directive II, n. 67 above, Annex I.

⁹⁶ Id.

⁹⁷ Roggenkamp, n. 16 above, p. 509.

⁹⁸ Commission of the European Communities, n. 88 above, p.20.

⁹⁹ Danish Energy Authority, *A visionary Danish energy policy 2025* (January 2007), available: <http://www.ens.dk/graphics/Publikationer/Energipolitik_UK/Engelsk_endelig_udgave_visionaer_energipolitikA4.pdf> (retrieved 16 November 2008).

¹⁰⁰ Danish Energy Authority, *Energy Policy Statement 2008: The report of the minister of climate and energy pursuant to the Danish Act on Energy Policy Measures* (November 2008), available: <http://www.ens.dk/graphics/Publikationer/Energipolitik_UK/Energipolitisk_redegorelse_2008_eng.pdf> (retrieved 16 November 2008), p. 8.

¹⁰¹ Renewables Directive, n. 23 above, Annex.

by 2020.¹⁰² Renewable electricity currently accounts for only 10.3 percent of the total French electricity consumption,¹⁰³ with hydro the primary contributor.¹⁰⁴

Although the use of hydro electricity is disproportionately high, ocean-based renewables are quickly gaining recognition. France uses a pure feed-in tariff system for power plants with a capacity greater than 12 megawatts and a tendering procedure for smaller plants.¹⁰⁵ As of March 2007, France also has set a 15 c€/KWh feed-in tariff rate for electricity produced from waves. While administrative barriers still persist to the integration of renewable energy sources, investment in France has been constant and could be maximised if these roadblocks were addressed.¹⁰⁶

France has also set up a test installation for wave energy production in the Pays de la Loire region on the Atlantic coast. With solidified funding secured in 2007, the facility is expected to be operational by 2010.¹⁰⁷ Although current wave and tidal projects are still in the research and development phase, the French government clearly has planned a role for ocean-based renewable energy sources to play in the country's energy mix.

7.3.4. Ireland

Based on its prime geographic location, Ireland has one of – if not the highest – proposed return from ocean-based renewable energy sources. Ireland has a renewable electricity target of 13.2 percent by 2010¹⁰⁸ and a proposed target of 16 percent by 2020.¹⁰⁹ Presently, however, only around 3.1 percent of consumed electricity is however generated from renewable energy sources.¹¹⁰

The development of Ireland's ocean energy potential has been identified as a top priority area. A long-term multiphase initiative was launched in 2006, with the goal of large-scale commercial electricity production in, or around,

¹⁰² Renewables Directive II, n. 67 above, Annex I.

¹⁰³ *Id.*

¹⁰⁴ Commission of the European Communities, n. 88 above, p. 33.

¹⁰⁵ *Id.*; Bertoldi et al., n. 37 above, p. 32.

¹⁰⁶ IEA, n. 90 above, p. 44.

¹⁰⁷ *Id.*

¹⁰⁸ Renewables Directive, n. 23 above, Annex.

¹⁰⁹ Renewables Directive II, n. 67 above, Annex I.

¹¹⁰ *Id.*

2015.¹¹¹ Ireland previously used a tendering mechanism for the development of renewable energy sources but is set to replace this with a feed-in scheme in the near future.¹¹² These recent developments will surely assist in the expansion of marine renewable energy sources in Ireland in the future.

In March 2007, the Irish government reaffirmed its intentions to become a world leader in ocean-based renewables by proposing a target of 500 MW installed production capacity by 2020.¹¹³ Furthermore, with a specific national agency in charge of research and development (Sustainable Energy Ireland), numerous institutional development programmes and a support programme for scholarly research into ocean energy utilisation put in place by the Minister for Communications, Marine & Natural Resources,¹¹⁴ Ireland is keenly poised to capitalise on its wealth of ocean renewable energy.

7.3.5. Portugal

With almost half of the country bordered by the North Atlantic, Portugal is another Member State with immense ocean-based renewable potential of which they are moving quickly to capitalise upon. Portugal has a renewable electricity target of 39 percent by 2010¹¹⁵ and a projected target of at least 31 percent by 2020.¹¹⁶ Currently, 20.5 percent of all electricity consumed is from renewable energy sources,¹¹⁷ with small-scale hydro being the primary contributor.¹¹⁸

Although in the past the tremendous success of hydro gave Portugal great optimism, with much of the current market still dominated by hydro, that

¹¹¹ Sustainable Energy Ireland, *Ocean Energy Strategy: Ocean Energy in Ireland* (Department of Communications, Marine and Natural Resources Ireland, 2005), available: <http://www.sei.ie/getFile.asp?FC_ID=1747&docID=1065> (retrieved 16 November 2008).

¹¹² Bertoldi et al., n. 37 above, p. 32.

¹¹³ Government of Ireland, Department of Communications, Marine and Natural Resources Ireland, *White Paper: Delivering a Sustainable Energy Future for Ireland* (2007), available: <<http://www.dcenr.gov.ie/NR/rdonlyres/54C78A1E-4E96-4E28-A77A-3226220DF2FC/27356/EnergyWhitePaper12March2007.pdf>> (retrieved 16 November 2008), p. 36.

¹¹⁴ Government of Ireland, Department of Communications, Marine and Natural Resources Ireland, "Minister Noel Dempsey Launches Charles Parsons Energy Research Awards: An Innovative New Research Funding Scheme," *Press Release* (28 September 2006), available: <<http://www.dcenr.gov.ie/Press+Releases/Minister+Noel+Dempsey+Launches+Charles+Parsons+Energy+Research+Awards.htm>> (retrieved 16 November 2008).

¹¹⁵ Renewables Directive, n. 23 above, Annex.

¹¹⁶ Renewables Directive II, n. 67 above, Annex I.

¹¹⁷ *Id.*

¹¹⁸ Commission of the European Communities, n. 88 above, p. 85.

optimism has been turned into pragmatism as Portugal aims to extract renewable resources more effectively. Portugal uses a feed-in tariff programme with a fluctuating rate of 76–191 €/MWh for wave energy dependent upon if it is pre-commercial or not.¹¹⁹ This is coupled with specific investment incentives, for example the investment subsidy programme PRIME,¹²⁰ aimed at maximising the expansion of their renewable energy sector. The stability of the support programme for renewable energy sources in Portugal provides security for potential investors. However, complex licensing requirements have hampered the development of renewable energy.

Portugal has made the expansion of their renewable energy sector a prime policy goal with the passing of Resolution No. 169/2005.¹²¹ The resolution outlines additional consumption targets, particularly for wind. The resolution also reinforces the target of 50 megawatts installed capacity by 2013 for renewable electricity produced from waves, originally set in place by Resolution No. 63/2003.¹²² Furthermore, Decree-Law No. 90/2006 established a new framework for the allocation of costs between providers of conventional versus renewable energy sources.¹²³ More practically, Order-in-Council No 736-A/2006 provided for the installation of the world's first wave power plant (capacity 4MW) in public waters off the coast of Aguçadoura.¹²⁴ With the establishment of a pilot zone in 2008, and a high level of both public and private support for, and development of, ocean-based renewable energy programmes, Portugal is primed to capitalise on its immense geographic potential.¹²⁵

¹¹⁹ Portugal's feed-in rate is variable dependent upon the size of the installation, its production capacity, and if it is for commercial sale. See Permanent Representative of Portugal to the European Union, *Third report on progress towards achieving the indicative targets for electricity production from renewable energy sources in Portugal* (TREN/2007/2895) (Brussels, 29 October 2007), available: <http://ec.europa.eu/energy/res/legislation/doc/electricity/member_states/2006/portugal_en.pdf> (retrieved 16 November 2008), p. 6.

¹²⁰ K.-D. Heer and O. Langniß, *Promoting Renewable Energy Sources in Portugal: Possible Implications for China* (Centre for Solar Energy and Hydrogen Research, June 2007), available: <<http://www.resource-solutions.org/lib/librarypdfs/Heer.and.Lagniss.Portugal.Study.pdf>> (retrieved 16 November 2008), p. 6.

¹²¹ Government of Portugal, Energy Services Regulatory Authority, *Annual Report to the European Commission* (2007), available: <http://www.erse.pt/NR/rdonlyres/796098AC-54CF-4518-984D-4BF5D6B36A34/0/Relat%C3%B3rioCE_vers%C3%A3oinglesa.pdf> (retrieved 16 November 2008), p. 13.

¹²² Heer and Langniß, n. 120 above, p. 5.

¹²³ Government of Portugal, n. 115 above, p. 16.

¹²⁴ Permanent Representative of Portugal to the European Union, n. 119 above, p. 5.

¹²⁵ Decree Law No. 5/2008, in force 8 January 2008, available: <<http://www.dre.pt/pdf1sdipl/2008/01/00500/0016800179.PDF>> (in Portuguese) (retrieved 20 April 2009); English summary available at OECD/IEA Global Renewable Energy Policies and Measures Database:

7.3.6. Spain

Geographically speaking, Spain has a tremendous location to explore renewable energy sources, particularly ocean-based sources as over two thirds of the country borders water. Spain has a renewable electricity target of 29.4 percent by 2010¹²⁶ and a proposed consumption target of 20 percent by 2020.¹²⁷ At present, only 8.7 percent of the electricity consumed comes from renewable energy sources,¹²⁸ with hydro and wind the most dominant sources.¹²⁹

With hydro reaching the cusp of its potential, the Spanish government has begun to expand the role of other renewables, including wave and tidal. Spain uses a feed-in tariff programme where producers may choose between the tariff rate, and placing a premium on top of the cost of conventional electricity for sale.¹³⁰ Coupled with other incentive programmes (soft loans, tax incentives, etc.), investors have a broad array of programmes to utilise. This diversity has provided a great atmosphere for investment, however, if feed-in tariffs are reduced, the growth in capacity could dissipate.

A comprehensive promotion programme for renewable energy sources was introduced in 1997 as a part of the *Electricity Sectoral Act* (ESA).¹³¹ Under the ESA, a special regime for renewable energy production and remuneration was created. However, it took until 2004 for the practicalities of how this framework would operate to be worked out and implemented.¹³² The system has been amended numerous times, most recently by Royal Decree 661/2007, which set in place a hybrid feed-in tariff system for ocean power. Specifically, it sets a general tariff of 6.86 c€/KWh for the first two decades, descending to 6.51 c€/KWh thereafter. However, producers also have the ability to negotiate a specific tariff rate for their installation.¹³³ The Spanish government has also installed a simplified authorisation procedure for marine installations.¹³⁴ Spain does not, as of yet, have binding consumption targets for ocean-based

<<http://www.iea.org/textbase/pm/?mode=re&id=4249&action=detail>> (accessed 20 April 2009).

¹²⁶ Renewables Directive, n. 23 above, Annex.

¹²⁷ Renewables Directive II, n. 67 above, Annex I.

¹²⁸ Id.

¹²⁹ Commission of the European Communities, n. 88 above, p. 98.

¹³⁰ Bertoldi et al., n. 37 above, p. 33.

¹³¹ World Future Council, *Legal analysis on Spain* (2007) available: <http://onlinepact.org/fileadmin/user_upload/PACT/Laws/spain_legal_analysis.pdf> (retrieved 16 November 2008).

¹³² Roggenkamp, n. 16 above, p. 1157; see Royal Decree No. 436 of 12 March 2004.

¹³³ IEA, n. 90 above, p. 66.

¹³⁴ Id.; See Royal Decree No. 1028/2007 of 20 July 2007.

renewable electricity, but the existing legislative framework still seems to provide a stable landscape for investment and development.

7.3.7. Sweden

Although Sweden has only a marginal potential for wide-scale employment of ocean-based renewable energy systems, based on the research initiatives currently underway, the Swedish government considers the exploration of all available renewable energy sources a priority. Sweden initially set a renewable electricity target of 60 percent by 2010¹³⁵ and a proposed revised target of 49 percent by 2020.¹³⁶ Renewable electricity consumption currently accounts for 39.8 percent of the national total; the highest percentage in the EU.¹³⁷ The renewable energy market in Sweden is dominated by hydropower, which accounts for almost half of electricity production, the other half coming from nuclear. Further development of large-scale hydropower is, however, to a significant extent prohibited by law, and other renewable energy sources, primarily wind power, are thus considered the only option. To promote renewable energy production, Sweden currently uses a TGC programme.¹³⁸

In 2002, the Swedish government established a planning goal for an annual wind power production of 10 TWh by 2010.¹³⁹ Raising this goal to 16 TWh by 2016 has been discussed.¹⁴⁰ Beyond embracing the readily available hydro and wind resources, Sweden has implemented a progressive research programme into wave and tidal sources. The most telling project is a research facility for wave power, set to run from 2009–2014, aiming to extract energy from relatively small waves.¹⁴¹ With the TGC programme paying immediate dividends, a clear vision for the future, and pragmatic research initiatives underway, Sweden will continue to lead the EU in renewable electricity consumption into the future.

¹³⁵ Renewables Directive, n. 23 above, Annex.

¹³⁶ Renewables Directive II, n. 67 above, Annex I.

¹³⁷ Id.

¹³⁸ Commission of the European Communities, n. 88 above, p. 101.

¹³⁹ Permanent Representative of Sweden to the European Union, *Letter regarding Articles 3(2) and 3(3) of Directive 2001/77/EC* (31 October 2007), available: <http://ec.europa.eu/energy/res/legislation/doc/electricity/member_states/2006/sweden_en.pdf> (retrieved 16 November 2008), p. 3.

¹⁴⁰ Id.

¹⁴¹ IEA, n. 90 above, p. 69.

7.3.8. United Kingdom

The United Kingdom is unquestionably blessed with one of the best environments for wave and tidal electricity generation. Exploration and development of this potential has been articulated to be a priority of the highest order.¹⁴² UK has a renewable electricity target of 10 percent by 2010¹⁴³ and a proposed target of 15 percent by 2020.¹⁴⁴ Reaching the targets would imply a substantial increase from the 1.3 percent share currently held by renewable electricity.¹⁴⁵

Despite strong support for renewable energy sources, the UK's electricity market is so liberalised that renewables have not truly found a stable foothold in the economy. However, with the passing of the original Renewable Obligation Order (RO),¹⁴⁶ which requires suppliers to purchase a designated amount of renewable energy, that trend has begun to shift.¹⁴⁷ The UK uses this obligatory programme in conjunction with tradable green certificates, tax exceptions for renewables, and a "buy-out" fine for non-compliance.¹⁴⁸ With the obligatory targets of renewable energy consumption determined until 2027,¹⁴⁹ investors may well find the UK a welcome market for expansion.

The UK has also created the novel concept of the Renewable Energy Zone,¹⁵⁰ which allows the government to grant exploitation and construction licenses for offshore installations beyond the territorial sea.¹⁵¹ Separately, the Scottish Government installed a Marine Supply Obligation as part of its RO, which provides an expansive support regime for both wave and tidal energy

¹⁴² Government of the United Kingdom, *White Paper: Meeting the Energy Challenge* (2007), available: <<http://www.berr.gov.uk/files/file39387.pdf>> (retrieved 16 November 2008).

¹⁴³ Renewables Directive, n. 23 above, Annex.

¹⁴⁴ Renewables Directive II, n. 67 above, Annex I.

¹⁴⁵ *Id.*

¹⁴⁶ *The Renewables Obligation Order*, SI 2002/914 (2002), available: <<http://www.opsi.gov.uk/si/si2002/20020914.htm>> (retrieved 16 November 2008); Amended by SI 2004/924 and most recently by SI 2006/1004 although they function generally the same.

¹⁴⁷ Government of the United Kingdom, Department for Business, Enterprise and Regulatory Reform, *Report by the United Kingdom on achievement of the indicative target for electricity generation from renewable sources by 2010* (2008), available: <http://ec.europa.eu/energy/res/legislation/doc/electricity/member_states/2006/uk_en.pdf> (retrieved 16 November 2008), p. 7.

¹⁴⁸ Bertoldi et al., n. 37 above, p. 33.

¹⁴⁹ *The Renewables Obligation Order 2006*, SI 2006/1004, available: <<http://www.opsi.gov.uk/si/si2006/20061004.htm#sch1>> (retrieved 16 November 2008), Schedule I.

¹⁵⁰ *The Energy Act 2004* (2004), available: <http://www.bailii.org/uk/legis/num_act/2004/ukpga_20040020_en_1.html> (retrieved 16 November 2008), s. 84.

¹⁵¹ Roggenkamp, n. 16 above, p. 1257.

systems.¹⁵² With numerous concentrated research initiatives for wave and tidal energy underway across the UK, commercialisation of these technologies has accelerated. Although the UK seems to be lagging behind some in terms of renewable energy consumption, the country is clearly ahead of most in terms of legislation pertaining to renewable energy broadly and ocean-based renewables particularly.

7.3.9. Concluding Analysis

The variety of programmes employed by Member States to promote renewable electricity consumption speaks to their ingenuity as well as their dedication. Although understandably in the preliminary stages of development, ocean-based renewable energy programmes are clearly on the policy agenda of many states across the EU. Although each jurisdiction has designed a promotion framework tailored to their particular domestic needs, best practices are observable. First, a market integration mechanism must be in place. Be it in the form of a feed-in tariff, TGC programme, or a consumption quota, a domestic support scheme to encourage investment into otherwise expensive technologies is a prerequisite to broader success. Second, a method of differentiating between conventional and non-conventional energy sources in the market is also necessary. Consumers must be informed of their broader energy options, and a certification system must be established for producers of renewable electricity to guaranty transparency and accountability. Third, domestic legislatures must work to quell negative investor sentiment and stabilise their domestic energy markets. A primary obstacle to mass dissemination of renewable energy technologies is their comparatively high cost. If a domestic energy market is steadied and specific entry points for renewables are created, investment will be fostered more readily, in turn driving down the costs. Finally, long-term renewable electricity consumption targets must be set in place, with a clear action plan for integration into the national energy mix. A long-term strategy, which effectively integrates renewables, helps guide industry as well as government in advancing an energy agenda while continually providing new avenues for investment. In the end, a balance must be struck between short-term energy needs and long-term renewable energy investment.

¹⁵² Government of the United Kingdom, n. 147 above, p. 10; IEA, n. 90 above, p. 71.

7.4. Scottish Strategic Environmental Assessment (SEA) – Case Study

In a report prepared by the Marine Energy Group (MEG), Scotland was identified as having the potential for up to a tenth of its electricity consumption needs to be satisfied by ocean-based renewable energy resources by 2020.¹⁵³ Considering the scale of a proposed commercial project and the potential for a significant environmental impact, the Scottish Government was obliged to commission a strategic environmental assessment (SEA).¹⁵⁴ The resulting report is a comprehensive overview of all probable environmental impacts and mitigation measures available, and is an ideal case study for future marine renewable projects. For clarity, the report will be discussed in four parts. First, the potential effects of these devices on the biological environment will be assessed. Second, the potential impacts of these devices on the human environment will be evaluated. Third, any additional considerations resulting from the placement of an ocean-based renewable energy project are discussed. Lastly, recommendations for future projects are outlined. On the whole, the Scottish SEA process provides a concrete framework for the assessment of environmental impacts and offers an approach that should be considered by other jurisdictions.

7.4.1. Impacts on the Biological Environment

Wave and tidal power devices differ greatly in terms of placement and design. However, generally speaking, their impact on biological ecology is relatively consistent. With devices anchored to the sea floor, having large submerged moving parts, and dispersed over a substantial area, the probability for ecological interference is high. When considering the potential biological impacts of a project, the SEA examined the effects on (i) marine birds, (ii) marine mammals, (iii) benthic ecology, and (iv) fish/shellfish. Each category is

¹⁵³ Marine Energy Group (MEG), *Harnessing Scotland's Marine Energy Potential: Marine Energy Group (MEG) Report 2004*, Report produced for Scottish Executive (Edinburgh: Scottish Executive, 2004) available: <<http://www.scotland.gov.uk/Resource/Doc/1086/0006191.pdf>> (retrieved 16 November 2008), p. 1.

¹⁵⁴ Directive 2001/42/EC of the European Parliament and of the Council 27 June 2001 on the assessment of the effects of certain plans and programmes on the environment, *Official Journal L 197/30* of 21 July 2001, available: <http://ec.europa.eu/environment/eia/full-legal-text/0142_en.pdf> (retrieved 16 November 2008); *Environmental Assessment (Scotland) Act, 2005* asp 15, available: <http://www.opsi.gov.uk/legislation/scotland/acts2005/pdf/asp_20050015_en.pdf> (retrieved 16 November 2008).

discussed individually, with a focus on the impact of the project on that particular group and potential mitigation measure available.

7.4.1.1. Marine Birds

Scotland's coasts are home to numerous bird species, some of which are among the world's most important bird populations. Of the 54 currently listed species present in the SEA area, 38 are protected species under the EC Birds Directive.¹⁵⁵ Furthermore, the potential impacts on these populations are numerous. In terms of the installation and operation of a project, the primary concerns are as follows: collision with the device, increased noise, habitat destruction, species displacement, increased sediment disturbance, and accidental water contamination from device failure.¹⁵⁶ To mitigate these negative effects, the report recommended that proponents attempt to avoid sensitive sites or seasons, design devices to minimise collision or leakage, and conduct in-depth project-specific studies to plan a suitable mitigation strategy for the particular species affected.¹⁵⁷

7.4.1.2. Marine Mammals

The Scottish marine environment contains many different species of marine mammals, including seals, whales, dolphins, porpoises and otters. Marine mammals, particularly seals, are protected under the EC Habitats Directive,¹⁵⁸

¹⁵⁵ Scottish Executive, *Scottish Marine Renewables Strategic Environmental Assessment: non-technical summary* (Scottish Executive, March 2007), available: <http://www.seaenergyscotland.net/public_docs/ER_NTS_FINAL_MAR07.pdf> (retrieved 16 November 2008), p. 9; Directive 79/409/EEC of the Council 2 April 1979 on the conservation of wild birds, *Official Journal* L 103 of 25 April 1979, available: <<http://eur-lex.europa.eu/LexUriServ/site/en/consleg/1979/L/01979L0409-20070101-en.pdf>> (retrieved 16 November 2008).

¹⁵⁶ *Scottish Marine Renewables Strategic Environmental Assessment*, FABER MAUNDELL and METOC PLC (March 2007), available: <<http://www.seaenergyscotland.co.uk/>> (retrieved 16 November 2008) [hereinafter *Scottish Marine Renewables SEA*], Chapter 8: "Marine Birds," pp. 9–19.

¹⁵⁷ *Id.*, Chapter 8, p. 20.

¹⁵⁸ Directive 92/43/EEC of the Council 21 May 1992 on the conservation of natural habitats and of wild fauna and flora, *Official Journal* L 206 of 22 July 1992, available: <<http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:31992L0043:EN:HTML>> (retrieved 16 November 2008), Annex II and V.

the UK's *Wildlife and Countryside Act 1981*,¹⁵⁹ and the *Conservation of Seals Order (Scotland) 2004*.¹⁶⁰ Moreover, the potential impacts on marine mammals are noticeably similar to birds, in that collision with the device, increased noise, habitat destruction, species displacement, increased sediment disturbance, and accidental water contamination from device failure are all initial concerns. Further, underwater placement and operation of a device are of particular concern for marine mammals as noise increases sonar disruption and can potentially create a barrier to movement.¹⁶¹ Again, avoidance of sensitive sites and seasons, as well as a project-specific study, was highly recommended. The report also suggested that proponents should consider "soft starting," a process which gradually increases operational production to allow mammals' time to deviate course, as well as the use of a marine mammal observer to monitor noise levels underwater.¹⁶²

7.4.1.3. Benthic Ecology

The flora and fauna that occupy the seabed are referred to as benthic ecology. These fragile ecosystems are protected under the EC Habitats Directive¹⁶³ and the UK's *Wildlife and Countryside Act 1981*.¹⁶⁴ Potential impacts on this ecosystem stem primarily from the placement of the device on the seafloor, entrenchment of cables, contamination due to operational failure and change in tidal/wave flow. Attachment of a device to the seabed could smother benthic habitats, increase sediment suspension, and disrupt natural reefs. Operationally, the use of such technology could also alter wave and tidal patterns, having potential devastating and far-reaching effects. Avoidance of sensitive sites is again a prime recommendation,¹⁶⁵ as well as minimising seabed attachment when possible,¹⁶⁶ and conducting ongoing site-specific monitoring to minimise long-term alteration of coastal processes.¹⁶⁷

¹⁵⁹ *Wildlife and Countryside Act* (1981), available: <<http://www.jncc.gov.uk/page-3614#download>> (retrieved 16 November 2008), sections 9–12, and s. 28.

¹⁶⁰ *The Conservation of Seals (Scotland) Order, 2004*, available: <http://www.oqps.gov.uk/legislation/ssi/ssi2004/ssi_20040283_en_1> (retrieved 16 November 2008).

¹⁶¹ Scottish Marine Renewables SEA, n. 156 above, Chapter 9: "Marine Mammals," pp. 20–28.

¹⁶² *Id.*, Chapter 9, pp. 33–34.

¹⁶³ Directive 92/43/EEC, n. 158 above, Annexes I and II.

¹⁶⁴ *Wildlife and Countryside Act*, n. 159 above.

¹⁶⁵ Scottish Marine Renewables SEA, n. 156 above, Chapter 2: "Geology, Seabed, Sediment and Sediment Transport," p. 15.

¹⁶⁶ *Id.*, Chapter 6: "Benthic Ecology," p. 21.

¹⁶⁷ *Id.*, Chapter 3: "Marine and Coastal Processes," p. 17.

7.4.1.4. Fish and Shellfish

Scottish waters are home to a myriad of fish and shellfish species. Some of these species – the native oyster, basking shark and common skate – are found on the UK Biodiversity Action Plan Priority Species list, while others – the native oyster, common skate, spurdog, cod and haddock – are on the International Union for Conservation of Nature’s (IUCN) Red List of Threatened Species.¹⁶⁸ The principle impacts on vulnerable fish and shellfish species are the smothering or destruction of habitats upon installation, increased operational noise effecting fish navigation, higher risk of collision, water contamination from device failure, and interference with migration and spawning patterns.¹⁶⁹ Similarly, avoidance of sensitive sites and seasons and a project-specific study are the primary mitigation measures available to proponents.¹⁷⁰

7.4.2. Impacts on the Human Environment

While the biological concerns were generally centred on the method and location of installation, and subsequent operational effects, potential impacts on the human environment are centred more on aesthetic and commercial concerns. With devices submerged and often substantially offshore, the potential impact on the human environment seems relatively low. However, dependent upon the particular location of installation, marine renewable projects could have devastating effects on large industries. When considering the potential impacts of a marine renewable project on the human environment, the SEA assessed the effects on: (i) commercial fisheries, (ii) shipping and navigation, (iii) seascape, (iv) recreation and tourism, (v) marine and coastal historic sites, and (vi) onshore grid connection. Each category is discussed individually, with a focus on the impact of the project on that particular subject or industry and potential mitigation measure available to proponents.

¹⁶⁸ Id., Chapter 7: “Fish and Shellfish,” p. 5; International Union for Conservation of Nature and Natural Recourses, *2007 IUCN Red List of Threatened Species* (2007) available: <<http://www.iucnredlist.org/>> (retrieved 16 November 2008).

¹⁶⁹ Scottish Marine Renewables SEA, n. 156 above, Chapter 7: “Fish and Shellfish,” pp. 5–11.

¹⁷⁰ Id., Chapter 7, pp. 19–20.

7.4.2.1. Commercial Fisheries

Commercial fishing is a vital industry in Scotland, as it is in many other nations. However, many of the methods of commercial fishing (trawling, dredging, long line, etc.) are particularly vulnerable to debris or protruding objects on the seafloor. Problematically, the bulk of commercial fish stocks also tend to be found in the exact areas with the highest potential for electricity generation.¹⁷¹ The potential impacts on commercial fishing are direct disturbance with fishing grounds, temporary/long-term displacement of traditional fishing grounds or migration patterns, destruction of the seabed during installation, and potential water contamination from device failure or vessel collision.¹⁷² Proponents have limited options to mitigate many of these concerns. However, if possible, it is recommended that proponents avoid project installation in prime fishing grounds, during prime seasons, and remove all seafloor debris post construction.¹⁷³ Regardless of careful site selection, in many cases there will be an inevitable effect on commercial fisheries.

7.4.2.2. Shipping and Navigation

Scottish waters have immense shipping traffic. Recognised sea lanes that are essential to international navigation are protected under domestic law, and the Scottish Government is to refuse the licensing of any offshore energy installation that will substantially interfere with these vital sea lanes.¹⁷⁴ Important potential impacts on international shipping and navigation are increased travel time, displacement of shipping density, and risk of collision with installations or other vessels.¹⁷⁵ The potential is high to mitigate many of the concerns of the shipping community. Through consultation with the shipping industry, sites may be selected which do not directly affect shipping lanes, devices may be designed which provide clearance for ships to pass over them, or safety lighting systems could be developed.¹⁷⁶ However, some negative effects such as increases in shipping density, or travel times must be expected.

¹⁷¹ *Id.*, Chapter 10: “Commercial Fishing and Marine culture,” pp. 4–8.

¹⁷² *Id.*, Chapter 10, pp. 17–20.

¹⁷³ *Id.*, Chapter 10, p. 30.

¹⁷⁴ *The Energy Act 2004*, n. 150 above, s. 99.

¹⁷⁵ Scottish Marine Renewables SEA, n. 156 above, Chapter 15: “Shipping and Navigation,” pp. 9–12.

¹⁷⁶ *Id.*, Chapter 15, pp. 21, 23–25.

7.4.2.3. Seascape

The seascape, broadly speaking, is the coastal landscape, adjacent waterways, and scenic views. Infringement on the visual character of a region could be viewed by residents and visitors alike as disastrous. Potential effects resulting from the installation of ocean-based renewable projects are entirely dependent upon the design of the device used and its proximity to the coastline.¹⁷⁷ Generally speaking however, the principle impact of ocean-based renewable projects is the interference with the peaceful enjoyment of the coastal environment. Proponents are encouraged to be selective in their location of projects aiming to maximise the potential distance of devices from the shoreline and to minimise the height and intrusiveness of devices possibly with the use of colour.¹⁷⁸ On the whole, however, some infringement upon the seascape must be acceptable.

7.4.2.4. Recreation and Tourism

Scotland's coastal area has been a destination for outdoors enthusiasts and tourists alike for generations. However, there is a growing concern that the construction of offshore renewable energy projects may hamper recreational as well as tourist activity to some extent. Potential impacts on recreational and tourist activity include installation noise, disturbance of natural habitats effecting wildlife watching, increased risk to recreational sailors of collision with the installation, and restrictions on access to particular areas.¹⁷⁹ The SEA Report recommended that proponents complete installation in the tourist off-season, avoid popular sailing or sport routes, and look to use devices which have little negative visual impact on the surrounding landscape.¹⁸⁰ However, it was noted that it is difficult to calculate the public response to projects of this nature, as the installations may become a tourist attraction themselves. Moreover, because of the localised nature of recreational activities and the diverse areas available, it is not expected that marine renewable projects will deter people from engaging in those activities.¹⁸¹

¹⁷⁷ Id., Chapter 19: "Seascape Assessment," p. 5.

¹⁷⁸ Id., Chapter 19, p. 21.

¹⁷⁹ Id., Chapter 16: "Recreation and Tourism," pp. 12–15.

¹⁸⁰ Id., Chapter 16, pp. 19–20.

¹⁸¹ Id., Chapter 16, p. 22.

7.4.2.5. Marine and Coastal Historic Environment

Scottish waters are peppered with countless important historical sites, including archaeological remains and wreck sites. Numerous international conventions address the subject of historic remains, including the UNESCO Convention on the Protection of Underwater Cultural Heritage 2001.¹⁸² However, the most notable is the 1982 United Nations Convention on the Law of the Sea (LOS Convention), which requires states to protect objects of historical significance.¹⁸³ Furthermore, UK domestic law requires that wrecks be registered¹⁸⁴ and also creates a safe-zone around submerged wrecks to regulate activity.¹⁸⁵ The principle impact on these sites is the potential for direct disturbance/destruction of important historical remains during the installation of the project and entrenchment of cables.¹⁸⁶ An initial site survey of the seabed, done in conjunction with experts, is a principle mitigation practice which should be followed. Moreover, proponents are also encouraged to follow the Code of Practice for Seabed Development,¹⁸⁷ designed by the Joint Nautical Archaeology Policy Committee, when installing projects.¹⁸⁸

7.4.2.6. Onshore Grid Connection

A prerequisite to power generation or transmission to consumers is the connection of the installation to the national grid. Any offshore wave or tidal

¹⁸² *UNESCO Convention on the Protection of Underwater Cultural Heritage*, 2 November 2001, 41 *I.L.M.* 37, available: <<http://unesdoc.unesco.org/images/0012/001260/126065e.pdf>> (retrieved 16 November 2008).

¹⁸³ Scottish Marine Renewables SEA, n. 156 above, Chapter 11: “Marine and Coastal Historic Environment,” p. 2; *United Nations Convention on Law of the Sea*, 10 December 1982, 1833 *U.N.T.S.* 3 (entered into force 16 November 1994), available: <http://www.un.org/Depts/los/convention_agreements/texts/unclos/unclos_e.pdf> (retrieved 16 November 2008) [hereinafter LOS Convention].

¹⁸⁴ Scottish Marine Renewables SEA, n. 156 above, Chapter 11: “Marine and Coastal Historic Environment,” p. 6; *Merchant Shipping Act 1995* (c. 21), available: <http://www.opsi.gov.uk/ACTS/acts1995/ukpga_19950021_en_1> (retrieved 16 November 2008), s. 236.

¹⁸⁵ *Protection of Wrecks Act 1973* (c. 33), available: <http://www.opsi.gov.uk/RevisedStatutes/Acts/ukpga/1973/cukpga_19730033_en_1> (retrieved 16 November 2008), s. 1.

¹⁸⁶ Scottish Marine Renewables SEA, n. 156 above, Chapter 11: “Marine and Coastal Historic Environment,” pp. 12–13.

¹⁸⁷ Joint Nautical Archeology Policy Committee (JNAPC), *Code of Practice for Seabed Development* (2007), available: <http://www.thecrownestate.co.uk/jnapc_code_of_practice.pdf> (retrieved 17 November 2008).

¹⁸⁸ Scottish Marine Renewables SEA, n. 156 above, Chapter 11: “Marine and Coastal Historic Environment,” p. 17.

station is going to need additional infrastructure, including entrenched cables, an onshore power substation, land cables and overhead transmission lines; all of which could have harmful impacts on the surrounding environment. The key potential effects resulting from the development of the required onshore infrastructure are permanent alteration to the character of the landscape, disturbance/destruction of habitats during installation, disturbance/destruction of archaeological remains, and infringement on traditional land uses.¹⁸⁹ The most practical mitigation measure available to proponents is to conduct a detailed routing assessment at the onset of the project with the aim of finding the most direct and least intrusive route for transmission line placement.¹⁹⁰ Furthermore, the SEA Report recommended that this assessment be done in accordance with industry best practices for routing of overhead transmission lines.¹⁹¹ A pre-project routing assessment will allow the proponent to find an efficient transmission strategy, while avoiding sensitive sites, farms or habitats.

7.4.3. Additional Environmental Impacts

Not all potential impacts addressed under the SEA are conveniently compartmentalised as effecting either the biological or human environment. A potential impact may bridge the gap between these two distinct ecosystems or may be entirely unique to that industry. Regardless, the SEA assessed the effects of a marine renewable project on (i) military exercise areas, (ii) water quality, (iii) electric and magnetic fields (EMF), and (iv) decommissioning of offshore installations. Each subject area is discussed below, potential project impacts are outlined, and available mitigation measures are summarised. Although, classified as “additional,” these subject areas, particularly decommissioning, are important to minimising negative environmental impacts of renewable energy resource development.

¹⁸⁹ Scottish Marine Renewables SEA, n. 156 above, Chapter 20: “Onshore Grid Connection,” pp. 3–6.

¹⁹⁰ *Id.*, Chapter 20, p. 10.

¹⁹¹ *Id.*, Chapter 20, p. 11. In the UK see “Holford Rules” as industry standard best practices for the installation of overhead transmission lines.

7.4.3.1. Military Exercise Areas

The Scottish military uses designated offshore locations for a variety of military purposes, including test firing, military manoeuvres and ammunition dumps. Offshore energy installation construction could disrupt military exercises either temporarily or, potentially, permanently.¹⁹² Construction of the installation would require a full cessation of activities in that area. The entrenchment of cables could result in the disruption of unexploded ordinances. The only mitigation measure available to proponents is to liaise with the Ministry of Defence to identify and avoid dangerous sites and to coordinate installation.¹⁹³

7.4.3.2. Water Quality

One of the most vital concerns of an ocean-based renewable energy project is ensuring that water quality in the surrounding area will not be diminished during installation or operation. Protection and monitoring of water quality and aquatic environments is a key policy goal for the EU,¹⁹⁴ as well as the Scottish government.¹⁹⁵ Construction of an ocean-based renewable project could have potentially disruptive effects on water quality in the area, and proponents must be aware of this risk at the onset. Key environmental concerns pertaining to water are disturbing sediment, accidental release of a contaminant during construction or operation, disturbance of contaminated or sanative materials on the seabed, and a permanent change in sediment dynamics.¹⁹⁶ Proponents are encouraged to use installation methods that minimise sediment disruption, use non-toxic materials during construction and operation, and to do a hydrodynamic study prior to commencement of the project.¹⁹⁷

¹⁹² Scottish Marine Renewables SEA, n. 156 above, Chapter 13: “Military Exercise Areas,” p. 2.

¹⁹³ *Id.*, Chapter 13, p. 4.

¹⁹⁴ Directive 2000/60/EC of the European Parliament and Council of 23 October 2000 establishing a framework for Community action in the field of water policy, *Official Journal* L 327 of 22 December 2000, available: <<http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:32000L0060:EN:HTML>> (retrieved 17 November 2008).

¹⁹⁵ *The Water, Environment and Water Services (Scotland) Act*, 2003 (ASP 3), available online: <http://www.opsi.gov.uk/legislation/scotland/acts2003/asp_20030003_en_1> (retrieved 17 November 2008).

¹⁹⁶ Scottish Marine Renewables SEA, n. 156 above, Chapter 4: “Contamination and Water Quality,” pp. 9–11.

¹⁹⁷ *Id.*, Chapter 4, p. 14.

7.4.3.3. Electric and Magnetic Fields

Cables used for the transmission of electricity from offshore installations will produce electric and magnetic fields. The severity of environmental effects is entirely dependent upon the type, composition, and location of the cables.¹⁹⁸ Usually, an electric and magnetic field is contained within the cables outer sheath. However, some interaction with the surrounding environment is to be expected. The key potential impact is an interference with marine species detection and location capabilities.¹⁹⁹ A major practical limitation for proponents is minimising the negative effects on surrounding species. The SEA Report recommended that area-specific and species-specific surveys be done to calculate possible cumulative effects and to design species-specific mitigation measures when available.²⁰⁰

7.4.3.4. Decommissioning of Offshore Installations

The effective removal of an offshore installation is of equal, if not greater, importance than any installation or operational environmental concern. Internationally, decommissioning was introduced as a legal obligation in the LOS Convention²⁰¹ and domestically by the *Energy Act 2004*.²⁰² Except in specific circumstances, generally where the installation can serve a new use or where removal would be extremely costly, once decommissioned, all offshore installations must be removed.²⁰³ The standard of removal should draw upon internationally recognised guidelines²⁰⁴ and be determined on a case-by-case evaluation.²⁰⁵ Paradoxically, the decommissioning of an installation has many of the same effects and concerns as installation. Thus, many of the mitigation

¹⁹⁸ Id., Chapter 18: “Electric and Magnetic Fields,” p. 2.

¹⁹⁹ Id., Chapter 18, pp. 4–8.

²⁰⁰ Id., Chapter 18, p. 15.

²⁰¹ LOS Convention, n. 183 above.

²⁰² *The Energy Act 2004*, n. 150 above, ss. 105–113.

²⁰³ Scottish Marine Renewables SEA, n. 156 above, Chapter 21: “Decommissioning,” p. 2.

²⁰⁴ International Maritime Organization, *Resolution A.672(16) Guidelines and Standards for the Removal of Offshore Installations and Structures on the Continental Shelf and Exclusive Economic Zone, adopted 19 October 1989*, available: <http://www.imo.org/Newsroom/contents.asp?doc_id=628&topic_id=227> (retrieved 17 November 2008).

²⁰⁵ Government of the United Kingdom, Department of Trade and Industry, *Decommissioning Offshore Renewable Energy Installations: Consultation on guidance relating to the statutory decommissioning scheme for offshore renewable energy installations in the Energy Act 2004* (9 June 2006), available: <<http://www.berr.gov.uk/files/file29979.pdf>> (retrieved 17 November 2008), p. 15.

strategies employed during the construction phase may be useful during the deconstruction phase as well.²⁰⁶ However, proponents can alleviate many decommissioning concerns by either using a device design that is easily removed or one that can serve an alternative purpose – as an artificial reef perhaps.

7.4.4. Recommendations for Future Projects

Cumulatively, four key recommendations may be offered for future ocean-based renewable projects. First, prior to the installation of an offshore renewable energy source facility, it is essential for proponents do a site specific SEA. As the environmental conditions will be unique to any given location, a site specific SEA will inform the relevant parties of the particular environmental conditions that must be measured at the planning stages of installation.²⁰⁷ Furthermore, considering environmental concerns (be they biological, commercial, or human) at the early stages will also allow for the selection of a site which will minimise environmental impact, while maximising potential electricity return. Second, proponents must be open to selecting the appropriate device for the particular environment conditions. Not all wave and tidal devices are designed the same, have identical production capacities, or affect the surrounding environment in a similar fashion. Thus, proponents must be informed by a site specific SEA, and choose devices which aim to mitigate enumerated concerns. Furthermore, pressure must be put on the developers of ocean renewable technology, be it by industry or the legislature, to develop devices that have a minimal environmental impact.

Third, proponents must devise a monitoring procedure to observe environmental conditions in and around the offshore installation continually. Many environmental concerns outlined in the SEA may take time to become evident. If a robust monitoring programme could be designed and implemented – possibly through consultation between industry and governmental experts – it may allow for otherwise devastating environmental impacts to be identified and addressed early on. This in turn allows proponents to minimise both negative environmental impacts and expenses. Lastly, proponents and developers alike must think of a practical decommission strategy prior to installation of any devices. Although counterintuitive at the planning stage, designing offshore

²⁰⁶ *Id.*, p. 10.

²⁰⁷ Scottish Marine Renewables SEA, n. 156 above, *Informing the Future Development of Marine Renewable Energy*, p. 7.

projects with decommissioning in mind will naturally lead to minimal impact of installations. Recognisably, the cost of such an approach may be initially higher – as a greater amount of research and expertise will be needed – but, in the long term, it will allow for more effective mitigation of environmental concerns. Furthermore, such an approach will naturally facilitate technologies which are minimally impacting and easily removed. On the whole, given the interconnected nature of ocean-based renewable energy projects and environmental integrity, it would be wise of proponents to lead the development of the industry’s legal framework, rather than simply reacting to it.

7.5. Concluding Remarks

The EU has shown progress in developing a comprehensive legislative framework to promote and govern renewable energy production broadly and ocean-based renewables specifically. Recognisably, this evolution has been in response to mounting geo-political pressure to curb climate change. But it also has strategic benefits for Europe, namely increased competitiveness, environmental protection and energy security. Renewable energy sources play a vital role in accomplishing these goals. By allowing Member States to craft localised energy consumption strategies which maximises the role played by renewable energy sources, the EU has begun the slow renovation of its oil dependent economy.

However, the desired direction was not always clear. Early on, various renewable energy sources were developed at different rates across the EU, resulting in divergent growth and varying practices. The Renewables Directive addresses this uneven usage of renewables in Member States by adopting a comprehensive promotion programme for renewable electricity generation, which sets clear consumption targets for renewable electricity. The Directive also outlines administrative barriers to entry into the market and designs a functional support scheme to encourage renewable energy investments. The EU has thus taken hold of the global environmental standard and hoisted it high. Unfortunately, the practical outcome of the ambitious targets have been less than stellar, with Member States cumulatively missing consumption targets by half. A renewed directive, addressing some of the shortcomings of the initial

promotion programme, has been submitted for consideration and should be adopted by the summer of 2009.²⁰⁸

Individual jurisdictions have also made impressive strides in developing a welcoming market for renewable energy sources. By combating domestic market conditions through feed-in tariffs, TGCs and consumption quotas, Member States are forging a healthy climate for investment in renewable technologies. Although much of the current focus commercially has been on wind, biomass and biofuels, ocean-based renewable energy sources are beginning to take hold in particular locations. However, governance of marine renewable programmes is a complex and ever-growing process, with a regulatory framework being a prerequisite to commercial projects. To this end, Member States have worked to answer primarily two key questions. First, how are acceptable locations for ocean-based renewable projects determined? Although particular methods vary, legislatures must have a mechanism in place to designate an area – possibly in the exclusive economic zone – for renewable energy production similar to the Belgian domain concession programme or the UK's renewable energy zone, and a method to license and monitor operations within that area. Second, how is the electricity produced at these installations going to be delivered to consumers? In some instances a strong variable feed-in tariff would be sufficient, as is the case in Portugal, while other markets are so liberalised that renewable energy sources cannot compete without a mandated quota, as is the case in the UK. With the particular market conditions unique to each jurisdiction, the countermeasures employed must be market specific.

Only Scotland has gone on to comprehensively address the environmental effects of a proposed commercial marine renewable installation. With its SEA of marine renewables, Scotland has set the standard for calculating the potential impact of an ocean-based renewable project on marine ecosystems. By assessing the potential effects of a project on the biological, human and commercial environments, and evaluating possible mitigation measures available, broad recommendations may be made for future projects. Most imperative is the need for a project-specific site survey, continued monitoring of environmental standards in the area, and decommission-friendly project design.

On the whole, ocean governance is an indispensable element of marine renewable expansion and jurisdictions must take certain steps to promote and

²⁰⁸ Directive of the European Parliament and of the Council 26 March 2009 on the promotion of electricity produced from renewable energy sources amending and subsequently repealing Directive 2001/77/EC and 2003/30/EC, (PE-CONS 3736/08), available: <<http://register.consilium.europa.eu/pdf/en/08/st03/st03736.en08.pdf>> (retrieved 12 November 2008).

administrate ocean-based renewables if they are to be positively integrated into the national energy mix. First, states must identify clear goals for renewable energy consumption in the short, medium and long term. Second, they need to determine the particular market factors negatively affecting the natural integration of renewables into the economy and design a domestic support scheme that aims to counteract those factors. Third, states must evaluate and mitigate the potential environmental impacts of marine renewable projects. Finally, periodic monitoring and evaluation of the programme must be conducted to maximise market efficiency.

In the end, a comparative analysis of Europe's marine renewable sector provides interested parties with a holistic approach to expand the presence of renewable energy sources in their domestic markets, a host of best practices and an ever-growing legal and regulatory framework. Early on, Europe was deftly aware of the geo-political realities affecting their economy. Their subsequent reaction, a rapid expansion of their renewable energy sector, has uniquely poised them to provide positive contributions to other developed economies. Competitiveness and environmental protection are not incompatible goals; they are both possible. What is needed is a restoration of the current energy dynamic to incorporate renewable energy sources more effectively, and in this respect, Europe is leading the way.

Chapter 8

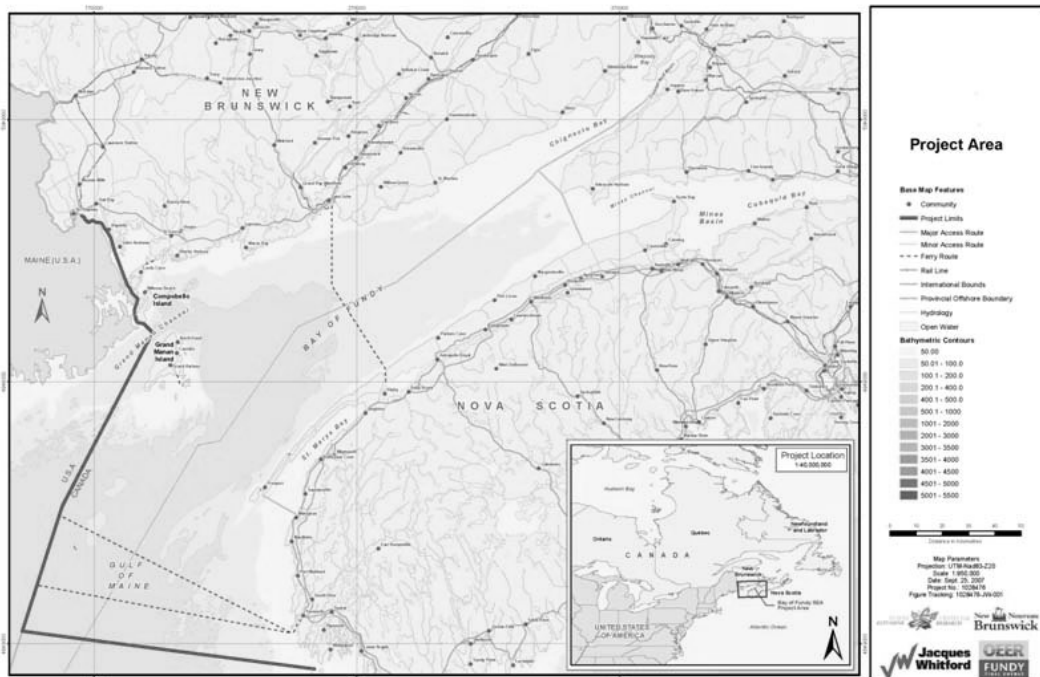
The Role of Strategic Environmental Assessments in Energy Governance: A Case Study of Tidal Energy in Nova Scotia's Bay of Fundy

Meinhard Doelle

8.1. Introduction

The Bay of Fundy is a large estuary that separates portions of Nova Scotia and New Brunswick on the Atlantic coast of Canada (Figure 8.1). The Bay is about 300 km long and 100 km wide at its mouth. Due to its shape and location, it experiences extremely high tides, up to 16 meters in the upper Bay. In addition, the Bay of Fundy contains narrow passages which result in ocean currents of up to 6 m/sec during each tidal cycle. These features combine to provide some of the highest potential for tidal energy development anywhere in the world.

Figure 8.1. Bay of Fundy Tidal Power Strategic Environmental Assessment Project Area



Source: Jacques Whitford, *Background Report for the Fundy Tidal Energy SEA* (Dartmouth: Jacques Whitford, January 2008), pp. 1–3, available: <<http://www.bayoffundyseas.ca>> (retrieved 18 February 2009).

The potential for tidal power development in the Bay of Fundy region of the Atlantic coast of Canada has been recognised for decades. Not surprisingly, there have been attempts to develop offshore renewable energy in the area before. In the 1980s, barrage-based tidal power technology was piloted in Annapolis Royal, Nova Scotia. A combination of technical, economic and environmental concerns identified as a result of this pilot project prevented any large-scale development of the resource at that time.¹ In recent years, offshore renewable energy has become of interest again. Much has changed since the last effort in the early 1980s.

There have been considerable changes in the technologies considered since previous efforts in the 1980s. Pilot projects underway around the world are using new, open turbine technology that is expected to reduce cost and environmental impact significantly. This technology operates on principles similar to a wind turbine, except it is anchored or otherwise secured on the seabed in tidal waters. These turbines are able to take advantage of flows of water in both directions and offer power in predictable intervals during most of the tidal cycle.²

The economics of tidal power have also changed as a result of recent increases and fluctuations in energy prices, and the projections for long-term energy supply and demand. Energy security is becoming a growing concern around the world. The environmental imperative for a switch from traditional non-renewable fossil fuel based sources of energy to renewable, low greenhouse gas emitting energy sources has become a pre-occupation of all levels of government in Canada. Finally, economic diversification has become critical for Maritime communities dependent on the exploitation of dwindling resources and on energy intensive manufacturing.

All this adds up to considerable pressure to utilise all sources of renewable energy that are technically and economically within reach. Tidal energy is no exception. Numerous potential developers of tidal energy have been pushing governments in Canada to clarify the rules under which this industry will operate, and to allow pilots to be put into the water to demonstrate the viability of the new technologies. Some developers are already pursuing commercial scale developments. At the same time, utilities are busy trying to understand how tidal energy will fit into the existing and future energy mix, the capacity of the grid to utilise the power generated, and the role of tidal energy

¹ See, for example, M. Conley and G. Daborn, eds., *Energy Options for Atlantic Canada* (Halifax: Formac Publishing, 1983).

² For background information on tidal energy technologies, see J. Whitford, *Background Report for the Fundy Tidal Energy SEA* (January 2008), paras 3.3–3.6, available: <<http://www.bayofffundyseas.ca>> (retrieved 20 November 2008)

in meeting increasing demand for greener power. A recent study has estimated the potential in the Bay of Fundy to be in the range of 300 megawatts of power, with the theoretical potential well in excess of 2000 megawatts.³

Tidal energy is the latest in a string of significant new industries to arrive in Nova Scotia. Over the past 30 years, Nova Scotia has faced the arrival of the offshore oil industry, the aquaculture industry, the offshore natural gas industry, and the liquefied natural gas industry.⁴ In hindsight it is easy to see that all levels of government were ill prepared for the arrival of these industries, but much has been learned in the process about the need for environmental impact assessments, resource management, and integrated planning. Tidal energy provides an opportunity to put these lessons into practice.

This contribution will consider the role of strategic environmental assessments (SEA) in improving government decision making in the face of new industries, using the arrival of the tidal energy industry in province Nova Scotia as a case study. Nova Scotia is considered a particularly suitable case study due to the considerable provincial jurisdiction over energy issues in Canada, the interest in tidal energy in the Bay of Fundy, and a recent strategic environmental assessment on offshore renewable energy carried out in Nova Scotia.

In considering the governance approach in Nova Scotia to this new industry, the existing constitutional and regulatory context facing government decision makers when this new industry first appeared on their radars will be reviewed. The constitutional context is then briefly considered. As we will see, the jurisdictional context has not been formally resolved, though there appears to be political acceptance of provincial territorial jurisdiction in the Bay of Fundy.

There is a complex system of federal and provincial regulatory processes that will apply to tidal energy projects; however, there is no regulatory process in place specifically designed for tidal energy. The federal and provincial regulatory contexts are considered separately below. It is this regulatory

³ Electric Power Research Institute (EPRI), *Survey and Characterization – Tidal In Stream Energy Conversion Devices*. Report TP-004-NA (2005), online: <www.epri.com> (retrieved 15 November 2008). See also Whitford, n. 1 above, paras 4.3–4.4 and 4–26.

⁴ For a detailed discussion of the challenges associated with the arrival of the aquaculture industry in Canada, see D. VanderZwaag and G. Chao, eds., *Aquaculture Law and Policy: Towards Principled Access and Operations* (London: Routledge, 2006). For a discussion of the challenges of dealing with liquefied natural gas projects at the project EA level without the benefit of a SEA, M. Doelle, *The Federal Environmental Assessment Process: A Guide and Critique* (Markham, Ont.: LexisNexis Butterworths, 2008), pp. 161, 170, 174, and 181.

framework that government decision makers had to work with when they were first approached to approve tidal pilot projects around 2005.

Provincial officials quickly concluded that the existing decision-making framework was inadequate, and decided to initiate a SEA to guide future decision making on whether, where, and under what conditions tidal energy development should be approved. The tidal SEA was carried out without any legal foundation, and with limited federal engagement. It is the role of this SEA in improving decision making for new industries in Nova Scotia that is the focus of the final part of this contribution.

8.2. The Constitutional Context

The roles of the provincial and federal levels of government in Canada with respect to tidal energy projects will very much depend on whether the projects are located within the territory of a province or outside. Unfortunately, while international maritime boundaries are relatively well established as a result of the broad acceptance and adoption of the 1982 United Nations Convention on the Law of the Sea,⁵ some provincial maritime boundaries within Canada are still unresolved. In the case of Nova Scotia, a strong legal claim can be made that a portion of the Bay of Fundy is part of the territory of Nova Scotia, but the issue has not been formally settled either through negotiations or litigation.⁶

Even if tidal development takes place entirely within the territory of the province of Nova Scotia, both the provincial and federal levels of government would have jurisdiction to deal with certain aspects of tidal energy projects. Provincial laws would apply to the production of electricity and to certain aspect of its export.

Section 92A (1)(c) of the *Constitution Act, 1982*⁷ provides the basis for provincial jurisdiction over the production of tidal power within the province. It provides that:

⁵ *United Nations Convention on the Law of the Sea*, 10 December 1982, 21 *I.L.M.* 1261 (1982).

⁶ For Supreme Court of Canada cases that have considered how to determine the territorial offshore boundaries of Canadian provinces, see *Reference re Offshore Mineral Rights of British Columbia* [1967] S.C.R. 792; *Reference Re Bed of the Strait of Georgia and Related Areas*, [1984] 1 S.C. R. 388, and *Hibernia Reference* [1984] 1 S.C.R. 86 . See also G. V. LaForest, “Canadian Inland Waters of the Atlantic Provinces and the Bay of Fundy Incident,” *Canadian Yearbook of International Law* 1, (1963): 149, and E. C. Foley, “Nova Scotia’s Case For Coastal and Offshore Resources,” *Ottawa Law Review* 13 (1982): 281–308.

⁷ *Constitution Act, 1982*, being Schedule B to the *Canada Act 1982* (U.K.), 1982, c. 11. See also, s. 92A(2), (3), and (4).

92A (1) In each province, the legislature may exclusively make laws in relation to...

(c) development, conservation and management of sites and facilities in the province for the generation and production of electrical energy.

The province also has jurisdiction over local works and undertakings under s. 92(10), property and civil rights under s. 92(13), and other matters of a local and private nature under s. 92(16). Relevant areas of federal jurisdiction would include navigation and shipping under s. 91(10), marine pollution,⁸ and inland and sea coast fisheries under s. 91(12).⁹

As a result, permits to develop tidal energy within the territory of the province of Nova Scotia will require both provincial and federal permits. The existing regulatory framework as it applies to tidal energy is therefore explored in the following sections.¹⁰

8.3. The Federal Regulatory Framework¹¹

Regardless of any claims to provincial territorial jurisdiction in areas with high potential for tidal development, it is clear that the federal government does have jurisdiction over aspects of tidal power development. Federal jurisdiction over navigation, fisheries, and inter-provincial undertakings are obvious examples. As a result, a number of federal actors will likely be involved in Fundy tidal power development decision making, most notably the Canadian Environmental Assessment Agency, the National Energy Board, the Department of Fisheries and Oceans, Environment Canada, Transport Canada, and Natural Resources Canada. The following is a brief overview of federal regulatory regimes that are likely to be relevant.

⁸ *R. v. Crown Zellerbach Ltd.*, [1988] S.C.J. No. 23, [1988] 1 S.C.R. 401.

⁹ For a more detailed discussion of jurisdictional considerations for tidal energy development in the Bay of Fundy, see M. Doelle, D. Russell, P. Saunders, D. L. VanderZwaag, and D. Wright, "The Regulation of Tidal Energy Development Off Nova Scotia: Navigating Foggy Waters," *University of New Brunswick Law Journal* 55 (2006): 27, p. 34

¹⁰ The developer will have to be given some form of property right to develop tidal energy in a given area to the exclusion of others and to install its equipment. For a discussion of this issue, see Doelle et al., n. 9 above, p. 42

¹¹ This section is an updated version of the author's contribution to a regulatory summary in Doelle et al., n. 9 above, p. 49

8.3.1. *Fisheries Act*¹²

Certain provisions of the *Fisheries Act*, administered by the Department of Fisheries, will be triggered in case of impact on fish or fish habitat, and in case of water pollution resulting from the construction, operation and decommissioning of tidal projects. Section 32 of the *Fisheries Act* applies in case of direct harm to fish, such as fish kill from the turning of the turbines. In such a case, an authorisation under s. 32 will be required. The project may also trigger s. 35(1) which prohibits carrying on “any work or undertaking that results in the harmful alteration, disruption or destruction (HADD) of fish habitat.” Such HADD is permissible if authorisation is obtained (s. 35(2)). Section 35 is a trigger for an environmental assessment under the *Canadian Environmental Assessment Act* (CEAA) (discussed below). Section 36(3) may also be relevant if, in the construction, operation or decommissioning of the project, a deleterious substance is deposited in water frequented by fish. Finally, s. 37 allows the Minister to require the submission of certain information in case of an alteration, disruption or destruction of fish habitat or if there is deposition of a deleterious substance in water frequented by fish.

8.3.2. *Canadian Environmental Assessment Act*¹³

CEAA, administered by the Canadian Environmental Assessment Agency, will likely apply to a tidal energy project in the Bay of Fundy. The Act, according to section 5, generally applies to projects that involve federal proponents, federal funding, federal land, or certain federal regulatory decisions. Regulatory decisions that trigger an assessment under the Act are listed in the Law List regulations.¹⁴

The application of the Act is limited to projects. Projects are defined in section 2 of the Act to include undertakings in relation to a physical work. Any tidal development that includes the construction, operation and potential decommissioning of a physical work would be considered a project as defined. Not all proposed projects require an assessment under the Act. There are a number of specific exemptions for emergencies and national security that are not likely to apply to tidal energy projects.

The other key requirement is a federal decision maker who is required to exercise a power, duty or function listed in section 5 with respect to the project.

¹² *Fisheries Act*, R.S.C. 1985, c. F-14.

¹³ *Canadian Environmental Assessment Act*, S.C. 1992, c. 37 [hereinafter CEAA].

¹⁴ See *Law List Regulations* (SOR/94-636).

If a federal authority became the proponent of a tidal energy project, s. 5(1)(a) would trigger an environmental assessment (EA) under the Act. Federal funding would trigger an EA under s. 5(1)(b). If a federal authority sells, leases or otherwise disposes of federal lands or an interest in federal lands for the purposes of carrying out the tidal project (this may include the granting of rights to develop tidal power in areas within federal territorial jurisdiction), s. 5(1)(c) will trigger an EA.

Tidal developments, even without federal proponents, federal funding or the use of federal land, would likely require one or more regulatory approvals listed on the Law List. Regulatory requirements for tidal development that are included on the Law List and that would therefore trigger a federal EA include s. 35 of the *Fisheries Act* and s. 5 of the *Navigable Waters Protection Act*.¹⁵

There are three main process options under CEAA. They range from a screening level of assessment, to a comprehensive study and a panel review. Legal requirements for screenings are limited, making screenings the most flexible approach. Comprehensive studies involve more substantive requirements, mandatory public engagement and some oversight of the process by the Minister of the Environment. Panel reviews are independent and involve mandatory public hearings.

There are opportunities for joint environmental assessment processes involving the federal and provincial governments. CEAA provides for joint panel reviews with other jurisdictions as well as substitution in case of other federal processes suitable to carry out the purposes of CEAA. In case of screenings and comprehensive studies, coordination is generally less formal.

8.3.3. *Species At Risk Act (SARA)*¹⁶

SARA, under the shared responsibility of Environment Canada and the Department of Fisheries and Oceans, applies to all federal land as defined in the Act, including the territorial sea and internal waters of Canada.¹⁷ SARA is designed primarily to protect listed species at risk on federal lands. It does so through some general prohibitions against activities harmful to species listed under section 15 as extinct, extirpated, endangered, threatened or of special concern. The listing process and the general prohibitions associated with it

¹⁵ *Law List Regulations* (SOR/94-636), Schedule 1, item 6(e) and 11(a). Both the *Fisheries Act* and the *Navigable Waters Protection Act* are discussed below.

¹⁶ *Species At Risk Act*, S.C. 2002, c. 29 [hereinafter SARA].

¹⁷ *Id.*, s. 2(1), definition of “federal land.”

work in combination with a permitting process that can override the general prohibition for certain activities.

Depending on jurisdictional issues and the project's technology and implementation, s. 32(1), s. 33 and s. 58 all potentially apply. Section 32 generally prohibits harming or killing of listed species. Section 33 deals with harm to the residence of listed species, and section 58 seeks to protect critical habitat. SARA essentially requires consideration of any potential impact of a project on listed species, their residences and habitats, and requires designing projects to avoid any negative impacts.

Depending on the circumstances, proponents may be able to enter into an agreement or obtain a permit pursuant to s. 73 with respect to activities otherwise prohibited. Section 73 gives the Minister limited discretion to allow activities otherwise prohibited due to their risk to listed species. Species listed under SARA that potentially could be affected include the Grey Whale, Blue Whale (Atlantic Population), North Atlantic Right Whale, Atlantic Walrus, Leatherback Seaturtle, Piping Plover (*melodus*), Atlantic Salmon, Peregrine Falcon (*anatum* subspecies), Northern Wolffish (*Anarhichas denticulatus*), and Spotted Wolffish (*Anarhichas minor*).¹⁸

Specifically, section 32(1) will apply if the construction or operation results in the death, harm, harassment, capture or taking of an individual of a species that is listed as an extirpated species, an endangered species or a threatened species. Section 33 will come into play if the project damages or destroys the residence of one or more individuals of a wildlife species that is listed as an endangered species or a threatened species. Section 58 will apply in cases where critical habitat has been identified in a recovery strategy of a listed species. It provides for the protection of critical habitat through a general prohibition in combination with more specific provisions depending on whether the listed species is found in a national park, federal land or provincial or private land.

It should be noted that because SARA is relatively new legislation, the critical habitat and residences of all the marine species that could be affected by a Fundy tidal energy project have not yet been identified and recovery plans do not yet exist. This means that as such a project proceeds, attention will have to be paid to the ongoing development of recovery plans and the identification of residences and critical habitat.

¹⁸ See online: <<http://www.sararegistry.gc.ca>> (retrieved 20 November 2008)

8.3.4. *Navigable Waters Protection Act (NWPA)*¹⁹

The NWPA, currently administered by Transport Canada, will apply because the Bay of Fundy is a navigable water and, pursuant to s. 5, a permit is required for a work that is built or placed in, on, over, under, through or across any navigable water. Theoretically, if the project was not considered to “interfere substantially with navigations,” it could meet the terms of an exception to the approval requirement under s. 5(2). It should be noted that ministerial approval under s. 5(1)(a) of the NWPA is a CEAA Law List trigger (see discussion above).²⁰

8.3.5. *National Energy Board Act (NEBA)*²¹

The National Energy Board (NEB) is generally responsible for energy projects of an interprovincial or international nature. Specific to tidal power projects in the Bay of Fundy, if a project crosses provincial boundaries, extends beyond the territory of a province, or includes an interprovincial (s. 58.4) or international (s. 58.1) power line, a certificate (s. 58.16) or permit (s. 58.11) must be obtained from the National Energy Board pursuant to Part III.1 of the NEBA.²² It is unlikely that the NEBA will apply to the construction and operation of most tidal energy project projects. If infrastructure improvements are needed to export some or all of the electricity generated from the tides of the Bay of Fundy to New England, a certificate of public convenience and necessity would be required. These permits and certificates may be subject to “terms and conditions respecting the matters prescribed by the regulations as the Board considers necessary or desirable in the public interest” (s. 58.35). In the issuance of permits the board may consider “the impact of the construction or operation on the environment” as well as “the effect of the power line on provinces other than those through which the line is to pass” (s. 58.14).

Complexities regarding overlapping authority or interests between provincial powers and the NEB have, in some cases, been dealt with through memoranda of understanding (MOUs). For example, provincial energy bodies in both Alberta and British Columbia have an MOU with the NEB.²³ Similarly,

¹⁹ *Navigable Waters Protection Act*, R.S.C. 1985, c. N-22 [hereinafter NWPA].

²⁰ Law List Regulations, n. 14 above, Schedule 1, item 11(a).

²¹ *National Energy Board Act*, R.S.C, c. N-6 [hereinafter NEBA].

²² The Supreme Court of Canada considered the limits of federal jurisdiction in *Westcoast Energy v. Canada (National Energy Board)*, [1998] S.C.J. No. 27, [1998] 1 S.C.R. 322.

²³ The NEB-BC MOU is available: <<http://www.ogc.gov.bc.ca/documents/newsreleases/OGC%20and%20NEB%20MOU.pdf>> (retrieved 20 November 2008).

the NEB, the Canada-Newfoundland and Labrador Offshore Petroleum Board (C-NLOPB) and the Canada-Nova Scotia Offshore Petroleum Board (C-NSOPB), together with executives from the Newfoundland, Labrador and Nova Scotia Departments of Energy and Natural Resources Canada (NRCan), have formed the Oil and Gas Administrators Advisory Council (OGAAC)²⁴ to deal efficiently with issues in their sector. A cooperative approach in the tidal energy sector can help address some of the complexities in identifying the respective roles of federal and provincial energy agencies and departments, but there are limits to the ability of the two levels of government and their agencies to avoid dealing with jurisdictional issues through cooperation.²⁵

8.4. The Provincial Regulatory Framework²⁶

As discussed, provincial jurisdiction over the Bay of Fundy remains unresolved. It is not surprising therefore, that there are only limited signs that the province has applied its regulatory regime below the low water mark in marine waters around Nova Scotia. The Nova Scotia *Environment Act*, for example, has until recently not been applied to activities in the Bay of Fundy. There is some indication that this is changing. Tidal energy developments, for example, have been added as undertakings requiring approval under the provincial environmental assessment process.²⁷

Other provincial laws may apply but no formal steps have been taken to date to clarify their role. Some of the key provincial regulatory provisions that may have relevance for tidal power are briefly summarised below, all with the understanding that their actual application depends on the constitutional issues briefly raised above (i.e., is the area within or outside the province) and decisions at the provincial level to extend their application to marine waters below the low water mark.

The Alberta MOU is available: <<http://www.neb.gc.ca/clf-nsi/rpblctn/ctsndrgltn/mmrndmndrstdng/lbrtnrgtltbrd200601-eng.pdf>> (retrieved 20 November 2008).

²⁴ See *Canada Oil and Gas Operations Act*, R.S.C. 1985, c. O-7, s. 5.4

²⁵ See Doelle et al., n. 10 above, p. 42.

²⁶ This section is an updated version of the author's contribution to Doelle et al., id., p. 45.

²⁷ *Environmental Assessment Regulations*, O.I.C. 95-220 (March 21, 1995), N.S. Reg. 26/95, as amended up to O.I.C. 2008-414 (August 6, 2008), N.S. Reg. 348/2008, Schedule A, Section D(2)(a).

8.4.1. *Nova Scotia Environment Act (NSEA)*²⁸

Part IV of the NSEA requires an environmental assessment for certain tidal energy projects. Tidal energy projects over 2 MW are listed as Class I undertakings in Schedule A of the regulations. There are also general categories under energy in the list of Class II undertakings that may apply to tidal power projects.

Class I and II undertakings have to be registered with the Minister in accordance with the *Environmental Assessment Regulations*. No work can be commenced on a project that falls within Class I or II until the Minister has granted an approval following the conclusion of the EA process (s. 32(1)). Section 47 of the NSEA would also likely apply if the undertaking is also subject to the environmental assessment or other review requirements of a municipality or the federal government (as discussed above, a likely scenario for this project). Section 47 allows the Minister to enter into an agreement with the other government to carry out a joint assessment.

Part V and VI of the NSEA dealing with approvals and releases will also be applicable. Part V requires an approval for any activity so designated by regulations. It establishes the process for granting approvals, imposing terms and conditions and for changes to approvals. Part VI prohibits activities that may cause an adverse effect unless authorised by an approval under Part V. These provisions combine to require approvals of listed activities and other activities that may have adverse environmental effects. Most importantly, an approval can be used effectively to ensure implementation of any conditions and mitigation measures identified during the EA of a particular project. While tidal power projects may not meet the description of activities currently listed under Part 9 of Division V of the activities designation regulations for approval, the Minister would have the discretion under Division VI of the regulations to add tidal power projects to the list.

8.4.2. *Fisheries and Coastal Resources Act (FCRA)*²⁹

This Act, which *inter alia* deals with the approval of aquaculture operations, provides a rare example of the application of provincial laws to marine waters below the low water mark. Depending on the precise location of the tidal resource to be developed, there may be geographic and ensuing conflicts involving existing property interests. At present, licenses or leases to carry on

²⁸ *Nova Scotia Environment Act*, S.N.S. 1994-95, c. 5.

²⁹ *Fisheries and Coastal Resources Act*, S.N.S. 1996, c. 25.

aquaculture are issued by the Minister pursuant to the FCRA (Part V). Under s. 52(1)(a) a lease “shall be granted for a specific geographic area...”. The initial term of the lease is ten years “with a right of renewal by the licensee, at the Minister’s option, for further terms of five years each” (s. 52(2)(a)). By s. 51(3) or s. 52(2)(g) the lease can be terminated for various unmet conditions.

There is at least a theoretical potential for conflicting uses involving aquaculture and tidal projects. Relevant to this are s. 52(3) and s. 44(3) which both acknowledge the aquaculture lease-holder’s exclusive right to the water column and sub-aquatic land described in the license. There does not appear to be a provision considering a circumstance arising during a license term where a grantee would be asked to change the location of the operation. There are provisions allowing the Minister to impose certain conditions and restrictions on a lease (s. 56) and for the Minister to terminate a lease in the event of a breach of terms or conditions of the lease (s. 52 and s. 58) and for the Minister to decide between two competing aquaculture lease applications. However, there is no explicit discussion of ministerial discretion to move an aquaculture lease in the event of competing interests between aquaculture and other marine interests.

Obviously, more specific data are required in terms of development-friendly tidal power areas and existing aquaculture leases. But this potential conflict may not materialise if tidal energy is developed in areas with high current velocities that are unsuitable for aquaculture projects. Similar potential conflicting uses will have to be explored for other existing and potential uses of the Bay of Fundy, such as fishing, tourism, recreation, biodiversity, and potential for other resource extraction activities.

8.4.3. Endangered Species Act (ESA)³⁰

The key obligations under the ESA apply only to listed endangered or threatened species. The Act essentially prohibits interference with such species unless specifically authorised in the ESA or through a permit or approval. Sections 13 and 14 of the Act include the key provisions on prohibitions and permits with respect to listed species.

Listed species that may be affected by the use of coastal lands for a tidal power project include the Piping Plover (*Charadrius melodus*) and two species of flora indigenous to Southwestern Nova Scotia bogs and wetlands, the thread-leaved sundew, eastern mountain avens. Consistent with the application of the

³⁰ *Endangered Species Act*, S.N.S. 1998, c. 11 [hereinafter ESA].

Act to the low water mark, marine species such as leatherback turtles, right whales and other endangered species found in the Bay of Fundy are not listed.³¹

Other provincial statutes may also apply depending on where related infrastructure, such as transmission lines or service infrastructure, makes landfall. They include the *Provincial Parks Act*, the *Beaches Act*, and the *Wilderness Areas Protection Act*.³²

8.4.4. Energy Resources Conservation Act (ERCA)³³

The purposes of this Act suggest that it may be able to play a role in the strategic development of Nova Scotia's tidal power resources. The Act aims to regulate and ensure efficient practices in the exploration for and development, production, transmission and transportation of energy resources (s. 3(b)); provide for the economic, orderly and efficient development in the public interest of energy resources (s. 3(d)); appraise the reserves and production capacities of energy resources (s. 3(e)); and appraise the need for energy resources and appraise markets outside the province for the province's energy resources (s. 3(f)).

It is important to note that Section 3 does claim jurisdiction beyond the low water mark. It states that, "This Act applies to all Nova Scotia lands, which means the land mass of Nova Scotia including Sable Island, and includes the seabed and subsoil off the shore of the land mass of Nova Scotia, the seabed and subsoil of the continental shelf and slope and the seabed and subsoil seaward from the continental shelf and slope to the limit of exploitability." The ERCA authorises the creation of regulations pertaining to development of energy resources in Nova Scotia, which could include tidal energy. To date this legislative authority has primarily been employed to create regulations for the offshore and onshore oil and gas sector.

³¹ For the most up-to-date list of wildlife species protected under the ESA in Nova Scotia as established by the Species at Risk Working Group (pursuant to s. 9), available: <<http://www.gov.ns.ca/natr/wildlife/endngrd/specieslist.htm>> (retrieved 20 November 2008).

³² *Provincial Parks Act*, R.S.N.S. 1989, c. 367; *Beaches Act*, R.S.N.S. 1989, c. 32; and *Wilderness Areas Protection Act*, S.N.S. 1998, c. 27.

³³ *Energy Resources Conservation Act*, R.S.N.S. 1989, c. 147, s. 1; S.N.S. 2000, c. 12, S.N.S. 2001, c. 15.

8.4.5. *Electricity Act*³⁴

The Electricity Act has changed the landscape of Nova Scotia's electricity sector. First, it authorises regulations regarding "renewable energy standards" in the form of a Renewable Portfolio Standard (RPS) system. This system mandates electricity providers to supply a certain proportion of electricity generated from renewable energy sources. It includes a target of 5 percent by 2010 and 10 percent by 2013.³⁵ Second, the Act mandates Nova Scotia Power Inc. (NSPI) to develop an Open Access Transmission Tariff. This will open the Nova Scotia electricity market to more inter-provincial and international import and export, while also allowing "any competitive supplier" to supply electricity to NSPI or one of the six municipal electricity suppliers. This means that a tidal project whether privately or publicly owned and operated will be able to sell electricity generated to NSPI or to any of the municipal suppliers, all of whom would be mandated to comply with the RPS.

8.4.6. *Public Utilities Act (Utilities Act)*³⁶

The Utilities Act primarily deals with the procedural activities of the Utility and Review Board (UARB) and its regulatory powers over NSPI. This act may be implicated in a number of ways depending on the specifics of the construction process, as well as the parties involved. Currently, the power of the UARB does not appear to extend to the market for tidal power produced by private producers independent of NSPI. In the context of the UARB rate hearings in 2004, the Board found that the Utilities Act did not authorise the Board to consider the appropriateness of rates offered by NSPI to independent energy producers.³⁷ For tidal power in Nova Scotia, this would suggest that the market, not the government, currently controls the price to be paid to producers (at least for provincial markets). Given that NSPI is still essentially a vertically

³⁴ *Electricity Act*, S.N.S. 2004, c. 25.

³⁵ *Renewable Energy Standard Regulations*, O.I.C. 2007-42 (January 22, 2007, effective February 1, 2007), N.S. Reg. 35/2007, as amended by O.I.C. 2007-569 (October 30, 2007), N.S. Reg. 416/2007.

³⁶ *Public Utilities Act*, R.S.N.S. 1989, c. 380 [hereinafter *Utilities Act*].

³⁷ Rather it is solely concerned with charges to be paid by customers. See Nova Scotia Utility and Review Board, *In the Matter of The Public Utilities Act -and- In the Matter of Nova Scotia Power Incorporated and complaints from seven individuals concerning the rates and conditions set out by NSPI in its solicitation for renewable energy under 2 megawatts*, NSUARB 118 (2004), available: <<http://www.canlii.org/ns/cas/nsuarb/2004/2004nsuarb118.html>> (retrieved 20 November 2008).

integrated monopoly, it controls the price, subject only to UARB oversight as to whether NSPI has paid more than necessary for its power. Increasing the percentage of renewable energy required under the existing RPS might be a way to influence the price NSPI would be willing to pay for tidal power. If the RPS is sufficiently high that NSPI cannot meet it using wind alone, it would be required to purchase tidal power even if the price was higher than wind power. Other factors, such as the predictability of tidal power would likely also influence NSPI's choice. An alternative would be to determine a fixed or minimum price for each form of renewable energy. This is generally referred to as the feed-in tariff approach. It would in effect allow the province to set the price to be paid by NSPI for tidal power produced.³⁸

8.4.7. *Environmental Goals and Sustainable Prosperity Act (EGSPA)*³⁹

The EGSPA sets the overall goal of fully integrating environmental sustainability and economic prosperity. In the process, the province seeks to become an international leader in environmental sustainability while achieving economic prosperity above the Canadian average by the year 2020. The Act sets more specific targets that are relevant to the development of tidal energy, including goals with respect to greenhouse gas emissions and the use of renewable energy for the generation of electricity. The overall goals and specific targets may not directly translate into decisions on whether, where, when and under what conditions to encourage or permit tidal power development, but they are likely to provide important context for future decisions on this new industry.

This part this contribution has reviewed the existing regulatory context which faced federal and provincial decision makers when tidal development proposals first came to their attention. A few regulatory updates since implemented, some to begin to prepare for the arrival of this new industry, others for other reasons, have also been included in this analysis. In the next section, we consider the most significant departure at the provincial level from past approaches, the initiation of a SEA to consider whether, where and under what conditions offshore renewable energy development should be encouraged and approved in the Bay of Fundy. This review of the SEA process will take place in three stages. First, key literature on SEA is briefly highlighted, followed by an overview of the Bay of Fundy SEA process. This is followed

³⁸ See J. Lipp, "Lessons for effective renewable electricity policy from Denmark, Germany and the United Kingdom," *Energy Policy* 35 (2007): 5481–5495.

³⁹ *Environmental Goals and Sustainable Prosperity Act*, S.N.S. 2007, c. 7.

with an overview of the outcomes of the SEA process. Finally, a preliminary evaluation of the Bay of Fundy SEA in light of key conclusions from the literature on what constitutes an effective SEA process is provided.

8.5. The SEA Process

Strategic environmental assessments in Canada are not new. Federally, there has been a Cabinet Directive in place on SEAs for well over a decade,⁴⁰ and under the EARP Guidelines Order,⁴¹ there was provision for non-project EAs. Some provinces, including Nova Scotia, also allow for environmental assessments of policies, plans and programmes. In short, SEA is not without precedent in Canada. At the same time, it is still very difficult to grasp the concept of SEA, as it means different things to different people and is practised very differently across jurisdictions. Some definitions, such as the one in the Cabinet Directive, see it primarily in the context of major Cabinet decisions. Others view SEA as an overriding concept that covers all environmental assessments that go beyond individual projects.⁴²

⁴⁰ Privy Council Office and the Canadian Environmental Assessment Agency, *The Cabinet Directive on the Environmental Assessment of Policy, Plan and Program Proposals* (Ottawa: Minister of Public Works and Government Services Canada, 1990); Privy Council Office and the Canadian Environmental Assessment Agency, *The Cabinet Directive on the Environmental Assessment of Policy, Plan and Program Proposals* (Ottawa: Minister of Public Works and Government Services Canada, 1999); and Privy Council Office and the Canadian Environmental Assessment Agency, *The Cabinet Directive on the Environmental Assessment of Policy, Plan and Program Proposals* (Ottawa: Minister of Public Works and Government Services Canada, 2004).

⁴¹ *Environmental Assessment and Review Process Guidelines Order*, S.O.R./84-467, 22 June 1984. For a more detailed description of the EARP process, see R. Northey, *The 1995 Annotated Canadian Environmental Assessment Act* (Toronto: Carswell, 1994), p. 21.

⁴² For an assessment of the federal cabinet directive on SEA, see S. Hazel, and H. Benevides, "Federal Strategic Environmental Assessment: Toward a Legal Framework," *Journal of Environmental Law and Practice* 7 (1997): 349. See also F. B. Nobel, "Strategic Environmental Assessment," in K. S. Hanna, ed., *Environmental Impact Assessment: Practice and Participation* (Oxford: Oxford University Press, 2005), p. 93.

8.5.1. SEA Literature

Dalal-Clayton and Sadler consider a number of definitions of SEA in their 2005 book on international experience with strategic environmental assessments.⁴³ The authors note that early definitions were closely linked to project assessments, essentially broadening the scope of project assessments to include policies, plans and programmes. The focus of these early processes was on initiatives that were already proposed. According to the authors, more recent definitions take a broader perspective. First, the trend is toward the inclusion of environmental, economic and social considerations. Increasingly, SEA is seen as a tool for the development of policies, plans and programmes. For purposes of the discussion here, the concept of SEA incorporates at least the following:

- An environmental assessment that goes beyond a single project to consider an industry sector, a region, or a particular policy, plan or programme.
- A SEA can be *reactive* in response to the proposal of a particular project, e.g. the first proposal to introduce a new technology or a new industry, such as a liquefied natural gas facility or in-stream tidal energy technology. In such a case the assessment will need to extend beyond the individual project to look at the whole technology or industry sector or region.
- A SEA can be *reactive* in response to a proposed policy, plan or programme initiated for economic reasons, such as the Free Trade Area of the Americas initiative.
- A SEA can be *proactive* in response to an identified sustainable development or environmental challenge, such as a SEA leading to the development of an energy policy that encompasses a range of environmental, social and economic concerns related to climate change, air pollution and energy security.
- A SEA can be *proactive* in response to a policy gap or an outdated policy identified in the context of a project EA.

It is clear from this list that SEA can be used in a variety of contexts, with different needs and outcomes. Nevertheless, there appears to be general agreement on the basic steps and principles that should guide SEA processes. The steps proposed are certainly similar to project EAs. The basic principles

⁴³ B. Dalal-Clayton and B. Sadler, *Strategic Environmental Assessment* (London: Earthscan, 2005).

proposed, that SEA processes should be integrated, sustainability led, focused, accountable, participative, and iterative, are also familiar from project EAs.⁴⁴ Dalal-Clayton and Sadler propose a number of more specific principles for effective SEAs.⁴⁵ The authors conclude that SEA should be focused on basic objectives and how to achieve them, that SEA should identify desired future outcomes and consider fully alternative ways of achieving these outcomes, that SEA should be objectives led, that SEA should be proactive, that it should be integrated, that its focus should be broad, and that it should be tiered.⁴⁶ These are all principles familiar from literature on project EA.⁴⁷

There is now growing experience with SEA around the world.⁴⁸ Dalal-Clayton and Sadler provide a detailed review of SEA experience in developed nations, international institutions, economies in transition, and developing nations. SEA practice is starting to expand dramatically within the European Union as a result of its 2001 directive on SEA.⁴⁹ Although some EU Member States had experience with SEA prior to the implementation of the directive in 2004, it was limited. In the United States, experience with SEA goes back to the early days of the *National Environmental Policy Act*. While the experience with SEA goes back 35 years, its use has been limited in the United States. Other developed nations, including Australia, New Zealand, and Japan, have also experimented with SEA.⁵⁰

International development institutions, such as the World Bank, regional development banks, the United Nations Development Programme, as well as international development institutions of several developed nations, have either started to implement SEA processes or carried out some SEAs on an ad hoc basis. SEA experience in economies in transition and developing nations is growing rapidly. Many economies in transitions began to implement SEAs in the 1990s, and several developing nations are now experimenting with SEA.⁵¹

A recent report commissioned by the Canadian Environmental Assessment Agency identified the following elements of an effective SEA process:

⁴⁴ See Doelle, n. 4 above, p. 29.

⁴⁵ Dalal-Clayton and Sadler, n. 43 above, Box 2.4 at p. 15.

⁴⁶ See F. B. Nobel, "Strategic Environmental Assessment," in K. S. Hanna, ed., *Environmental Impact Assessment: Practice and Participation* (Oxford: Oxford University Press, 2005), p. 93.

⁴⁷ M. Doelle, *The Federal Environmental Assessment Process: A Guide and Critique* (Markham, Ont.: LexisNexis Butterworths, 2008), p. 29.

⁴⁸ For a discussion of international instruments on SEA, see Doelle, n. 4 above, p. 41.

⁴⁹ EC, Council Directive 01/42 of June 27, 2001, on the assessment of the effects of certain plans and programmes on the environment [2001] *Official Journal* L 197/30. See also Dalal-Clayton et al., n. 43 above, p. 36.

⁵⁰ Dalal-Clayton et al., n. 43 above, pp. 54, 88, and 109.

⁵¹ *Id.*, pp. 128, 180, and 237.

1. The SEA should be applied early and proactively.
2. The SEA should integrate the biophysical (or “environmental”), social and economic aspects, and be integrated within larger planning and decision-making processes.
3. The SEA should take into account its place within the other “tiers” or levels of assessment – for example, a policy, plan or programme (PPP) decision will influence a project decision. Assessments of lower tier initiatives (plans or programmes) or project assessments may also influence improvements in a policy or other higher tier. Improved assessments at all levels, as well as the practical benefit that the overall assessment process is “streamlined”, are the benefits of tiering.
4. The process must be guided by regulatory, policy and/or other form of guidance. “Guidance” suggests the need for a standard of assessment that must be met, as well as the need for consistency and the opportunity for improvement through ongoing strengthening and clarification of the guidance.
5. The process must be flexible and adaptable.
6. The process must be transparent and include opportunities for public involvement throughout.
7. The most effective incentives or sources of motivation must be in place in order to ensure the process is adhered to. One of the lessons from 30 years of project EA is that it is possible to mandate government decision makers to follow an EA process, but it is difficult to force an unmotivated, unwilling decision maker to implement the process so as to maximise its influence on future decisions and to actually make better decisions based on the results of the process. This means that in the design of SEA, careful thought will have to be given to the motivation for decision makers to use the results of the SEA to make better decision.
8. The assessment must be followed up in terms of actual performance, as well as actual effects, compared with predictions, and in terms of improving future PPPs as well as improving the assessment process itself.
9. The political will necessary for putting in place and implementing an assessment regime must exist. Much of the momentum for implementing an effective SEA process will only be realised when decision makers are shown the benefits of putting the above factors in place. Key decision makers should be participants in the design, establishment and implementation of the regime. By participating in the process, decision makers are more likely to see the benefits of following

the recommendations, understand the subtleties of the conclusions reached, and appreciate the risk of deviating from the results in terms of community and stakeholder support for future government decisions.⁵²

8.5.2. The Tidal SEA Process

The Tidal SEA process was initiated as a result of a request by the Nova Scotia Department of Energy to the Ocean Energy and Environment Research Association (OEER). OEER is a not-for-profit corporation established in 2006 with funding from the province of Nova Scotia. The members of the association are Acadia University, St. Francis Xavier University, and the NS Department of Energy. OEER is a collaboration between the provincial government and academic institutions in Nova Scotia interested in research on the environmental implications of ocean energy development around Nova Scotia. The Association funds research in two broad areas, one dealing with the environmental impacts of offshore oil and gas exploration, the other dealing with offshore renewable energy, particularly tidal energy.⁵³ OEER was formally asked to carry out the SEA in April, 2007. The letter of agreement states as follows:

The objective of the SEA is to assess social, economic and environmental effects and factors associated with potential development of renewable energy resources in the Bay of Fundy with an emphasis on in-stream tidal. The SEA will inform decisions on whether, when, and under what conditions to allow pilot and commercial projects into the water in the Bay of Fundy and under what conditions renewable energy developments are in the public interest over the long term.⁵⁴

The Minister asked OEER to complete its work on the SEA within 12 months, and with a \$250,000 budget. OEER then contacted the province of New Brunswick, who has claims similar to Nova Scotia over portions of the

⁵² D. Kirchoff et al., *Law and Policy Options for Strategic Environmental Assessment in Canada*, Report submitted to Canadian Environmental Assessment Agency (January 2009), on file with author, forthcoming, online: <www.ceaa.gc.ca>.

⁵³ For general information on OEER and its mandate with respect to tidal energy research, see online: <<http://www.offshoreenergyresearch.ca>> (retrieved 20 November 2008).

⁵⁴ See OEER Association, *Fundy Tidal Energy Strategic Environmental Assessment Final Report* (Halifax: OEER Association, April 2008), p. 3, available: <<http://www.bayoffundyseas.ca>> (retrieved 20 November 2008) [hereinafter SEA Report].

Bay of Fundy not claimed by Nova Scotia. New Brunswick decided to carry out its own SEA process, but agreed to contribute funding for the background research, so that this work could include all of the Bay of Fundy and provide the scientific foundation for both SEA processes. The Nova Scotia SEA process was placed in the hands of a subcommittee of OEER made up of 15 individuals representing the governments of Nova Scotia, New Brunswick and Canada, fishing and environmental interests, academics with backgrounds ranging from engineering and biology to law, and a retired civil servant.⁵⁵

The SEA process designed by OEER consisted of the following key components:

- An interactive website to provide information and seek input throughout the SEA process (www.bayoffundyse.ca).
- A newsletter published regularly throughout the SEA process and posted on the SEA website.
- Informal meetings with stakeholders on request.
- Regular meetings of the OEER subcommittee to guide the process.
- A consultant, Lesley Griffiths, hired to serve as the “process-lead” for the SEA process, including chairing public meetings and writing the final report under the direction of the OEER subcommittee.
- Six community forums held in August 2007 in affected communities in Nova Scotia.
- Two rounds of participant support funding for community based research and to provide opportunities for community groups to meet and discuss their perspectives about the potential arrival of this new industry in the Bay of Fundy.
- A background report prepared by an environmental consulting firm on the current state of knowledge of the various proposed technologies, the receiving environment, the potential interactions between the technologies and the receiving environment, and the potential socio-economic impacts of renewable energy development in the Bay of Fundy.
- A round table of about 25 interested stakeholders that met with members of the OEER subcommittee approximately once a month between October 2007 and April 2008.⁵⁶

⁵⁵ Id., p. 5.

⁵⁶ Id.

Early efforts to engage Nova Scotians were designed primarily to identify key issues to be addressed through the SEA process. The OEER subcommittee decided that the scope of the SEA would be limited geographically to the Bay of Fundy and substantively to ocean renewable energy. The process remained open throughout to any issue relevant to informing decisions about whether, where and under what conditions offshore renewable energy should be permitted or encouraged in the Bay of Fundy. The main purpose of the various efforts early in the process to engage affected communities and key stakeholders was to identify what issues the SEA should focus on, while leaving it open to participants throughout the process to raise new issues and to bring up new concerns.

The main vehicles for identifying issues of concern were some informal meetings with key stakeholders and the six community forums held in August, 2007. The forums in particular provided important guidance to the OEER subcommittee and the process lead on the values, concerns and priorities of affected communities, and potentially affected industry sectors such as fisheries and tourism. To this end, participants in the forums were asked two questions:

- What information is needed before decisions can be made about whether, where and under what conditions tidal energy should be permitted or encouraged in the Bay of Fundy?
- What information are you aware of that may be relevant to this process?

In parallel with the forums, OEER hired Jacques Whitford, an environmental consulting firm, to prepare a background report on the technologies, the receiving environment, and their potential interaction. Gathering the state of knowledge on offshore renewable energy technologies was a key component of this background report. It also served as a baseline study on the Bay of Fundy region. The study sought to clarify the state of knowledge as well as provide an objective assessment of information and knowledge gaps. The background report did not serve as an environmental impact statement, nor was it a draft SEA report.

The background report was intended to serve as a starting point for the SEA process. As such, it sought to identify the state of knowledge and to encourage participants to consider the implication of the state of knowledge for the SEA process. Inevitably, in case of an evolving technology proposed in a relatively undeveloped area, information on the technologies, the receiving environment and their interaction will be limited. A critical component of the background report was therefore the objective assessment of information gaps to serve as a basis for discussing what decisions could be made with existing information and

what decisions had to be delayed until certain information gaps had been filled. Unfortunately, the backgrounder was delivered late. Due to the tight timeline for the overall SEA process, it was introduced part way through rather than at the beginning of the SEA consultation process.⁵⁷

Given the short time frame and the limited resources available to carry out the SEA, there clearly was no real opportunity to fill the information gaps identified. Some effort was, nevertheless, made to encourage community groups to supplement the information provided through the backgrounder. Limited participant funding was made available to a total of seven aboriginal, community, environmental and fisheries groups.⁵⁸ Funding enabled community meetings and some community-based research on issues of importance to participating organisations. Topics covered included native fisheries in the Bay of Fundy, how to enable community benefits from tidal energy development, integrated resource management in the Bay of Fundy, research on submerged ice, and the gathering of local and traditional knowledge relevant to the SEA.⁵⁹

The Round Table commenced its work after the conclusion of the community forums. Interests represented on the Round Table include municipalities, fisheries, aquaculture, community development, environmental organisations, tourism, marine transportation, the local power utility, and tidal developers. It met a total of seven times between October 2007 and April, 2008. The Round Table first considered how decisions on tidal and other offshore renewable energy in the Bay of Fundy should be made. Members eventually settled on a set of sustainability principles adapted from principles proposed by Robert Gibson.⁶⁰ It then reviewed the background report prepared by Jacques Whitford and discussed a range of specific issues of particular concern to members of the Round Table.⁶¹

Given the time available, and diversity of interest and perspectives, a surprising level of consensus was reached. At the same time, it must be recognised that the limited time and resources, as well as the size of the round table, made a deeper level of agreement on the substance impossible. As a result, many of the SEA recommendations are general in nature. They will require ongoing engagement of stakeholders to become meaningful and clear,

⁵⁷ J. Whitford, *Background Report for the Fundy Tidal Energy SEA* (January 2008), available: <<http://www.bayoffundysea.ca>> (retrieved 20 November 2008).

⁵⁸ See “SEA Participation Support Funds,” available: <<http://www.bayoffundysea.ca>> (retrieved 20 November 2008).

⁵⁹ For information on the funding programme and the results of funded initiatives, see online: <<http://www.bayoffundysea.ca>> (retrieved 20 November 2008).

⁶⁰ See R. B. Gibson, S. Hassan, S. Holtz, J. Tansey, and G. Whitelaw, *Sustainability Assessment: Criteria and Processes* (London: Earthscan, 2005), pp. 217–236.

⁶¹ For information on the Round Table, see online: <<http://www.bayoffundysea.ca>>.

and to ensure that some of the unresolved issues underlying these general recommendations are not forgotten as time passes.

Following the conclusion of the Round Table process, the OEER subcommittee under the guidance of the process-lead, Lesley Griffiths, prepared the SEA report. The report was submitted to the provincial government on 1 May 2008. A final round of hearings in May of 2008 sought further feedback on this report. OEER submitted a community comment report that summarised the final feedback received by way of follow-up to the SEA report. In July, 2008, the province released its response to the SEA report.⁶²

Perhaps the greatest challenge to the SEA was that halfway through the process, the province of Nova Scotia invited proposals to construct and operate a research facility to test in-stream tidal turbines in the Bay of Fundy. Around the same time, it invited developers of in-stream technology to apply to test their technologies in this research facility and to indicate desired location, water depth and current speed. It announced the successful bidder for the construction and operation of the research facility before the SEA was concluded. It also announced three developers who would be permitted to test their turbines in the research facility.⁶³

While the province made it clear that the results of this process were subject to the SEA, many participants in the SEA process were understandably sceptical that the SEA process would have an impact on whether, where and under what conditions the research facility would be permitted to proceed. A secondary concern with this parallel process was that it resulted in developers being less engaged in the SEA process than they otherwise might have been.

8.5.3. SEA Outcomes

The SEA report included 29 recommendations to the province of Nova Scotia. The recommendations were supported by all members of the OEER subcommittee and were generally supported by the round table. Time and resource constraints prevented formal endorsement by the round table of the specific language of some of the recommendations. The intent of

⁶² NS Department of Energy, *Bay of Fundy Tidal Energy: A Response to the Strategic Environmental Assessment* (Halifax: NS Department of Energy, July 2008), available: <<http://www.bayoffundyseas.ca>> (retrieved 18 November 2008).

⁶³ For information about the three pilot projects selected as a result of this process, see online: <<http://www.gov.ns.ca/energy/renewables/public-education/tidal.asp>> (retrieved 18 November 2008).

recommendations was, however, supported by all members of the round table. The following summarises some of the key recommendations included in the report and offers some indication of the government response:

- The report recommends that the province adopt and apply ten sustainability principles as a framework for decision making on renewable energy development in the Bay of Fundy. Specifically, the SEA recommends that (1) the resource remain under government ownership and management, (2) the resource be developed in a way that ensures net reductions in greenhouse gas emissions, (3) federal and provincial governments should cooperate in the management of the resource, (4) decisions about commercial development should only be made incrementally and after technologies are proven to be environmentally sound, (5) effects on other users of the Bay of Fundy that cannot be mitigated must be fairly compensated, (6) net social and economic benefits over the long term should be ensured and maximised, (7) community development should be a priority, (8) decisions should be made in the context of an integrated management approach, and (9) decisions should be made in a transparent manner.
 - The government response seeks to demonstrate how some of the principles have been acted on, but falls short of endorsing the ten principles as a basis for decision making.⁶⁴
- The report recommends that pilot in stream tidal projects be permitted to proceed carefully and incrementally.
 - The government response accepts this recommendation.
- The report seeks assurances for ongoing consultations and participation in decision making and for the development of a community participation and benefits strategy.
 - The government response accepts these recommendations to a limited extent, but does not provide any detail on how ongoing consultations will be carried out or that it intends to build upon the mechanisms developed through the SEA. The absence of any specific measures on socio-economic impacts generally and on maximising community benefits specifically is of concern given that this was clearly identified as a significant information and knowledge gap in the SEA.
- The report recommends that the province develop legislation and amend existing legislation. The SEA proposes that the legislation should

⁶⁴ NS Department of Energy, n. 62 above, p. 18.

encourage the development of marine renewable energy resources in a safe and environmentally sound manner. It should require interested parties to obtain licenses for the rights to develop the resource. Such licenses should be conditional on undertaking activity that will promote timely development. The legislation should provide for immediate disclosure of all environmental information and, after appropriate confidentiality periods, disclosure of technical information related to the resource. The legislation should provide for the province to receive revenues from the licensing and/or development of the resource and provide opportunities for affected communities to benefit from the development. Finally, the SEA proposes that the legislation provide incentives for the net reductions of greenhouse gases in the province.

- The government response accepts in principle the recommendation for provincial legislation, but with few specifics in content or timing. The government response does outline the following possible elements of provincial tidal energy legislation:
 - Crown title in the resource in its natural state
 - licensing requirement for exploration
 - subject to regulatory compliance and plan approvals, the right of an explorer to move to commercial production
 - royalties and/or benefits representing the economic value of the resource in its natural state
 - operational oversight to ensure compliance with laws, permits, and obligations⁶⁵
- The report recommends that a research agenda be developed to fill knowledge gaps.
 - The government response identifies some specific initiatives that it plans to undertake to fill these gaps.
- The report recommends that efforts be made to maximise local benefits from any development of renewable energy in the Bay of Fundy.
 - There is some reference to specific benefits in the government response, but no clear proposal.
- The report recommends that the province place a high priority on conservation, efficiency and carbon credit trading.
 - The province points to its pending energy strategy and climate change action plan, but without any specific commitment to these priorities.⁶⁶

⁶⁵Id., p. 16.

- Capacity of the power grid in Nova Scotia to accept power from tidal power projects is identified as an important issue in need of further study.
 - There is no formal acceptance of the recommendation. The response from the province instead explains what has been done to address this issue. Clearly, there is a difference of opinion on whether grid capacity will be an issue.
- The potential for impacts on other users is identified as an issue. The report recommends an integrated approach to resource management in the Bay of Fundy.
 - The provincial response makes a general commitment. However, as with some other responses, the government focuses on what it has done rather than on what it will do.⁶⁷

In sum, the provincial response is generally positive, but it is not always clear whether the government fully supports the specific recommendations. The lack of clarity in the response is surprising given the direct involvement of officials from the Departments of Energy and Environment in the design and implementation of the process as well as the development of the 29 recommendations. In some cases the response rephrases the recommendations without a clear indication of whether the government agrees or disagrees, or as to the nature of any disagreement. This may in part be a reflection of the ad hoc nature of the process. It may be a reflection of the limited time and resources devoted to the exercise, or it may indicate that key decision makers were not sufficiently involved in the process to fully concur with the process and the results. In addition to responding to the recommendations, the government highlighted the following measures:

- The government committed to providing funding and finding other ways of encouraging the research needed to fill the information gaps identified through the SEA process.

⁶⁶ The energy strategy and the climate change action plan were released on 9 January 2009. The province announced the creation of an independent agency to oversee an ambitious demand side management programme to encourage conservation of electricity in the province. There is little in either plan on carbon credit trading. For more information, see Government of Canada, “Climate Change,” available: <<http://www.gov.ns.ca/nse/climate.change>> (retrieved 20 November 2008).

⁶⁷ NS Department of Energy, n. 62 above, p. 36.

- The province has decided to proceed with a demonstration facility for in stream tidal and with a demonstration programme for other forms of renewable energy.
- The government has committed to remove devices in case of adverse environmental effects.
- The government has confirmed the need to ensure compensation agreements are developed with other users of the Bay of Fundy.
- The government confirmed its desire to encourage collaboration with all affected jurisdictions and stakeholders.⁶⁸

It is too early to predict the long-term impact of the SEA on tidal energy governance. One of the most promising signs was how major stakeholders constructively engaged in the SEA process. Early and ongoing engagement likely played an important role in this. Opportunities for mutual learning were evident, even during the short duration of the process. For example, developers provided valuable insight into conditions for development for a variety of technologies. Members of the fishing industry offered valuable insight into local conditions, particularly some of the high current velocity passages. Other users were able to identify concerns over potential use conflicts. Exchanges on these issues at the round table allowed everyone to develop a better understanding of the range of potentially suitable sites. The long-term benefit of the SEA process may very well depend on whether the province is able to ensure continued engagement. If the engagement continues, it is likely that a cooperative approach to resource management and integrated planning in the Bay of Fundy will be possible. In the absence of empirical evidence as to the contribution of the SEA process to decision making on tidal energy, an evaluation against criteria from SEA literature will have to suffice for now.

8.5.4. Evaluation of the SEA Process

This section briefly evaluates the SEA process against criteria identified from the literature. The nine criteria applied are selected from the results of an international literature review on SEA appended to a September, 2008 options paper prepared for the Canadian Environmental Assessment Agency.⁶⁹ Academics and practitioners have stated the criteria of effective SEA in many

⁶⁸ Id., p. 5.

⁶⁹ Kirchoff et al., n. 52 above.

different ways.⁷⁰ The criteria cover the range of issues identified in the literature and are therefore used as a basis for the assessment of the NS Tidal Energy SEA.

1. The SEA should be applied early and proactively.

The tidal SEA process was applied both early and proactively. In contrast with a tidal SEA process carried out in Scotland,⁷¹ the NS process was applied prior to the pilot phase, before any tidal energy projects were approved in the Bay of Fundy. This was critical to the credibility of the process in communities around the Bay of Fundy. It also proved to be one of the greatest challenges, given that the province initiated a parallel process for the selection and approval of pilot projects half way through the SEA.

2. The SEA should integrate the biophysical (or “environmental”), social and economic aspects, and be integrated within larger planning and decision-making processes.

The SEA process did cover biophysical as well as social and economic aspects of the issue. However, the background study focused on the technologies and their interaction with the biophysical environment. The information available on the social and economic aspects of tidal energy development was limited. As a result, social and economic issues were raised, but few concrete recommendations were possible on how to address social concerns and how to maximise economic opportunities.

The SEA process was an ad hoc process. Therefore, it was not formally integrated with planning and other decision-making processes. The extent to which the SEA process will be integrated with existing EA and regulatory decision-making processes remains to be seen. Larger planning processes are lacking in this region, and it is too early to tell whether the SEA process will motivate the initiation of coastal management or other integrated planning processes in the Bay of Fundy region.

⁷⁰ For a summary of some of these perspectives, see Doelle, n. 4 above, pp. 29, 192.

⁷¹ For more information on the SEA carried out in Scotland, see The Scottish Government, “Wave Tidal SEA,” available: <<http://www.scotland.gov.uk/Topics/Business-Industry/Energy/19185/Resources/WaveTidalSEA>> (retrieved 20 November 2008).

3. The SEA should take into account its place within the other “tiers” or levels of assessment.

The tidal SEA process did take account of existing decision-making processes, such as the EA process and various regulatory processes. The results of the SEA process should improve EA and regulatory processes for pilot and commercial scale projects. The SEA process clearly sought to inform the future EA processes at the project level. It should make project EAs more efficient and allow key stakeholders to focus more quickly on key unresolved issues and information gaps. The constructive relationship among key stakeholders, if fostered on an ongoing basis, also bodes well for improved efficiency and effectiveness at the project EA level.

4. The process must be guided by regulatory, policy and/or other forms of guidance.

The process was an ad hoc process and, as such, not sanctioned under either the federal or provincial EA legislation. There were opportunities to sanction the process within the EA process under the *Nova Scotia Environment Act*. The opportunity was not pursued, mainly because the initiative for the SEA came from the Department of Energy, whereas the EA process is under the control of the Department of the Environment.

5. The process must be flexible and adaptable.

The process was flexible and adaptable within certain parameters. The flexibility of the process was limited mainly by funding and time. Both of these factors limited the ability to engage members of the public, efforts to achieve consensus on more controversial issues, and the ability of the SEA process to come to concrete conclusions on how to best maximise social and economic opportunities.

6. The process must be transparent and include opportunities for public involvement throughout.

The process was generally transparent. All relevant documents were available publically. All key documents were made available for public comment. The OEER subcommittee not only included members of key current users of the Bay of Fundy, but also members of local environmental organisations. All major interests were represented on the round table. Through

this process, all stakeholders had multiple opportunities to follow the process and provide input.

There were two rounds of public forums in key communities around the Bay of Fundy and in Halifax, the capital of Nova Scotia. There was limited funding to allow interested groups to meet and consider their position with respect to this new industry. There were opportunities throughout to provide input into the process through the website. No issues were ever formally excluded from the process. In addition, members of the public had opportunities to feed into the process through representatives on the round table.

Limitations of the process from a public engagement perspective include the special limitation to the communities around the Bay of Fundy and Halifax. With more time and resources, the process would have benefitted from broader engagement. First Nations participation was also limited, mainly due to confusion of the impact this process would have on the Crown's duty to consult and accommodate and more established engagement processes.⁷² These limitations can be overcome as the SEA process becomes an established part of the overall governance approach.

7. The most effective incentives or sources of motivation must be in place in order to ensure the process is adhered to.

It remains to be seen whether the results of the process will be followed. The limited funding and short time frame provided somewhat limited opportunities to build the profile of the SEA process and its outcomes. It is not clear whether there has been sufficient investment into the process and the results by stakeholders and government decision makers to ensure its implementation. The ad hoc nature of the process also poses some risk that the results may be ignored.

⁷² The problem that arose with respect to aboriginal engagement results from a set of Supreme Court of Canada cases that explored the scope of the Crown's duty to consult with aboriginal communities. In one of the cases, *Taku River Tlingit First Nation v. British Columbia (Project Assessment Director)*, [2004] S.C.J. No. 69, [2004] 3 S.C.R. 550 (SCC), the court concluded that affected aboriginal communities' involvement in the environmental assessment process was sufficient to meet the Crown's duty to consult. This decision has made aboriginal engagement in environmental assessment processes more difficult. For a good overview of the duty to consult issue, see R. F. Devlin, and R. Murphy, "Contextualizing the Duty to Consult: Clarification or Transformation?" *National Journal of Constitutional Law* 14 (2003): 167.

8. The assessment must be followed up in terms of actual performance, as well as actual effects, compared with predictions, and in terms of improving future policies, plans and programmes as well as improving the assessment process itself.

It remains to be seen to what extent this will happen.

9. The political will necessary for putting in place and implementing an assessment regime must exist. Much of the momentum for achieving it will be achieved when decision makers are shown the benefits of putting the above factors in place. Decision makers must therefore be participants in the design, establishment and implementation of the regime.

It remains to be seen whether the political will is in place to ensure the SEA process actually guides future decisions about tidal energy in the Bay of Fundy. As discussed above, key in this regard will be whether future government decision makers were adequately engaged in the process to appreciate the substance and overall value of the recommendations. Once all participants develop a level of comfort with the process and the quality of the substantive outcomes, it will likely be easier to develop more specific rules on how the results of an SEA process should guide lower tier decision-making processes, such as project EAs and regulatory approvals.

8.6. Conclusion

This study raises two important issues about the SEA process:

1. How to design and implement an effective SEA process to improve decision making, particularly with respect to the arrival of new industries (i.e., process options, inter-jurisdictional challenges, scope, public engagement, decision making)
2. How to position the SEA process within overall government decision making (i.e., how does it fit with higher tier planning and management, how will it feed into lower tier decision making, such as project EAs and regulatory approvals)

With respect to the first issue, it is too early for any final judgments about the effectiveness of the SEA process or its role in ensuring an effective governance approach to tidal energy in the Bay of Fundy, as most of the recommendations have yet to be implemented. It therefore remains to be seen to what extent the SEA will achieve its objective of ensuring decisions about this new industry are made in the long term best interest of the province of Nova Scotia.

Nevertheless, it is reasonable to conclude that the SEA process in Nova Scotia was a significant step forward in developing governance responses to new industries. It is encouraging that the province of Nova Scotia took a much more proactive approach to tidal energy than it did in response to the arrival to other industries in the past, such as aquaculture and offshore oil and gas. Based on this experience, a more formal SEA process could be developed to further improve decision-making processes for the future.

The tidal SEA process was limited by its ad hoc nature, making its relationship to lower-tier decision making on in-stream tidal more difficult to define. This limitation is best addressed by providing a clear legislative foundation for SEA. Such legislation would presumably establish rules on when an SEA is to be carried out and on the process to be followed. Most importantly for purposes of the issue raised here, the legislation could define how, when and for how long the results of an SEA will have to be considered in future government decision making related to the subject matter of the SEA.

The tidal SEA process was also limited in terms of the time and resources available. Knowledge gaps were identified but generally not filled. A number of issues, such as which approach to tidal energy is most likely to maximise long-term benefits to Nova Scotia (particularly rural development benefits) were identified but not resolved.

For these reasons alone, the implementation stage will be critical.⁷³ This stage has to address knowledge gaps and continue the dialogue on values and priorities and how best to pursue them. For example, should the focus be on making the Bay of Fundy a testing, research and manufacturing site for tidal technology or on producing energy? Proper implementation will ensure that the constructive relationship developed among key stakeholders continues. This will require the same level of transparency and engagement on an ongoing basis, especially given the incremental nature of this industry. While the round table may be a bit too large to be effective, a smaller version of the round table would be an obvious mechanism for ongoing consultation, in combination with broader consultation at critical stages of development.

⁷³ A key issue is how the results of this SEA process will feed into EA at the project level. Unfortunately, the SEA report says little on this point.

As decisions are made about pilot projects, as experience is gained about the technical, social, economic and environmental feasibility of tidal energy, it will be critical that communities continue to feel as informed and as involved in decisions about whether, where and under what conditions tidal energy projects ought to be permitted in the Bay of Fundy. The pilots will play an important role in the decision-making process for this new industry. It will be critical that the pilots are utilised to fill in some of the information gaps, particularly gaps in the understanding of the interaction between the various technologies and the receiving environment and cumulative effects.

The experience with the tidal SEA in Nova Scotia points to several possible improvements for SEA process design. The process would benefit from clear provisions on how the results of the SEA will feed into lower- and higher-tier decision-making processes, and the time frame during which the SEA can provide a sound basis for project-based decisions. The process also needs to include a firm commitment by government decision makers to respond to the recommendations of the SEA. In recognition of the reality that not all questions can be answered at the SEA level of assessment, government responses in the future will have to be more clear on whether and how knowledge gaps are to be filled and how outstanding questions will be answered.

Continuity in terms of transparency of decision making and public engagement is also critical. It is clear that the tidal SEA in Nova Scotia has developed a new level of trust and expectation in terms of transparency and public engagement in decision making. The constructive relationships developed will be at risk if the expectations are not realised as the sustainability principles developed and other recommendations are applied to individual tidal projects.

The role of government decision makers in the SEA process must be carefully considered. It needs to be designed to ensure independence and credibility of the process on the one hand, and active engagement of key decision makers on the other hand. As with project EAs, early triggering will be key. An effective way of addressing most of these issues might be to provide a legislative foundation for SEA at the provincial and federal levels. Initially, the legislation will have to retain considerable flexibility to be able to adjust to experience and unforeseen circumstances.

Any effort to formalise SEA in Nova Scotia will have to address the jurisdictional challenge of how a provincially led SEA can and should feed into federal decision making, both in terms of higher- and lower-tier decisions. This will be relevant both in terms of possible future regional and integrated planning and management in the Bay of Fundy region, and in terms of future

decisions on tidal energy projects in the context of their potential impacts on fisheries, navigation, and other areas of federal jurisdiction.

The absence of integrated management and planning is another challenge that will require further thought. It may be reasonable for purposes of deciding on whether to move ahead with pilot projects to assume the status quo of resource use and management will and should continue. It is more difficult to see how decisions about commercial-scale developments can be made in the absence of integrated planning, even with an incremental approach.

This may point to a more general limitation of SEAs. In the end, decisions about the role of this new industry, and how to maximise long-term sustainable benefits to Nova Scotians and Canadians, cannot be made until an integrated management plan is in place for the Bay of Fundy. This would suggest that the main role of an SEA is to update integrated management plans, not to eliminate the need for integrated planning and management.

Chapter 9

Canadian Arctic Offshore Oil and Natural Gas and European Union Energy Diversification: Towards a New Perspective?

Jerome D. Davis, Kamrul Hossain, and Timo Koivurova

9.1. Introduction

Events shape and in turn are shaped by developments in Arctic ocean policy. Nowhere is this truer than of the ever-changing Arctic environment, which is in turn shaping and being shaped by a global demand for secure sources of future oil and natural gas supplies. As the polar ice cap progressively shrinks, and industry interest in the Arctic quickens, Canadians are confronting the challenges of developing their Arctic hydrocarbon resources. In Canada these conflicting objectives have led to innovative regulatory policies accommodating stakeholder desires on the one hand and environmental and economic considerations on the other. The European Union (EU) similarly has multiple objectives intersecting with its Arctic interests. Particularly prominent among these are securing its future sources of natural gas supplies, implementing its natural gas market reforms, and promoting its environmental objectives. A seemingly unrelated event, the development of an Atlantic Basin liquefied natural gas market, both makes the development of Arctic natural gas resources feasible and presents the EU with an additional source of natural gas supply. Examining a project envisaging the development of High Arctic offshore natural gas resources, the giant fields off Melville Island, demonstrates the potential of such resources while tracing the regulatory problems and promises which their development entails for EU policy.

9.1.1. Background: EU Policy in the Arctic

According to the US Geological Survey, the Arctic seabed contains as much as one fourth of the world's undiscovered oil and gas deposits. In recent years, due to high oil prices in the world market, constant market demand, and the combination of the development of ship design technology and availability of modern equipment for drilling and other exploration and exploitation activities,

offshore hydrocarbon activities in the Arctic are becoming increasingly attractive.¹ More than 80 percent of current European oil and gas is produced offshore.² The EU imports the major share of its energy demands, currently 50 percent of its total consumption. Over the next 20 years this share is predicted to rise to 65–70 percent.³ Presently, oil imports to the EU are comprised as follows: 38 percent from Russia/CIS (constantly increasing in the past few years), 22 percent from the Middle East, 15 percent from Norway, 14 percent from North America, and 11 percent from other countries.⁴ This statistic shows that 53 percent, the largest share of EU consumption, comes from the Arctic states (currently Russia and Norway), and this share is expected to rise in the future. However, from an EU perspective, seabed activities in the Arctic are not of direct relevance as none of the EU countries have direct geo-physical links to Arctic marine waters.⁵ Yet, among other EU Arctic interests, the EU is concerned about Arctic energy supplies, especially hydrocarbon resources as these might constitute a strategic reserve for Europe's future energy requirements.⁶ Thus regulatory and other cooperative institutions facilitating cross-border and other common interests and energy infrastructure investments are being incorporated into EU energy policy. To date these areas are not extensive (many of these involve sub-sea connections and other competitive offshore issues). However, EU interest in marine-based energy projects is growing.⁷

¹A. Airoidi, *The European Union and the Arctic: Policies and Actions* (Copenhagen: Nordic Council of Ministers, 2008), p. 47. The implications of the climate policy for the energy sector, the dramatic increase of energy prices, and intensified concerns for the future security of supply have contributed to push energy issues to the top of the political agenda.

² European Parliament, *Energy Policy and Maritime Policy: Ensuring a Better Fit*, Eur. Parl. Doc. SEC (2007) 1283 provisional version (10 October 2007), p. 3 [hereinafter Energy Policy and Maritime Policy].

³ Airoidi, n. 1 above, p. 47.

⁴ Energy Policy and Maritime Policy, n. 2 above, p. 6.

⁵ In November 1983, in a hard-fought referendum, Greenland (which is officially an overseas territory of Denmark) voted to withdraw from the European Union. Since January 1985, relations with the EU have been regulated by an agreement reached between Greenlandic and Danish governments and the EU. D. Leonard, *A New Deal for Greenland and the EU* (London: The Foreign Policy Centre, 2004), available: <<http://fpc.org.uk/articles/345>> (retrieved 16 September 2008).

⁶ European Commission, *Strengthening the Northern Dimension of European Energy Policy*, Communication from the Commission (Brussels, November 1999), available: <http://ec.europa.eu/external_relations/north_dim/doc/energy.pdf> (retrieved 3 September 2008).

⁷ Energy Policy and Maritime Policy, n. 2 above, p 3.

In early 2008, the European Commission adopted a document entitled “Climate Change and International Security.”⁸ This document highlights the increasing geopolitical importance of the Arctic in the EU policy. This is mainly due to rapid melting of the sea ice caps, which increases accessibility to Arctic waters. The consequences of this development may include: the possibility of new trade routes, accessibility to potential offshore resources in the Arctic, and potential competitive Arctic territorial claims that threaten international stability and geostrategic regional dynamics. The security concern for the whole of the region is justified. A potential conflict may arise from intensified competition over access to and control over energy resources. An expansion of competitive territorial claims in the region has especial significance as it is expected that Arctic offshore areas contain enormous amounts of hydrocarbon resources. An example of potential conflict may be seen in the laying of a flag on the seabed at the North Pole by Russia during the summer of 2007. Thus, instability in the Arctic is likely to increase for two reasons. Firstly, much of the world’s hydrocarbon reserves are expected to be in the region, one that is already vulnerable to the impacts of climate change, and secondly, most of the oil and gas producing countries in the region already face significant social, economic and demographic challenges.⁹ Therefore, Europe’s ability to secure its trade and resource interests effectively requires close work with its northern partners. Moreover, the European Union is also closely connected to the Arctic through history, geography, economy and science.¹⁰ Therefore, for the EU, the Arctic region, once only of “peripheral” interest,¹¹ is now vitally important, especially in the context of climate change and Arctic energy considerations. Thus the EU has to take a leading role in responding to the threat posed by rapid climate change and its consequences in the Arctic.¹²

⁸ “Climate Change and International Security,” Paper from the High Representative and the European Commission to the Council, S113/08 (14 March 2008), available: <http://www.consilium.europa.eu/ueDocs/cms_Data/docs/pressData/en/reports/99387.pdf> (retrieved 2 September 2008) [hereinafter Climate Change and International Security].

⁹ *Id.*, p. 5.

¹⁰ Dr. J. Borg, Member EC (Fisheries and Maritime Affairs), “The Arctic: A matter of concern to us all,” Paper presented at Common Concern for the Arctic, European Commission Speech 08/415 (Ilulissat, Greenland, 9 September 2008).

¹¹ Airoldi, n.1 above, p. 13.

¹² The EU is in a unique position to respond to the impacts of climate change on international security because of its leading role in development and global climate policy and the wide array of tools and instruments at its disposal. Moreover, the security challenge plays to Europe’s strengths, with its comprehensive approach to conflict prevention, crisis management and post-conflict reconstruction, and Europe’s role as a key proponent of effective multilateralism. Climate Change and International Security, n. 8 above.

Within the framework of the Integrated Maritime Policy, the EU took a step forward to enhancing Europe's leadership role in maritime affairs. In addition to addressing a comprehensive and cross-sectoral approach to all ocean-related issues, the EU policy focuses on the individual needs of the different oceans and seas surrounding the European continent. With regard to the Arctic, an integrated maritime policy has put especial emphasis on the diverse interests within the EU concerning issue areas such as environmental protection, biodiversity, energy, fisheries, and maritime transport. The Action Plan for Integrated Maritime Policy included preparation of a report by 2008 on Arctic Ocean strategic issues that would lay the foundation for decisions regarding European interests in the Arctic Ocean and the EU's response to that end.¹³ The work of the Arctic Council in exploring an integrated approach to maritime issues complements the work of the EU.¹⁴ As a result, protecting the Arctic from environmental changes and ensuring sustainable regional development are significant EU policy goals. Any exploration of the Arctic's resources should be conducted in a sustainable manner with the EU applying the principles of a level playing field and reciprocal market access in the Arctic. The scope of the synergy between Europe's energy policy and maritime policy is wide and is likely to increase in the very near future. Europe's energy situation and policy imply more reliance on oceans, seas and ports.¹⁵ There is already an existing framework in this respect, the United Nations Convention on the Law of the Sea and the work done by organisations such as the Arctic Council, the Nordic Council of Ministers, and the EU's Northern Dimension initiative. The EU wants to develop the system further, adapting it to new challenges and circumstances relating to both legal and practical realities. Prominent here is the goal of environmental governance ensuring sustainable development, equitable access to resources and meeting the societal needs of indigenous communities.¹⁶

Thus the EU policy towards the Arctic has developed as one of cooperation and partnership with its northern neighbours. This cooperation and partnership has been given an institutional framework with the EU's successful

¹³ European Commission, *Accompanying Document to the Integrated Maritime Policy*, European Commission, SEC (2007) 1278, p. 30, available: <http://ec.europa.eu/maritimeaffairs/pdf/ActionPaper/action_plan_en.pdf> (retrieved 20 October 2008). For the final report on Arctic Ocean strategic issues, see n. 40 below.

¹⁴ Borg, n. 10 above.

¹⁵ Energy Policy and Maritime Policy, n. 2 above, p. 2.

¹⁶ Borg, n. 10 above.

adoption and implementation of its Northern Dimension initiative in 1999.¹⁷ The EU Member States, the Russian Federation, Norway, Iceland and the European Commissions are parties to this initiative. Northern regional organisations are also significant actors in the Northern Dimension.¹⁸ This initiative also aims to strengthen transatlantic cooperation by allowing the United States and Canada to have observer status. The purpose of the Dimension is to cooperate actively on the basis of good neighbourliness, equal partnership, common responsibility and transparency.¹⁹ The Northern Dimension promotes partnership between the EU and other northern non-Member States with regard to prosperity, sustainable development and well-being in Northern Europe. It is now being jointly developed on the basis of Northern European consensus.²⁰ Despite its broad geographical scope, the Northern Dimension is to be used as a political and operational framework for promoting the implementation of the EU-Russia Common Spaces initiative at regional, sub-regional and local levels in the North with the full participation of Norway and Iceland.²¹ This initiative focuses on identification of cross-cutting topics for cooperation and implementation. The European Neighbourhood Policy Instrument (ENPI) finances its activities, notably those focusing on cross-border cooperation,²² along the lines of the relevant EU-Russia financial

¹⁷ Finland played an active role in promoting cooperation in the north after its accession to the EU. This resulted in a proposal for the Northern Dimension (ND) in 1997. The European Council, however, endorsed the concept in 1999. See Airoldi, n. 1 above, pp. 17–18.

¹⁸ These regional organisations include: the Council of the Baltic States (CBSS), the Barents Euro-Arctic Council (BEAC), the Nordic Council of Ministers (NCM), and the Arctic Council (AC). These northern regional organisations identify needs for development and cooperation in their respective areas and support project implementation in different ways. See Overview of Northern Dimension policy, European Commission, DG External Relations, available: <http://ec.europa.eu/external_relations/north_dim/index.htm> (retrieved 14 November 2008).

¹⁹ “Political Declaration on the Northern Dimension Policy,” Northern Dimension Summit (24 November 1996), available: <http://ec.europa.eu/external_relations/north_dim/doc/pol_dec_1106.pdf> (retrieved 2 October 2008).

²⁰ “Guidelines for the Development of a Political Declaration and a Policy Framework Document for the Northern Dimension Policy from 2007,” European Council documents, available: <http://ec.europa.eu/external_relations/north_dim/doc/guidelines05.pdf> (retrieved 24 November 2008), p. 1.

²¹ *Id.*, p. 2.

²² Under the cohesion policy of the EU, cohesion among the regions and Member States was strengthened through economic, social and territorial cooperation. The programmes with particular relevance to the Arctic include: Sápmi Programme (cooperation in priority areas such as development of industry and commerce, research, development and education, regional functionality and identity), Northern Periphery Programme (cooperation in the northern EU regions of Sweden and Finland, a large share of Norway, including Svalbard, the Faroe Islands, Greenland, and Iceland, as well as part of Scotland, Northern Ireland and the Republic of Ireland on sustainable development of natural and community resources, technical assistance to

cooperation arrangements.²³ (A description of the EU Northern Dimension is appended to this paper as Annex One.)

9.2. EU Policy and the Canadian Arctic: A Coincidence of Events and Interests – Towards a Different Perspective?

What is striking about current EU Arctic policy is that it almost totally ignores the hydrocarbon potential of the North American Arctic continental shelf, in particular the Canadian Arctic shelf.²⁴ While not yet significant, events on the Canadian Arctic/West Greenland continental shelves could prove of interest to EU policy makers.

Following a review of the Atlantic Basin LNG market, this contribution briefly describes EU interest in this developing market. It analyses how the Melville Island project may fit in the patterns of LNG trade, directly or indirectly benefiting EU natural gas markets. (The details of the Melville Island project are further described in Annex Two.) The possible Danish/Greenlandic role within the Atlantic Basin, and possible policy perspectives for the EU, are also reviewed. Outlining the regulatory dilemmas facing the Canadian Arctic offshore suggests the consequences that must be considered for development of the Melville Island project. Overall, it would appear that exploitation of Arctic natural gas will supplement existing and future EU natural gas supplies, with a potentially significant contribution from Canada's Arctic archipelago. However, potential obstacles such as the North American Free Trade Agreement (NAFTA) must be considered in evaluating the future development of these resources.

support administration, and joint projects of community interests), and Kolarctic Programme (cross-border cooperation between EU regions and regions in neighbouring countries, as well as in Russia, on economic and social development, common challenges such as environmental protection and adapting to climate change, and people-to-people cooperation in the northern parts of Finland, Sweden and Norway and northwest Russia). Airoldi, n. 1 above, pp. 29–32.

²³ Guidelines for the Development of a Political Declaration, n. 20 above, p. 4.

²⁴ This is true as well of the EU External Policy which is devoid of any mention of the resources of the North American Arctic shelf. H. Turvo, *EU's External Relations related to Arctic Offshore Hydrocarbon Activities*, Research Paper (University of Lapland: Arktikum, 2008).

9.2.1. A Different Point of Departure?

Our point of departure juxtaposes disparate events and policies to argue for an increased EU interest in the Canadian Arctic offshore. The following events are indisputable:

The European Union is seeking to diversify its sources of hydrocarbon supply, particularly those of natural gas currently primarily delivered by pipeline from adjacent countries. This concern has manifested itself in the EU Green Paper *A European Strategy for Sustainable, Competitive, and Secure Energy*²⁵ and by a Council Directive on EU security of supply.²⁶ In addition, the extensive TENP-E programme not only promotes EU internal natural gas infrastructure, but also a series of trans-Mediterranean pipelines and a host of liquefied natural gas (LNG) reception terminals, and sponsors the now almost defunct Nabucco pipeline, which aims to connect pipelines from Central Asia to the EU pipeline infrastructure. A recent speech by Benita Ferrero-Waldner, the EU Commissioner for External Relations and European Neighbourhood Policy, addressing natural gas supplies highlighted these concerns: “For Europe, the particular concern related to gas imports. As gas is mainly transported in long-distance pipelines, supplies are vulnerable to disruption.”²⁷

While the exact pace of development is uncertain, the retreat of the polar icecap currently appears irrefutable. This has opened in turn the West Greenland-Canadian Arctic offshore to commercial interests. While the degree to which the western channels to the Northwest Passage will be free of multi-season icepack remains a matter of contention,²⁸ it is clear that Arctic climate change will open up access to potential oil and natural gas reserves on the Eastern Canadian/ West Greenland continental shelf. This is also true for proven natural gas reserves in the High Canadian Arctic.

Table 9.1 illustrates US Geological Survey estimates of the as yet to be discovered resource base in these areas. Table 9.1 also compares these

²⁵ European Commission, *Commission Green Paper. A European Strategy for Sustainable, Competitive and Secure Energy*, COM(2006) 105 final, March 2006.

²⁶ Council Directive of 26 April 2006, concerning Measures to safeguard security of natural gas supply, 2004/67/EC.

²⁷ B. Ferrero-Waldener, “Energy Security and Foreign Policy,” European Commission Speech/08/458 (New York, 24 September 2008), available: <<http://europa.eu/rapid/pressReleasesAction.do?reference=SPEECH/08/458&format=HTML&aged=0&language=EN&guiLanguage=en>> (retrieved 18 October 2008).

²⁸ J. R. F. Hodgson, J. G. Calvesbert, and M. Winterbottom, *Arctic Shipping Impact Assessment: Scoping Study*, Report Prepared for Transport Canada (Halifax: Dalhousie University, Marine Affairs Program, 31 March 2008). Even broken-up multi-year pack ice poses a threat to marine transport in the Arctic.

estimates with those of Western Siberia. Western Siberia has less than eight percent of the potential oil reserves of the North American offshore Arctic shelf, but almost twice the natural gas reserves (roughly 1.9 times) and more than two and a half times the natural gas liquids. The oil industry has evinced renewed interest in the Canadian Arctic. Between 2000 and 2008, exploration licensees in the Beaufort Basin have work commitments of CAD1.9 billion. In February 2008 the Canadian Minister of Indian Affairs and Northern Development (INAC) invited bids for five parcels in the Beaufort Sea. All five parcels were awarded in June 2008. BP Exploration not only won three of the licenses, but made a work bid of CAD1.18 billion for a single offshore parcel, the highest bid ever for a single offshore Canadian license.²⁹ Earlier, on the Alaskan shelf, a bidding round for 5,255 blocks (29.4 million acres) in the Chukchi Sea attracted a total of USD2.7 billion in bids. That industry was willing to bid that amount for drilling rights was remarkable. An earlier round in 1991 netted a paltry total of USD7.1 million.³⁰

Table 9.1. Offshore estimated undiscovered hydrocarbon reserves: North America/West Greenland

Canada/US/West Greenland Provinces	Oil mmbbl^a	Natural Gas bcf^b	Natural Gas Liquids mmbbl^a
Arctic Alaska	29,960	221,397	5,905
Amerasia Basin	9,723	56,891	542
NW Canada Interior Basin	23	305	15
Sverdrup Basin	857	8,596	191
W. Greenland/E. Canada	7,274	51,818	1,153
N. Wrangel Chukchi	86	6,066	107
Total (1)	47,923	345,073	7,913
West Siberia (2)	3,660	651,499	20,329
Ratio West Siberia to N. America/ W. Greenland (1)/(2)	0.076	1.888	2.569

^a mmbbl = million barrels of oil/NGL (natural gas liquids)

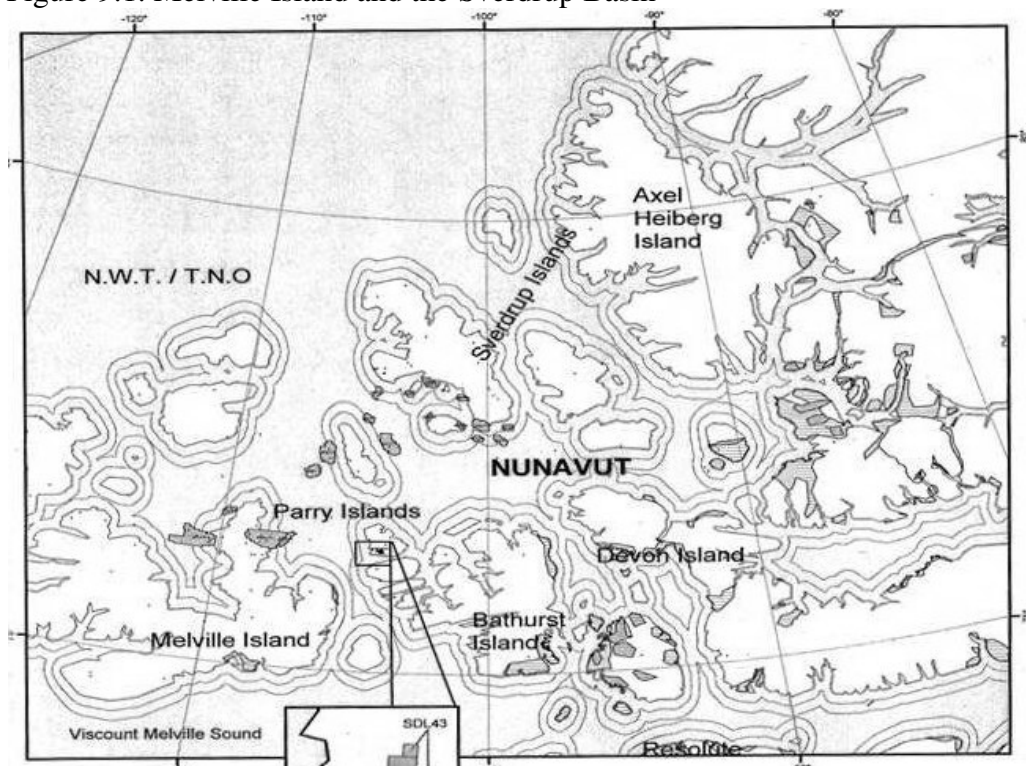
^b bcf = billion cubic feet (1 bcf = 28.316 million st m³)

Source: US Geological Survey, "Circum-Arctic Resource Appraisal: Estimates of Undiscovered Oil and Gas North of the Arctic Circle," *USGS Fact Sheet* 2008-3049 (2008).

²⁹ O. R. McHugh, "DFO and LOMAs: Prospects for Successful Development of Offshore Petroleum," (Thesis submitted in partial fulfilment of the Degree of Master of Marine Management, Dalhousie University, Halifax, N.S., August 2008), p. 57.

³⁰ See "Chukchi Sea Draws Record Bids," *Rigzone* (6 February 2008), p. 1.

Figure 9.1. Melville Island and the Sverdrup Basin



Source: Indian and Northern Affairs Canada, Land and Exploration Maps, Sverdrup Basin, available: <http://www.ainci-incac/oil/act/lan/index_e.html> (retrieved 23 October 2008).

Compared with the resources of the Beaufort Sea Melville Island and the Sverdrup Basin are more attached to the Atlantic Basin LNG market, a market which will increase in significance to the EU Member States. Whereas Table 9.1 estimates the extent of undiscovered reserves in the Arctic, the Sverdrup Basin already possesses 12.2 trillion cubic feet of proven natural gas reserves. It is therefore removed from the realms of U.S. Geological Service estimates of undiscovered reserves. The Sverdrup Basin is also interesting because there have been plans afoot to develop two giant gas fields located off Melville Island in the High Canadian Arctic, the Hecla and Drake Point fields, and ship cargoes of LNG to Atlantic markets. The Arctic Pilot Project was first advanced in 1981. It has since been resurrected, but not as a pilot project. Its proposed successor, what we will term the “Melville Island project,” is considerably larger in scale. This project thus serves as a base for the arguments advanced in this contribution. Similarly, one should not discount the West Greenland/ Atlantic Canada shelf. It alone accounts for an estimated 51,818 billion cubic feet of undiscovered natural gas reserves (out of a total 60,414 billion cubic feet

for Greenland (Denmark) and Canada. It too has proven natural gas discoveries. Additionally, part of our argument involves using a Greenland port (Godhavn (Disko Island)) as a transshipment point and hub for future North American Arctic LNG trade with the consumer states of the North Atlantic.

Any hydrocarbon development in the High Arctic will encounter problems in terms of the environment and the feasibility study on which it is based. In the Canadian Arctic, the regulatory problems are further complicated by the Canadian federal governmental system and treaty rights granted to the indigenous Inuit. The Melville Island project development in fact straddles two jurisdictions, that of the Beaufort Sea LOMA (and the native rights contained in this regulatory management area) and the offshore/internal sea areas of Nunavut. This provides us with the problem of how multiple overlapping and hierarchical regulatory regimes might be complicating progress in the development of Canadian Arctic hydrocarbon reserves.

9.2.2. The Atlantic Basin LNG Market: Prospects for LNG from the High Canadian Arctic

Almost unnoticed in the analyses of future EU dependence on Mediterranean, Central European and Russian sources of natural gas has been the rise of what is termed the Atlantic Basin LNG market. (See for example, Finon and Locatelli³¹ who devote one paragraph to EU's LNG policy in an otherwise praiseworthy analysis of Russian-European gas interdependence.) While LNG trade is flexible, it can also be capital intensive; the fact that pipelines, particularly pipelines to the Yamal peninsula in northwest Siberia, are costly is often easily forgotten. The LNG supply chain involves large carriers each capable of carrying up to 140,000 m³ or more. Methane, carried in liquefied form (at -160⁰C), condenses to 1/600 of its gaseous state. (A LNG carrier of 140,000 m³ capacity is therefore carrying 84 million m³ natural gas. Larger LNG carriers are on order.³²) LNG trades are significant. For example, the Melville Island project could deliver 8.76 billion m³ of natural gas per year to European markets. To put this amount in perspective, the oft-hyped EU's Nabucco pipeline, a line created to diversify European natural gas imports, at its peak will only deliver 16 billion m³ per year from Erzurum in Turkey to Baumgarten on the Austrian frontier. The Melville Island project can deliver

³¹ D. Finon and C. Locatelli, "Russian and European gas interdependence: Could contractual trade channel geopolitics?" *Energy Policy* 36 (2008), pp. 423–442.

³² These include LNG carriers with a capacity of 200,000 m³.

a quantity of natural gas equivalent to 56 percent of this capacity, and it is the not largest potential project.

What is of particular interest here is the development of the Atlantic Basin LNG market. The old pattern of integrated LNG trade where project owners would invest in liquefaction facilities, LNG carriers and reception terminals dedicated to a specific trade is being eclipsed by more flexible arrangements. Under the new scenario, assets are not specifically dedicated a specific LNG trade, and LNG carrier loads are often sold on a spot basis, to the highest bidder. LNG cargoes from Trinidad destined for Spain will be swapped with a cargo from Algeria destined for North America. (In this example, the Trinidad cargo will go to North American markets, while the Algerian cargo to Spain is 'swapped' with the cargo destined for North America.) Spot cargoes of LNG, previously non-existent, are becoming increasingly common. In recent years, over half the LNG cargoes for the North American market have been sold on a spot basis. This is the foundation of the Atlantic Basin LNG market. This market is perhaps best defined geographically by Weems and Rogers:

Under our preferred definition Atlantic Basin LNG markets specifically include current LNG producing countries Abu Dhabi, Algeria, Egypt, Nigeria, Oman, Qatar, Trinidad and Tobago, and LNG consuming countries Belgium, Dominican Republic, France, Greece, Italy, Mexico, Portugal, Spain, Turkey, the UK and the US... as well as future LNG producers Angola, Equatorial Guinea, Norway, Russia, Venezuela, and possible future LNG consumers Brazil, Canadian East Coast, Germany and the Netherlands.³³

The Atlantic Basin market shares several characteristics with the Pacific Basin market. First, there is a continued short-fall in LNG liquefaction plants vis-à-vis LNG carriers and reception terminals. This shortage will be aggravated by the rumoured postponement of the giant Russian Shtokmanovskoe field in the Barents Sea. Currently, it is thought that this shortfall will be made up by LNG supplies from the Middle East and Nigeria although this promises to be a costly alternative. Second, there is increasing arbitrage in the Atlantic Basin LNG market. LNG parties are increasingly capitalising on seasonal and other price differences among the various pricing regimes on both sides of the Atlantic. This includes the oil product price-linked

³³ P. R. Weems and D. R. Rogers, "Atlantic Basin LNG sees rapid growth: Mideast capacity plays a major role," *LNG Observer* 4, no. 2 (1 April 2007), available: <http://www.ogi.com/articles/print_screen.cfm?ARTICLE_ID=287875> (retrieved 18 October 2008).

natural gas prices characteristic of most European continental trade, commodity futures prices at the US Henry Hub delivery point, and prices obtained at the National Balancing Point in the UK market, among other lesser known spot markets. This in turn has led to some reception terminals basing their primary business on this hub trade. A bright future is seen for this market in that all the Atlantic Basin consumer nations will be experiencing increased demand. This will lead to increased competition for LNG supplies, perhaps including those from the Canadian Arctic/West Greenland Shelf.³⁴

Figure 9.2. Current and planned LNG reception terminals



Source: P. R. Weems and D. R. Rogers, “Atlantic Basin LNG sees rapid growth,” *LNG Observer* 4, no. 2 (Tulsa, Oklahoma: PennWell Publications, April 2007), available: <http://www.ogi.com/articles/print_screen.cfm?ARTICLE_ID+287875> (retrieved 22 October 2008).

Figure 9.2 shows the locations of LNG reception terminals within the EU and Turkey, existing terminals, terminals under construction, and proposed terminals. The map under represents the number of proposed terminals. For example, LNG reception terminals planned for Eemshaven (Netherlands) and Wilhelmshaven (Germany) are not represented on the map.

³⁴ Id.

How is the Melville Island project linked to the Atlantic Basin LNG market, more particularly to the EU gas markets? The Hecla and Drake Point fields are estimated to contain 8.7 trillion cubic feet of recoverable reserves. The total capital costs of project development (field development, pipeline to shipping facilities, and liquefaction plant) are estimated to be CAD(2005)2,807 million with an annual operating cost of CAD(2005)121.4 million.³⁵ The Canadian Energy Research Institute (CERI) has published a plan for five Arctic Class 7 icebreaking tankers which are estimated to cost CAD(2005)1,339 million with annual operating costs of CAD(2005)412 million. In one scenario, these will carry 6.1 million tons of LNG to Godhavn (Disko Island) Greenland. Here the LNG will be transferred to two other less specialised 200,000 m³ LNG tankers and sold to a (non-existent) Canadian LNG receiving terminal.³⁶ Curiously, the authors of the report ignore the European LNG market. Yet with the addition of another 200,000 m³ capacity LNG tanker, European markets become accessible to Melville LNG. (Annex Two contains further details of this project and our modifications.) Given current price scenarios, it is calculated that the project will yield a positive net present value (NPV) at a discount rate of 15 percent, after deductions for royalties, taxes, capital costs, depreciation, and operating costs.

How proximate is the Melville Island project to Atlantic Basin EU and American markets? Table 9.2 places the project in an Atlantic Basin context. The results are somewhat surprising. Distances from Melville Island to the two major American reception terminals, Cove Point, Maryland and Lake Charles, Louisiana, are longer than distances to Milford Haven, Wilhelmshaven and Le Havre in Western Europe. Shtokmanovskoe LNG would have an advantage in penetrating EU markets in terms of distance. (Nonetheless, prior to its cancellation/postponement Gazprom was planning to market some Shtokmanovskoe LNG to the US East Coast.) That Arzew, located in Algeria, has the best access to EU markets is hardly surprising, but the liquefaction plant at Arzew is working at close to capacity. Melville Island LNG can nonetheless compete with Arzew LNG in US markets, Arzew being a major LNG supplier to Cove Point and Lake Charles. As for LNG originating at Doha (Qatar) and Port Harcourt (Nigeria), anticipated to be major suppliers to the Atlantic Basin market, Melville Island LNG has a more proximate location in terms of all destinations in Table 9.2.

³⁵ L. Chan, G. Eynon, and D. McColl, *The Economics of High Arctic Gas Development: Expanded Sensitivity Analysis* (Calgary: Canadian Energy Research Institute, 2005), p. 16.

³⁶ Id., p. 22. It should be noted that another scenario has seven Class 7 LNG carriers being delivering to the Atlantic Canadian coast.

Table 9.2. Melville Island Project: Proximity to European and North American markets

From\To (nautical miles)	Cove Point	Lake Charles	Milford Haven	Wilhelmshaven	Le Havre
Melville Island	3709	5064	3156	3518	3404
Shtokmanovskoe	4801	6093	2163	1854	2099
Port Harcourt	5293	6131	4162	4611	4209
Arzew	3742	4962	1366	1815	1413
Doha	8465	9685	6089	6538	6136

Source: Asia Maritime, "Distances.com," available: <<http://shippingdistance.com/index.php>> (retrieved 17 October 2008).

Thus we can preliminarily conclude that Melville Island LNG is marketable within the Atlantic LNG basin, and is reasonably proximate to EU LNG terminals. It promises to deliver 8.76 billion m³ of natural gas to reception terminals in the EU. If it does not enter into a long-term base load LNG chain relationship to North American or EU markets, it is likely that it will go to where the price differentials are favourable, particularly given the rising share of spot sales in LNG markets in the United States. In both respects, the EU market could well play a plausible role.

9.2.3. Melville Island LNG: The Greenland Connection

There are three reasons for reviewing the Greenland connection for the Melville Island project. Firstly, the Melville Island project proponent's selection of Godhavn is critical to the role that the Melville LNG might play in the Atlantic LNG market. Secondly, Greenland's offshore, together with that of the Canadian Labradorean offshore, constitutes a promising under explored natural gas area. Finally, the status of Greenland's offshore resources is unclear. According to reports, Denmark, a Member State of the EU, exercises sovereign rights over those portions of the Greenland offshore which are beyond thirty nautical miles from Greenland's baselines. The implications of this for the EU are not analysed here.³⁷

³⁷ This is particularly interesting in light of the results of the referendum on Greenland's autonomy on 25 November 2008. The referendum passed and will take effect on 21 June 2009. The proposals were to expand home rule in several areas, including the coast guard and

There are logistical reasons for the Melville Island's proposed location of an LNG transit terminal at Godhavn, Greenland. Locating a transit terminal at Godhavn, an ice-free harbour on the West Greenland coast would enable shorter round trips for the LNG carriers to and from Melville Island, and a considerable savings in capital and operation costs. Such a solution could also give the project owners considerably more flexibility in selecting which markets their LNG would service.³⁸ A further factor in favour of Godhavn as a transshipment hub to Europe rather than North America lies in the increasing self sufficiency of North American natural gas markets. Technological developments in North America have led to increased extraction of natural gas from shale formations. This could reduce the current anticipated North American demand for LNG making European destinations (and a Godhavn transit terminal) more attractive.

As illustrated in Table 9.1, the US Geological Survey estimates natural gas reserves in the West Greenland-Atlantic Canada Province at 51.8 trillion cubic feet. Exploratory drilling on the both the West Greenland and Canadian Labrador margins is in the initial phases. Six wells have been drilled offshore West Greenland, with only one well discovering natural gas. A particularly promising exploratory effort is focussed around Disko Island where on land oil seeps and gas shows indicate the likely presence of hydrocarbons in a geological basin offshore.

Efforts along the Canadian Labrador margins have been more successful. Twenty-eight offshore wells drilled thirty to forty years ago made five gas discoveries in two Labrador Mesozoic sedimentary basins: the Saglek and Hopedale basins. Two of the discoveries located close to each other, the North Bjarni and Bjarni fields, have estimated recoverable reserves of roughly 3 trillion cubic feet. These and other gas finds in the area (most notably the Gudrid field) currently qualify as "stranded gas," natural gas fields too small for LNG or pipeline transport to North American markets. Further natural gas finds could well be in the offing. Both the Canadian Newfoundland and the Danish Greenlandic authorities are in the process of submitting promising areas for licensing by oil companies.³⁹ Exploration activities in this area will increase in the near future.

participation in foreign policy making. How Danish sovereignty beyond 30 nautical miles from the Greenland baseline fits into this picture is unknown to the authors.

³⁸ The Chan et al. evaluation acknowledges the value of "optionality" but did not undertake to analyse the issues of a Godhavn hub for Atlantic LNG trade. Chan et al., n. 35 above.

³⁹ The Danish Greenlandic authorities have held three licensing rounds since 2000. The Canadian Newfoundland/Labrador Offshore Petroleum Board has called for interests in the Hopedale and Saglek basins. The deadline for bids in this last instance was August 2008.

9.2.4. The Regulation of Canadian Offshore Arctic Activities – The Problem of Devolution?

On 20 November 2008, in a Communication to the European Parliament and the Council,⁴⁰ the European Commission signalled a more activist future role for the EU in the Arctic. The Communication is carefully balanced, emphasizing an increased role in Arctic transport, fisheries, climate change, and political and economic support of indigenous peoples (particularly in Greenland). The Communication is relatively muted in its discussion of EU interest in Arctic hydrocarbon reserves, emphasizing a role engaging indigenous peoples and preserving their way of life.⁴¹ Nonetheless, the EU move was widely interpreted as a manoeuvre for Arctic hydrocarbons. For example, The Canadian Press trumpeted that the EU was “staking [a] claim on Arctic resources,” adding that the initiative “is likely to irk other Arctic players, including Canada, Russia, Norway and the United States all of which have issued territorial claims in the polar region.”⁴²

What are the EU’s prospects in the Canadian Arctic Archipelago? The issue is politically sensitive, particularly as regards Ottawa’s relationship with the Canadian indigenous peoples. Canadian Arctic offshore oil and natural gas activities present a challenge for Canadian management of Arctic waters. The regime governing offshore activities is currently in the process of transition.

The first set of changes stem from the Canadian federal government concluding land claim treaties with the Northern Canadian Inuit where Inuit were granted various property rights in vast areas in return for giving up their traditional rights throughout Canada.⁴³ As a result, the Northwest Territories (NWT), originally comprising the entire Canadian Arctic area, was subdivided in 1993 into two territories, the Northwest Territories, the western segment of the original Northwest Territories, and a new entity, Nunavut, comprising the previously eastern segment (including most of the Arctic island archipelago). A wholly new set of innovative consultative institutions was established in both territories. What is remarkable about Nunavut is not only the new Inuit

⁴⁰ EU Commission, *Communication for the Commission to the European Parliament and the Council: The European Union and the Arctic Region*, Brussels COM(2008) 763.

⁴¹ *Id.*, pp. 5–6.

⁴² “European Union joins the lineup, staking claim to Arctic resources,” *The Canadian Press* (22 November 2008), available: <<http://www.canadaeast.com/rss/article/487158>> (retrieved 23 November 2008).

⁴³ The Canadian government has signed over 20 land claims agreements. These agreements compensate the Aboriginal peoples for lands they inhabited before European settlers arrived in North America.

consultative boards that have been established (this is true of the Inuvialut in the Northwest Territories), but that the new Territory of Nunavut is virtually contiguous with the Settlement Lands granted in the *Nunavut Land Claims Final Agreement Act* and is meant to be an Inuit homeland.⁴⁴ (“Nunavut” is translated as “Our Land”.) Each of these entities, but particularly Nunavut, is subject to ongoing political change increasing LNG project risk

The offshore regime is also undergoing management change in another respect. In accordance with the *Oceans Act*, the federal Department of Fisheries and Oceans (DFO) has assumed responsibility for the implementation of integrated oceans management. The vehicles for application of this management form are large ocean management areas (LOMAs). To date, there are five LOMAs, with each covering vast areas: the Beaufort Sea, Placentia Bay/Grand Banks, Gulf of St. Lawrence, the Scotian Shelf, and the Pacific North Coast. Both of these developments have complicated the management of Arctic offshore resources. Further, missing among the five LOMAs is a management area covering the Sverdrup Basin and the majority of the Canadian Arctic Islands. This management area falls within Nunavut. This difference may have consequences for the Melville Island project. The Hecate field lies to the east of 110° W longitude which bisects the eastern Melville Island peninsula, and thus falls into the NWT Beaufort Sea LOMA. The Drake Point field lies offshore to the east of Melville Island in Nunavut.

9.2.4.1. The Arctic Offshore and Inuit Land Claims

Prior to the first Inuit land claims agreement with the Inuvialut in 1984, oil and natural gas development in the NWT were exclusively within the purview of the Oil and Gas Directorate of the federal Indian and Northern Affairs Canada (INAC) and the National Energy Board (NEB). INAC and the NEB administer these activities in accordance with the *Canada Petroleum Resources Act* and the *Canada Oil and Gas Operations Act* and their accompanying regulations.⁴⁵ The Inuvialut Final Agreement granted the Inuvialut simple fee title to certain lands in the NWT. These included subsurface rights under certain of these lands, including rights to oil and natural gas resources. To date the Inuvialut Final Agreement has not attenuated the role of INAC and the NEB. INAC

⁴⁴ The creation of the Territory of Nunavut was directly linked to the Nunavut Land Claims Final Agreement. The *Nunavut Land Claims Agreement Act* of 1993 was passed on the same day as the *Nunavut Act*, which created the new territory of Nunavut.

⁴⁵ S. Carpenter, C. A. Law, and J. Olynyk, “Oil and Gas Developments in Western Canada in the New Millennium: The Changing Legal Framework in the Northwest Territories, the Yukon, and Offshore British Columbia,” *Alberta Law Review* 39 (2001), p. 3.

remains responsible for granting exploration and production licenses. The NEB is responsible for all the stages in between (exploration activities, granting significant discovery and commercial discovery licenses, and approval of development plans).

The Inuvialut Final Agreement created a series of institutions that imposed new conditions on resource development. Nevertheless it did not essentially alter the previous regime. These institutions, essentially management boards with Inuit representation, were grafted onto the existing legislation. The Inuvialut Final Agreement did not grant any comprehensive form for self-government, unlike Nunavut. Nor was the transfer of land ownership as sweeping as that which occurred when Nunavut was created in 1993.

The federal government in Ottawa has nominally delegated significant powers to the territory of Nunavut. However, there are two major interlinked stumbling blocks in the federal-territorial relationship of consequence for the development of the Melville Island Project and other Arctic hydrocarbon resources: disagreement over control of such resources and disagreement as to whether internal Arctic waters and revenues from offshore resources fall within the exclusive purview of territorial government jurisdiction.

The Government of Nunavut (GN) and Nunavut Tunngavik Incorporated (NTI)⁴⁶ and Ottawa have been unable to agree on the transfer of control of non-renewable resources located in the territory and on the division of the economic rents involved with resource exploitation. The problem is complicated by the forthcoming devolution of provincial rights to Nunavut, rights which would give the GN and NTI control over land management and natural resources.⁴⁷ There is a difference of interpretation over what constitutes devolution. The Nunavut organisations essentially argue that Ottawa is delegating full provincial powers to Nunavut, a claim which would give the GN and the ITC (Inuit Tapirisat of Canada) full authority over all subsurface resources in the territory. These powers were first recognised by the *British North American Act* of 1867 and reaffirmed by the *Canada Act* of 1982. Ottawa maintains that jurisdiction over these resources may pass to Nunavut, but the “programmatically element” remains the prerogative of the federal government.

The Inuit of Nunavut are very dependent on the marine economy, a fact reflected in the Nunavut Final Land Claims Agreement. This cultural

⁴⁶ Nunavut Tunngavik Incorporated is the entity charged with the corporate responsibility of managing the lands granted the Nunavut Inuit in 1993. It is reputed to have a more hawkish position on these issues than does the GN.

⁴⁷ See P. Mayer, *Mayer Report on Nunavut Devolution* (Fasken Martineau DuMoulin LLP, June 2007), available: <<http://www.fasken.com/publications/Detail.aspx?publication=3322>> (retrieved 3 November 2008), p. 21.

dependence, argue the GN and NTI, should give them control over internal waters (including subsurface resources). They also argue that Nunavut control over internal waters and seabed resources would enhance Canada's claim to the internal waters status of the Arctic archipelago. An argument of regulatory efficiency is also made, namely, that a seamless Nunavut land and internal waters administrative structure would contribute to regulatory clarity and consistency. In this respect, the *Mayer Report on Nunavut Devolution* refers specifically to Nunavut frustration with the lack of progress in developing offshore resources. It refers to the dispute over who was to exercise authority over seabed resources in the archipelago, in particular the Drake Point gas field, one of the two fields on which the Melville Island project is based. The *Report* states:

The GN [Government of Nunavut] expressed its conviction during briefings that devolution of the seabed resources to the GN would immediately unlock the rich potential that exists there. During briefings on what was then Nunavut's draft Mineral Exploitation and Mining Strategy, the GN's Director of Petroleum Resources Division explained that the Drake Point gas field off the Northern tip of Melville Island has a complicated ownership structure [hindering its development].⁴⁸

It was alleged that the current system of regulation allowing for "significant discovery licenses" was delaying the development of the gas field and that a Nunavut administration could prompt a "resumption in oil and gas exploration and development activities in Nunavut."⁴⁹

More recently, on 15 September 2008, a Land and Resources Devolution Protocol⁵⁰ was signed by the GN and Ottawa, specifying the manner in which future devolution negotiations will be conducted. Notable in this Protocol are the principles regarding transfer of administration and control of oil and gas resource both on- and offshore. While acknowledging the ultimate objective of transferring these powers to the GN, the Protocol stated that the Government of Canada "is not prepared to negotiate seabed resource management during the initial phase of devolution negotiations" and negotiations over the status of these resources were to occur in a "future phase of devolution negotiations."⁵¹ The degree to which this protocol will defuse the situation remains to be seen.

⁴⁸ *Id.*, p. 38.

⁴⁹ *Id.*

⁵⁰ Indian and Northern Affairs Canada, *Lands and Resources Devolution Negotiation Protocol* (15 September 2008), available: <<http://www.ainc-inac.gc.ca/al/ldc/cc/fagr/nuna/nti/nti-eng.asp>> (retrieved 20 November 2008).

⁵¹ McHugh, n. 29 above, p. 6.

More serious, perhaps, was the negative conclusion in the *Mayer Report* as to whether Nunavut was capable of handling the additional demands imposed by its devolution to provincial status. It was expected to be signed by the end of 2008, the ultimate product of negotiation has been a compromise in which both sides have agreed to take up some of the more sensitive issues at a later point in time. It is highly likely that an eventual devolution agreement will retain some federal control over the internal waters and subsurface rights. This is particularly the case for the National Energy Board, the competent technical entity for future offshore petroleum developments. While prediction here is uncertain due to constant policy shifts in the GN, the Devolution Protocol is unlikely to reduce Ottawa-Nunavut conflicts over the long term.

9.2.4.2. The Arctic Offshore and the Creation of LOMAs

While the designation of a LOMA may not be forthcoming for the Arctic archipelago as of yet, it is worthwhile to briefly examine the problems that negotiations leading to LOMAs are encountering with regard to the governance of offshore subsurface resources. Some of these problems are general in nature. DFO, the government agency responsible for establishing and administering LOMAs, is confronted with a high level of variation, both among the various LOMAs (for example, the Scotian Shelf LOMA is very different from the Beaufort Sea LOMA) and among the negotiating stakeholders. No fewer than 38 organisations divided among five committees are engaged in the creation of the Beaufort Sea LOMA. In contrast to elsewhere in Canada, many of these organisations are consultative Inuit organisations. This problem is replicated with regard to coordination of government regulatory bodies. Many of these bodies have negotiated a wide network of memorandums of agreement without fully realising the implication of these agreements or the degree to which they overlap. This overlap could well lead to future conflicts.

With regard to offshore subsea resources, there is a high degree of asymmetric information between the various competent authorities.⁵² Different bodies have different expertises. Thus, for example, the National Energy Board, the body concerned with the direct management of offshore hydrocarbon exploitation, has superior sources of information regarding these activities than many other authorities. The degree to which asymmetric information may lead to infighting among LOMA authorities remains unclear. A second problem is the multiple property rights regimes within each LOMA that have to be

⁵² Id.

reconciled. Indeed, one need only look at the Nunavut devolution controversy to see the nature of this problem.

At present it is unclear what, if any, effect the lack of a Nunavut LOMA might have on any future approval and regulation of the Melville Island project.⁵³ Nonetheless, the process of creating the integrated management systems within the individual LOMAs is progressing. Indeed, the Scotian Shelf LOMA and the Beaufort Sea LOMA planning processes are well underway. It remains to be seen how these integrated management systems will actually function in the future.

9.3. Conclusion

On 17 October 2008, an EU-Canada Summit was held in Quebec. EU President Sarkozy and EU Commissioner Barroso met with Canadian Prime Minister Stephen Harper. The statement issued at the end of the meeting emphasized Canadian-EU cooperation in three areas: economic partnership, energy and the environment, and international peace and security.⁵⁴ On further reading, the communiqué deals exclusively with the environment. Energy is shunted aside. The communiqué also mentions future cooperation in the Arctic, reiterating shared interests and objectives, including “protecting the environment and ensuring that Northerners can contribute to economic and social development in the region now and in future generations.”⁵⁵ Scientific research and sustainable seal hunting were other measures mentioned in the communiqué, as was a report on Arctic cooperation in 2009. Nowhere was there mention of tapping the Canadian Arctic for its natural gas resources.

Just 34 days later, however, the European Commission outlined an activist EU Arctic policy.⁵⁶ What are the EU’s prospects with regard to Arctic hydrocarbon resources?

⁵³ The authors have unsuccessfully investigated the reasons for the lack of a Nunavut LOMA. Telephone enquiries at INAC with officials did not yield any answers. It is rumored that GN and NTI are at odds with DFO, the result of DFO’s having given away Nunavut fishing rights to Greenland, and thus may be resisting the establishment of a Nunavut LOMA. Alternatively, a LOMA may be thought to be unnecessary given the presence of an interdisciplinary Nunavut Maritime Board.

⁵⁴ Council of the European Union, EU-Canada Summit Quebec, 17 October 2008, 11467/08 (Presse 292), available: <http://ec.europa.eu/external_relations/canada/sum10_08/results_en.htm> (received 20 October 2008).

⁵⁵ Id., p. 5.

⁵⁶ European Commission, *Communication for the Commission to the European Parliament and the Council: The European Union and the Arctic Region*, Brussels COM(2008) 763.

Our objectives in this contribution are straightforward and perhaps a bit novel. We have argued that while Canadian Arctic natural gas reserves cannot match Siberian volumes, exploitation of Arctic natural gas can serve as a significant supplement to existing and future EU natural gas relationships. This picture can only get better with the revival of exploration, not only in the Arctic Archipelago, but also in the Atlantic Canada-Greenland basin. The latter area, with some 34 wells in total, is far less explored than the Sverdrup Basin (with 124 exploratory wells).

We have used the recently revived Canadian Arctic Pilot project as a *leit motif* in our argument. But it is hardly the only source of Canadian Arctic natural gas. Also available in the Arctic archipelago are the proven gas reserves at the King Christian Island group (some 3.5 trillion cubic feet). On the basis of their finds in the archipelago, the PetroCanada Group estimated an exploitable ultimate potential of 113 trillion cubic feet in 1979.⁵⁷ With improved seismic technology, offshore drilling techniques, and receding Arctic ice, renewed exploratory activity will undoubtedly contribute to this figure.

Arctic oil resources have been underplayed in this analysis. This has been largely due to the great EU concern over future natural gas imports into the Community, and the fact that there is an LNG project being considered in the Canadian Arctic archipelago. There are significant crude oil resources in the Sverdrup Basin. Bent Horn, a smallish field with 12 million barrels of recoverable resources, was exploited in the period 1985 through the late 1990s, but this is a minor development. More significant perhaps is Sverdrup's undeveloped Cisco field with 584 million barrels of proven reserves.⁵⁸ However, there are no current development plans for the Cisco field.

Expansion of Atlantic Basin LNG trade is widely anticipated. A transit terminal in Greenland would be ideal for proponents of the Melville Island project. While the possibility of a Greenland transit terminal was not considered in the original APP application 29 years ago, this was due to the limited amount of LNG spot trading then. Today, well over half the LNG cargoes delivered to North American markets are arranged on a spot basis. With North American and EU markets roughly equidistant, the Melville Island project proponents can

⁵⁷ Arctic Pilot Project (Canada), *Application to the National Energy Board* (Calgary: Petro-Canada, 1981), Vol. 2, p. 49. The APP application comprises seven volumes: v. 1 Application, v. 2 Gas Supply and Markets, v. 3 Facilities, v. 4 Economics, v. 5 Public Interest, v. 6 Canadian economic benefits, and v. 7 Melford Point Alternative (1979).

⁵⁸ Even more interesting is the production from the Amauligak field in the Beaufort Sea, with reserves estimated at 2.2 billion barrels. See K. J. Drummond, "Canada's discovered oil and gas resources North of 60°," (Paper presented at the AAPG Annual Conference, Calgary, Alberta, 19–20 June 2005), available: <<http://www.searchanddiscovery.net/document/2006/06022drummond/index.htm>> (retrieved 21 October 21).

now arbitrage European (probably using National Balancing Point prices) with US natural gas prices. The CERI sensitivity study, the details of which are extensively discussed in Annex Two, has found that their Melville Island case study yielded positive NPVs discounted at 15 percent net of all costs, taxes and royalties at natural gas prices as low as USD5.53 per Mcf (Mcf = thousand cubic feet) (Henry Hub) in 2014 rising to USD5.66. per Mcf in 2040.⁵⁹ As European prices are generally higher than those in North America, it is likely that much LNG will be delivered to European terminals, even in the absence of a dedicated project. Annex Two shows that the price differentials involved in a European solution to the Melville Island project are within the realm of reason.

Outside the environmental aspects of such a trade, which were evaluated during the initial application,⁶⁰ but will likely need to be intensively investigated again, there are three main obstacles to the Melville Island project that appear to be political. First, the conflict between Nunavut and Ottawa over the nature of the coming territorial devolution into something between a territory and a full fledged province will not accelerate the Melville Island project. This is particularly the case given that control of the subsea resources of the Drake Point field is disputed. A second reason, which is linked with the first, is the lack of qualified regulators for offshore activities should these fall under the Nunavut government's competence. This could well make development risk unacceptable for the project's proponents. (In a somewhat unrelated example, given Greenland's vote for 'independence' in a 28 November 2008 referendum, this lack of qualified administrators can stall any development of Greenland resources.⁶¹) Finally, even where a LOMA planning process has been completed, it is not clear how integrated management will function.

With respect to these three obstacles, it is more than probable that they will not be significant hindrances to the Melville Island project. Disputes over the status of subsea resources have been postponed. Ottawa's insistence on separating juridical devolution over the area's resources from programmatic

⁵⁹ At CAD1 = USD\$0.75. Note that a startup delay of five years does affect the NPV significantly.

⁶⁰ See Canadian Arctic Resources Committee, *The Arctic Pilot Project: A Submission to the Environmental Assessment and Review Process* (Ottawa: CARC, March 1980), and Arctic Pilot Project Assessment Panel, *Arctic Pilot Project (Northern Component): Report of the Environmental Assessment Panel* (Ottawa: Federal Environmental Review Assessment Office, October 1980).

⁶¹ For example, the Greenland state oil company is participating in all the Greenland offshore blocks. Currently, Nunaoil is owned 50–50 by the Greenland Home Rule Government and the Danish State. On independence, Nunaoil will be 100 percent owned and controlled by the Greenland Home Rule Government. As such, it will have a very limited ability to foot the financing of any future major exploration well, much less the capital needed for an major project offshore West Greenland.

devolution should keep the more complicated aspects of the offshore project within the capable hands of the NEB and INAC.⁶² And fears over how LOMAs will function may prove to be unjustified.

A more serious obstacle could lie in the provisions of the North American Free Trade Agreement (NAFTA). Trade in oil and energy is covered by NAFTA Article 605. This article allows governments to restrict energy exports to other countries on the following grounds: (1) exhaustible resource conservation; (2) supply shortages; (3) stabilisation of prices; and (4) national security.⁶³ Of more particular interest are the terms set out in Article 605 for energy trade “proportionality.” In the case of supplies being restricted in either the United States or Canada due to the first three reasons specified above, the “share of the total supply may not fall below the average level in the previous 36 months.”⁶⁴ The significance of this measure for third parties is obvious. Should a shortage of 25 percent be experienced in Canadian production, exports to the United States must be no lower than 75 percent of the level of the previous 36 months. Thus, in a period of shortage in North America, the exigencies of Canada-US bilateral trade in energy would cause diversion away from a third party, for example, an EU importer, to the US and Canadian markets. This would occur precisely at a time when shortages may also be serious in the importer’s home market. However, it may be possible for market participants to swap LNG diverted from Canada-EU trade to bilateral North American trade with cargoes originally destined for North American markets from other suppliers elsewhere in the world.

This proportionality principle is highly contentious. It applies only to US-Canada trade relations (Mexico having opted out). In that it has never been exercised, its status is still somewhat vague. However, actions undertaken within the purview of national security provisions of the accord are more tightly defined than those in the General Agreement on Tariffs and Trade. Watkins and Waverman believe that Canadian acceptance of the proportionality principle and US acquiescence in tightened national security provisions are an example of the give and take between the two countries in the formulation of the treaty.⁶⁵ Nonetheless, NAFTA provisions such as these must be taken into account in

⁶² From time-to-time, plans are floated with regard to establishing joint Ottawa-territorial regulatory boards modeled on the Canada-Nova Scotia and Canada-Newfoundland Labrador Offshore Petroleum Boards. The advantages and disadvantages of such a solution for the NWT and Nunavut, with separate boards or one joint board, are beyond the scope of this contribution.

⁶³ See G. C. Watkins and L. Waverman, “How might North American Market Have Performed with a Free Trade Agreement in 1970?” *The Energy Journal* 14, no. 3 (1973), p. 157.

⁶⁴ *Id.*, p. 159.

⁶⁵ *Id.*

examining the relevance of the Arctic archipelago for future EU security of supply of oil and natural gas.

Annex One: The Northern Dimension and EU Energy Policy

Energy efficiency and renewable energy were high on the agenda of the new Northern Dimension (ND) initiative in which the Arctic and sub-Arctic areas, including the Barents region, are defined as EU priority areas.⁶⁶ EU energy demand is linked to delivery to its regional market. Therefore it is in the EU interest to ensure that traditional energy suppliers in the North (Norway and Russia) will be able to continue to deliver. One of the key sectors in the EU's Northern Dimension,⁶⁷ energy, is a function of a growing interdependence between the EU and Russia. In a recent speech, Benita Ferrero-Waldner, the European Commissioner for External Relation and European Neighbourhood Policy, highlighted this interdependence. She stated that Russia remains a very significant partner for the EU. Since the EU markets absorb around two-thirds of Russian gas exports, the EU revenues are vital to Russia's economic growth.⁶⁸ Based on this inter-dependence, the EU has interests in the development of energy production in the Arctic. As the EU energy policy requires it to bring its neighbour progressively closer to the EU's internal market, the Northern energy agenda comprises three components: security of supply, competitiveness, and protection of the environment. In relation to EU Arctic interests, energy policy becomes a major driver, as is mitigation of climate change.⁶⁹ The focus of EU energy policy includes: harmonisation of regulations governing energy trading (including investment and dispute settlement), setting environmental requirements, developing a stable framework for public and private investments in the energy sector, encouraging more efficient production and use of energy, and the developing gas network supporting a sustainable supply and use of energy.⁷⁰ To achieve these goals, the EU has developed variety of instruments such as the Trans-European (Energy) Networks Programme,⁷¹ the Energy Framework Programme,⁷² and the TACIS

⁶⁶ Airoldi, n. 1 above, p. 22.

⁶⁷ Strengthening the Northern Dimension of European Energy Policy, n. 6 above.

⁶⁸ Ferrero-Waldner, n. 27 above.

⁶⁹ Airoldi, n. 1 above, p. 48.

⁷⁰ Strengthening the Northern Dimension of European Energy Policy, n. 6 above.

⁷¹ The Trans-European Networks Programme (TENS), adopted by the Council in 1995, co-finances studies that support and foster energy network development and interconnections necessary for supplying the market and enhancing security of supply, taking account of the need to link island, landlocked, and peripheral regions with the central regions of the Community and to establish or improve interconnections with third countries. *Id.*, Annex II.

⁷² The Energy Network Programme has supported Energy Policy activities in Latvia and Poland through its international cooperation programme, Synergy. *Id.*, Annex II.

(Technical Aid to the Commonwealth of Independent States) project in northwest Russia.⁷³ In addition, EU funds are supplemented by other cooperative instruments contributing to regional economic development such as the European Bank for Reconstruction and Development, regional development banks, the Nordic Investment Bank, and other national and regional programmes.⁷⁴

Due to EU enlargement, international cooperation in the Barents and Baltic regions has opened up the possibility of energy company investment. However, feasible legislation and a favourable economic environment are pre-conditions for such investment. Thus, EU northern energy policy has emphasised strengthening energy cooperation with Russia through the Partnership and Cooperation Agreement. The Common Strategy for Russia specifically mentions the Northern Dimension as a forum in which Russian-EU regional and cross-border cooperation can be strengthened. Current EU policy envisages Russian ratification of the Energy Charter Treaty (ECT), a treaty which Russia signed but has as yet failed to ratify. Russian ratification of the ECT will modernise the current regulatory framework and will build new relationships in competition and standards. It will also attract private sector participation in Arctic investment and encourage development in new infrastructure and technological capacity.⁷⁵ The EU Commission has already proposed extending the “motorways of the sea” as part of the development of a common energy import infrastructure.⁷⁶

Given that its future energy supply is secured at the corporate level, a coherent external energy policy regarding the liberalisation of the EU energy markets is needed at the Council of Ministers level. The enhancement of an EU dialogue with Russia is one of the main arguments favouring such a policy. Here, diversification of sources, routes and suppliers is crucial to ensuring EU’s energy security. Energy cooperation with major producers, transit countries and consumers must receive support from all Member States. An external European energy policy, based on the principle of solidarity, could provide an effective response to possible future external crisis situations.⁷⁷ Whether an overall EU

⁷³ TACIS (Technical Assistance to the CIS (or Commonwealth of Independent States)) is a programme that has taken both a sector specific and regional approach to the provision of technical assistance to Russia. It has supported several projects in northwestern Russia, concentrating primarily on energy efficiency and environmental issues. *Id.*, Annex II.

⁷⁴ See *Id.*

⁷⁵ See, in general, *Strengthening the Northern Dimension of European Energy Policy*, n. 6 above.

⁷⁶ *Energy Policy and Maritime Policy*, n. 2 above, p. 4.

⁷⁷ O. Geden, C. Marcelis, and A. Maurer, “Perspectives for the European Union’s External Energy Policy: Discourse, Ideas and Interests in Germany, the UK, Poland and France,”

approach to possibly significant future gas supplies from the Arctic will be able to take priority over the commercial interests of individual companies remains to be seen.⁷⁸

Working Paper FG1, 2006/17 (German Institute for International and Security Affairs, 2006), available: <http://www.swp-berlin.org/common/get_document.php?asset_id=3521> (retrieved 5 October 2008).

⁷⁸ Airoldi, n. 1 above, p. 48.

Annex Two: The Melville Island LNG Project

This description of the Melville Island project relies on several earlier studies previously made on a similar project, the Arctic Pilot Project (APP). Chief among these are those submitted with the initial APP application to the Canadian National Energy Board (NEB).⁷⁹ There are other publications of interest here, for example, the submission of the Canadian Arctic Resources Committee.⁸⁰ Most of the estimates here are based on Chan et al.⁸¹ which in turn is highly dependent on the early APP submission to the NEB. Costs have been adjusted to 2005 levels.

Figure 9.3 illustrates the basic installations of the Melville Island project. As can be seen, the Hecla and Drake Point gas fields straddle the northeastern Melville Island peninsula. Both fields are essentially offshore fields, although both have portions extending under the Melville Island land mass. The two gas fields are to be linked together with a 162 kilometre natural gas pipeline running south following the island's natural features to a liquefaction plant, storage tanks facilities, and LNG carrier berthing facilities on and offshore the Bridport Inlet on the south side of the island.

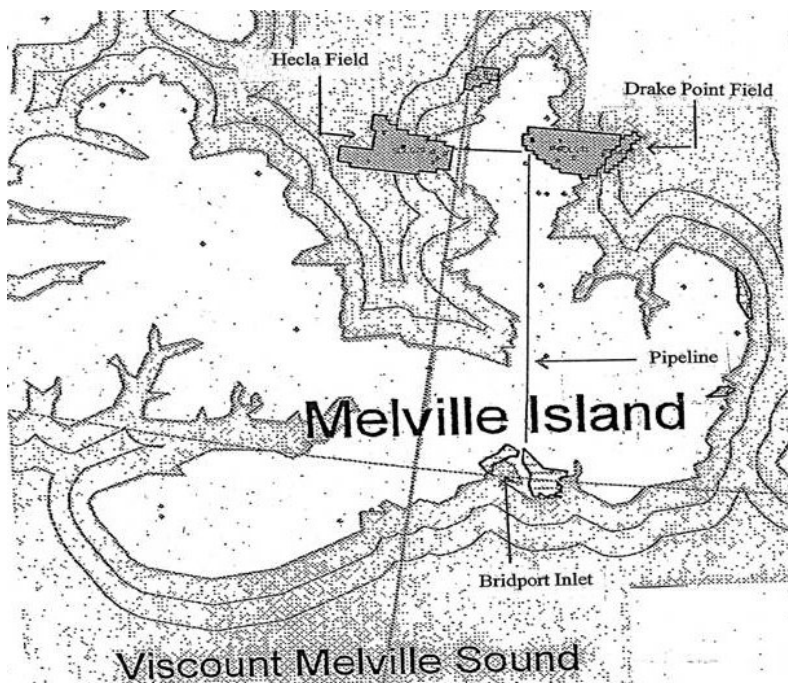
The following project description focuses on the development of the two fields, the pipeline connections, and the land and offshore liquefaction, storage, and berthing facilities. The proposed LNG carrier routes and environmental impact assessments are then described. The detailed project description will be limited as to its specifics as all available literature deals with the APP as it appeared in 1979–1981. It was a significantly smaller project then, roughly a third the size of the project contemplated here. Chan et al. in their 2005 study rely on the earlier project specifics but have dimensioned the project to accommodate the higher capacity envisaged. Nonetheless, many of the essentials are probably the same (e.g., location and nature of the pipeline, liquefaction and storage facilities).

⁷⁹ Arctic Pilot Project, n. 57 above.

⁸⁰ Canadian Arctic Resources Committee, n. 60 above; The Working Group, *Final Report by the Working Group on the Arctic Pilot Project in Greenland Waters* (Calgary: Working Group on the Arctic Pilot Project, 11 April 1984).

⁸¹ Chan et al., n. 35 above.

Figure 9.3. The Melville Island Project



Source: Indian and Northern Affairs Canada, *Land and Exploration Maps, 'Sverdrup Basin,'* available: <http://www.ainci-incac/oil/act/lan/index_e.html> (retrieved 23 October 2008). Map has been adjusted to highlight Melville Island. Arrows and captions are authors' rendition.

Financial Assumptions

Table 9.3 sets out the financial assumptions behind the project.

Table 9.3. Financial assumptions behind Chan et al. analysis

Net present value of project assumes a 15% (after royalty and tax) discount rate
Analysis assumes 75% equity financing
Corporate income tax is included (also NWT and Nunavut corporate taxes)
All costs are in 2005 Canadian dollars
Mobilisation and demobilisation costs are included in capital costs of project components
Drilling costs are separated from other project capital costs. These can be

depreciated at 30% per annum.

All non-drilling facility capital costs qualify for decline balance depreciation at 25% per annum

Crown royalties range from 1 to 5% per month until payout. After payout, the royalty is the greater of 30% net revenue or 5% of gross revenue.

All prices are determined at the delivery point by netback calculation from nearest city gate (i.e., Strait of Canso, Nova Scotia)

Price forecasts are developed from forecasts of Henry Hub prices

Throughput prices are made on a volumetric basis using Canadian dollars per Mcf

Full Flow Through Analysis is assumed

Start up in 2009, 2014, and 2019

Source: Chan et al., n. 35 above, pp. 8–9.

Project Planning Assumptions

The estimated costs of project design and regulatory phases are CAD210 million. The estimated length of time for regulatory filing, regulatory proceedings, design and construction is four years prior to field production.⁸²

Assumptions Behind the Development of the Hecla and Drake Point Fields

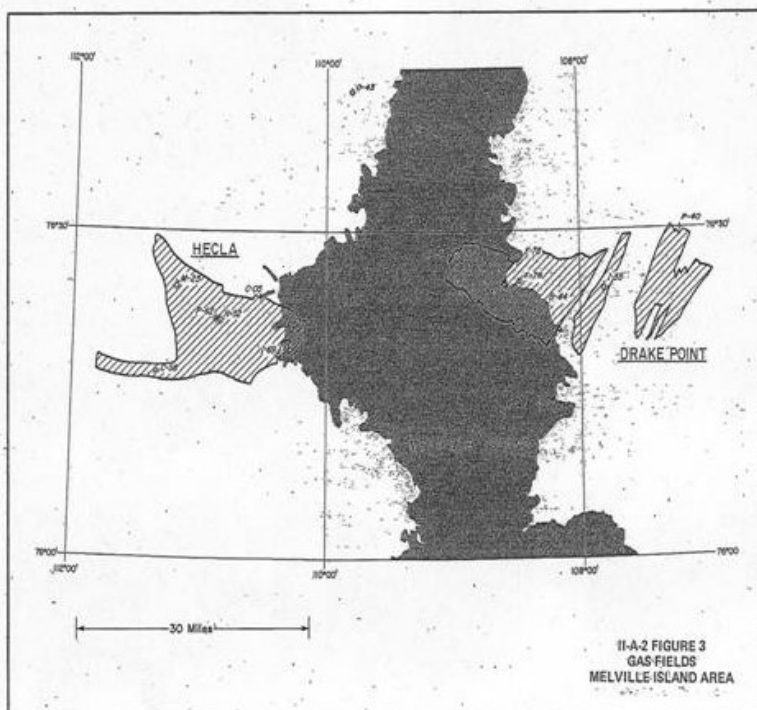
The Arctic Pilot Project estimated marketable field reserves at 5.1 Tcf for the Drake Point field and 3.6 Tcf for the Hecla fields, for a total of 8.7 Tcf for the two fields (Figure 9.4). Other estimates have been somewhat lower (The Canadian Gas Potential Committee and the Geological Survey of Canada estimate a recoverable amount of 8.4 Tcf at the high end and 6.495 Tcf at the lower end.) The energy content of the natural gas is 1,000,000 Btu per thousand cubic feet. The gas is sweet and “essentially free of heavy ends.”⁸³ Chan et al. assume a target production of 1 billion cf/d over a 20-year period.⁸⁴

⁸² This is a very short period of time for all of these tasks to be successfully performed. It is much more likely to take five or six years to accomplish these ends given the difficulty of the project. However, in this study we assume that the four year figure is accurate.

⁸³ Chan et al., n. 35 above, p. 7.

⁸⁴ Id.

Figure 9.4. The Hecla and Drake Point Fields



Source: Arctic Pilot Project, Vol. II, (1979) p. II-A-2, Figure 3.

The plan is to develop the larger Drake Point field first and to tie the Hecla field into production at a later point in project development. To bring both fields into production, it is assumed that 20 wells will be necessary (Table 9.4). (Chan et al. do not specify in what order the wells are to be drilled or when the Hecla field will come on stream.)

Table 9.4. Estimated field development costs

Estimated drilling capital costs: 20 wells at CAD17.5 million/well or CAD350 million
Flowlines: CAD 18 million
Pipelines: 22 kms @ 20 inch diameter or CAD15.9 million
8 kms @ 8 inch diameter or CAD2.8 million
Dehydration plant (1000 MMcf/d throughput): CAD90 million
Total field capital cost: CAD458 million
Annual field operating costs: CAD33 million

Source: Chan et al., n. 35 above, p. 11.

Assumptions Behind the Cross-island Transmission Line to Bridport Inlet

Gas metering and processing are to take place at Drake Point, where the gas will be fed into a 161 kilometre transmission line to Bridport Inlet. There is to be a winter road paralleling the pipeline, which follows the contours of the island, including those of a riverbed as it approaches the liquefaction facilities at Bridport Inlet. There are also three tentative camp locations along the pipeline route. The original APP pipeline proposal called for a 22 inch diameter line for 32 MM cf/d. To accommodate the 1000 MM cf/d planned for in this project, the pipeline diameter was increased to 36 inches. The 161 km transmission line at a later point in the project would be connected to a 36 inch lateral to the Hecla field. A 22,000 horsepower compression station is anticipated. The date of installation of the compression station or the construction of the Hecla lateral is not specified.

Capital costs of the transmission line are estimated to be CAD\$ million. Annual operating costs are estimated at CAD\$4.4 million.

Assumptions Behind the Liquefaction, Berthing and Storage facilities at Bridport Inlet

The liquefaction facilities anticipated are considerably larger than those of the APP to take advantage of economies of scale. (Liquefaction technology has improved significantly over the last thirty years, lowering costs and minimising the possibility that the liquefaction facilities will perform significantly below the anticipated load factor.) To account for the increased volume, a two-train barge facility is anticipated. The design and costs of the liquefaction plant, storage tanks, living quarters, berthing facilities, and other site requirements are critical to the success or failure of the project.

Site development represents the largest single capital cost for the facility (Table 9.5). Roughly half of the costs for site development are related to construction of the dock, with the remainder split between onshore site preparation, piping and mechanical equipment, utilities and communications, and accommodation and site buildings.⁸⁵ The APP exercised considerable ingenuity in the planning of siting and LNG facilities.⁸⁶ Chan et al. arrived at

⁸⁵ Chan et al., n. 35 above, p. 18.

⁸⁶ Among other things, the natural gas was to be utilised for virtually all required power and heating, and water warmed by the process of liquefaction was to be used to create season-round ice-free berthing facilities for the LNG carriers.

their estimates by adjusting the APP estimates upwards so as to conform to 2005 costs.

Table 9.5. Liquefaction and site estimates

Project development: CAD9 million
Site development: CAD955 million
LNG liquefaction plant: CAD657 million
Barge for LNG plant: CAD77 million
LNG storage barges (2@100,000m ³ LNG apiece): CAD283 million
Barge tow-in costs: CAD29 million
Total capital costs: CAD2,011 million
Annual operating costs CAD84 million

Source: Chan et al., n. 35 above, p. 17.

Shipping Estimates

To date no LNG carrier with an Arctic Class 7 icebreaking capacity has been constructed. The specifics of the proposed LNG carrier fleet are not elaborated in the project proposal. For example, it is not known whether these proposed vessels will be equipped with azimuth propeller pods, which enable a vessel to use its stern configuration for icebreaking and retain its prow designed for optimal speeds in non-ice filled waters. (Another advantage of this configuration is that the propeller placed at the stern of the ship can create a strong current along the underwater hull of the carrier enabling it to break the ice better.) The return journey to and from the Strait of Canso in Nova Scotia is 5,258 nautical miles. It is estimated that seven carriers will make the return voyage every 21.5 days, 345 days per year. The capital cost of the LNG carriers is estimated to be CAD268 million apiece or CAD1,875 million for seven vessels as opposed to CAD1,340 million for five vessels (the Greenland transshipment example). Annual operating costs are CAD44 million per vessel or CAD308 million for seven vessels and CAD220 million for five vessels.

Estimates of the Godhavn Transit Terminal

Chan et al. have developed the Greenland transshipment alternative to reduce the number of Arctic Class 7 icebreaking tankers required from seven to five. These vessels would operate on the first leg of the voyage from Melville Island to Godhavn. The second leg (to the Strait of Canso) would be serviced by two 200,000 m³ capacity LNG carriers at CAD206 million per vessel, with annual operating costs of CAD33 million apiece. Capital costs of berthing, and storage by the transit terminal are estimated at CAD381 million. Annual operating costs are not mentioned in the Chan study. Differences between the Strait of Canso and a European alternative are briefly mentioned in the study: “Delivery to other ports, such as to Europe, would require additional tankers and may result in the establishment of a hub for Atlantic LNG trade.”⁸⁷

Sensitivity of the Godhavn Transit Alternative

The fundamental difference between the two scenarios is that the Melville Island-Godhavn-Strait of Canso scenario has capital costs of CAD257 million more than the Melville Island-Strait of Canso alternative, but annual operating costs of CAD17 million less.

Chan et al. undertook a sensitivity study of the two alternatives along several parameters (Table 9.6). Perhaps most significant was how the two alternatives compared under differing price scenarios (Table 9.7).

Based on Chan et al., Table 9.7 compares the cost of the two alternatives based on start date. It is assumed that production would start earliest in 2014 (not 2009 as assumed in Chan et al.).

Interestingly, as shown in Table 9.7, project economies improve drastically when one takes A', B', and C' into account. Here the initial price to 2015 is CAD7.37 per Mcf (Mcf = thousand cubic feet) rather than is the case with scenarios A, B, and C (CAD5.85 per Mcf).

⁸⁷ Chan et al., n. 35 above, p. 29.

Table 9.6. CERI Price Forecasts for Melville Island Natural Gas

Forecast A: Constant at CAD5.85 /Mcf until 2015, then increases to CAD13.89/Mcf in 2040
Forecast A': Constant at CAD7.37/Mcf until 2025, then increases to CAD13.89/Mcf in 2040
Forecast B: Constant at CAD5.85/Mcf until 2015, then increases to CAD10.10/Mcf in 2040
Forecast B': Constant at CAD7.37/Mcf until 2015, then increases to CAD10.10/Mcf in 2040
Forecast C: Constant at CAD5.85/Mcf until 2015, then increases to CAD7.55/Mcf in 2040
Forecast C': Constant at CAD7.37/Mcf until 2015, then increases to CAD7.55/Mcf in 2040
^a All prices at Henry Hub. A differential of CAD1.37/Mcf is calculated between prices at Henry Hub and prices at the Strait of Canso

Source: Chan et al., n. 35 above, pp. 14–15.

Table 9.7. The two Melville Island alternatives compared at NPV 15%

	LNG (million CAD)	Greenland transfer (million CAD)
NPV@ 15% Price Forecast A Production start 2014 Production start 2019	29 439	2 409
NPV@ 15% Price Forecast B Production start 2014 Production start 2019	(235) (92)	(261) (119)
NPV@ 15% Price Forecast C Production start 2014 Production start 2019	(427) (461)	(451) (483)
NPV@ 15% Price Forecast A' Production start 2014 Production start 2019	570 846	535 817
NPV@ 15% Price Forecast B' Production start 2014 Production start 2019	300 300	266 267
NPV@ 15% Price Forecast C' Production start 2014 Production start 2019	105 (98)	70 (128)

Source: Chen et al., n. 35 above, p. 35.

While the seven LNG carrier option is preferable to the Greenland transshipment option, the differences between the two are not terribly significant. Both are dependent on rising natural gas prices to be profitable. However, natural gas prices have evolved considerably since 2005, the date of

publication of CERI report. Mcf prices of USD8.00 to USD10 per Mcf (CAD12.71 to CAD15.25 per Mcf) are not that uncommon today.

The European Option

Chan et al. consider the European option, but dismiss it: “While the optionality provided by alternative delivery points is considered valuable, quantification of this advantage is not examined within the scope of this study.”⁸⁸ This rejection is prompted by two factors: the 2003 imported prices of pipeline natural into Europe as reported by the International Energy Agency and additional transportation costs. “With additional transportation [required], it is hypothesised the delivery of Arctic gas to European markets would not be competitive with the sources of gas currently serving those markets.”⁸⁹ The authors of this contribution beg to differ on both counts.

With regards to the price of pipeline gas into the EU, current reported prices are approximately USD370 per thousand m³. This translates into prices of USD10.53 (CAD13.38) per thousand cubic feet. Furthermore, the prices quoted are border prices. As is well known, transmission costs in the EU are high relative to costs elsewhere, for example, North America. Arctic LNG can be sold directly to coastal urban centres thereby saving on the costs of transmitting pipeline gas from the edges of the EU market.

Regarding the cost of additional transportation, it is curious that Chan et al. consider the major American LNG ports—Everett, Massachusetts; Cover Point, Maryland; Elba Island, Georgia; and Lake Charles, Louisiana—but eschew these for a non-existing terminal in Nova Scotia. Similarly, they downplay the possibilities of European markets, even though European terminals may be more proximate to Melville Island than the US terminals (see Table 9.2).⁹⁰ Adding one LNG carrier to the two conventional LNG carriers operating out of Godhavn expands the range of possible markets to be supplied to those within a radius of 3,496 nautical miles (6,992 nautical miles return).

⁸⁸ Chan et al., n. 35 above, p. 16.

⁸⁹ Id.

⁹⁰ “Regasification facilities in Nova Scotia are assumed to be developed by third parties. The four existing terminals in the US at Everett, MA, Cover Point, MD, Elbas Island, GA, and Lake Charles, LA, are unlikely to accept regular shipments from Canada’s North since they are already fully contracted for periods of up to 20 years,” Chan et al., n. 35 above, p. 23. The Repsol receiving terminal at Saint John, New Brunswick, to the degree that it has spare capacity, would be a substitute for the Strait of Canso. Utilising this terminal might add two to three days to LNG carrier round trips.

This radius would include the terminals at Milford Haven and Le Havre. The additional LNG carrier increases the capital expenditure of the project by 3.5 percent and operational costs by 6.5 percent. To determine the differences which these costs make in terms of the return on the over-all project, the authors conducted a simplified sensitivity study. Taking capital investment, operational costs, and throughput of the two variations and calculating the price which would return 15 percent on the capital invested (ignoring royalties, taxation, depreciation, and financing costs), we calculated the impact of the transport differential between Le Havre and the Strait of Canso. Deliveries to the Strait of Canso would cost USD119 per ton LNG or USD3.27 per Mcf (USD115.60 per thousand m³) while deliveries to Le Havre would run USD129.22 per ton LNG or USD3.54 per Mcf (USD139.22 per thousand m³).⁹¹ The transport differential between existing facilities at Le Havre and non-existent facilities in the Strait of Canso calculated in this manner is USD0.265 per Mcf. While others might disagree, we feel that this is not a terribly significant differential given the price at which LNG is now trading on world markets.

The disappearing polar ice may make further economies possible. For example, one might be able to reduce the number of Arctic Class 7 LNG carriers required to four. With such an adjustment, the price of delivery to EU markets would be even lower than in the arguments presented here. Finally, it may not be necessary to invest in LNG carrier capacity as bare boat charters of LNG carriers are reportedly on the rise.

This analysis does not in any way attempt to minimise the risk of engaging in the Melville Island project or argue that European firms should be lining up to invest in the Melville Island project. Rather it is intended to point out that there could well be a future for the European natural gas industry in the Canadian Arctic, in even as remote a place as Melville Island.

⁹¹ We are assuming an exchange rate of CAD1 = USD 0.75. Delivered amounts are respectively 6,138,000 tons LNG per annum (Strait of Canso) versus 6,006,000 tons LNG per annum (Le Havre) due to LNG boil off during transport. These figures appear to be very low because taxation, financing costs, royalties, and depreciation are not taken into account and the figures are in USD rather than CAD. Changing these assumptions could very easily double our figures, which would approximate those in the Chan et al. sensitivity analysis replicated in Table 9.7.

Chapter 10

Canada, the European Union and Regional Fisheries Management in the North Atlantic: Conflict, Cooperation and Challenges

Erik Franckx*, Koen Van den Bossche, and David L. VanderZwaag**

10.1. Introduction

Canada and the European Union (EU) cooperate in four regional fisheries management organisations (RFMOs) applicable to areas of the North Atlantic. They include the North Atlantic Salmon Conservation Organization (NASCO),¹ the International Commission for the Conservation of Atlantic Tunas (ICCAT),² the Northwest Atlantic Fisheries Organization (NAFO),³ and the North East Atlantic Fisheries Commission (NEAFC).⁴

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¹ Established by the *Convention for the Conservation of Salmon in the North Atlantic Ocean*, which entered into force on 10 October 1983, NASCO provides a forum for consultation and cooperation in the salmon stocks that migrate beyond areas of fisheries jurisdiction of coastal states of the Atlantic Ocean north of 36°N latitude. North Atlantic Salmon Conservation Organisation (NASCO), “About NASCO,” available: <<http://www.nasco.int>> (retrieved 20 November 2008) [hereinafter NASCO].

² The International Commission for the Conservation of Atlantic Tunas (ICCAT), responsible for the conservation of tunas and tuna-like species in the Atlantic Ocean and adjacent seas, was established by the *International Convention for the Conservation of Atlantic Tunas*, which entered into force in 1969. International Commission for the Conservation of Atlantic Tunas (ICCAT), “Introduction” at <<http://www.iccat.int/en/introduction.htm>> (retrieved 20 November 2008) [hereinafter ICCAT].

³ NAFO, founded in 1979 as a successor to the International Commission of the Northwest Atlantic Fisheries (ICNAF), has management responsibility for many fisheries resources of the Northwest Atlantic, except for salmon, tunas/marlins, whales and sedentary species. Northwest Atlantic Fisheries Organisation (NAFO), “About NAFO,” available <<http://www.nafo.int/about/frames/about.html>> (retrieved 20 November 2008).

⁴ NEAFC, established pursuant to the *Convention on Future Multilateral Cooperation in North East Atlantic Fisheries* which entered into force in November 1982, recommends measures to

This chapter focuses on the role of Canada and the EU in two of the RFMOs dealing with straddling fish stocks, NAFO and NEAFC, through a three-part format. The first section highlights the well-known conflict between the EU and Canada over the setting of quotas within NAFO for Greenland halibut. The famous *Estai* incident involved the arrest by Canada of a Spanish trawler in the NAFO Regulatory Area outside Canada's 200 nautical mile (nm) fisheries zone. Spain's subsequent litigation against the European Commission and Council for agreeing to a lowered total allowable catch (TAC) for Greenland halibut is also described. The second section addresses two main dimensions of cooperation. Global instruments and initiatives guiding regional cooperation in the North Atlantic are first described. The complexities of cooperation in relation to fisheries at the EU level are then discussed, including competences on the external level and the European Community's (EC) role in regional fisheries organisations. The third section reviews four ongoing challenges in regional fisheries management: putting the precautionary approach into practice; implementing the ecosystem approach; reaching consensus on allocation criteria; and ensuring effective compliance and enforcement. The chapter concludes with some key questions raised for discussion at the Brussels Workshop on EU Canada Relations in Law of the Sea and Ocean Governance, 4–5 December 2008.

10.2. Conflict

10.2.1. The *Estai* Incident

Canadian and European fisheries relations infamously came to the forefront of affairs during the *Estai* incident. The Spanish vessel, *Estai*, was arrested for fishing Greenland halibut (turbot) outside Canada's 200 nm fisheries zone off Newfoundland in March 1995. The arrest might be described an act of exasperation because of the failure of NAFO to adequately regulate the harvesting of turbot and growing concern over the unsustainable fishing

Contracting Parties for the rational exploitation of fish stocks in the Convention Area taking scientific advice from the International Council for the Exploration of the Sea (ICES). North East Atlantic Fisheries Commission (NEAFC), "About NEAFC," available: <<http://www.neafc.org/about/neafc-faq.htm>> (retrieved 20 November 2008) [hereinafter NEAFC].

practices of Spanish and Portuguese vessels in the NAFO Regulatory Area.⁵ Canada had lost patience over the excessive use of the NAFO objection procedure as the EU sought to exceed NAFO recommended quotas, garnering some 48 EU objections between 1985 and 1991.⁶ With the accession of Spain and Portugal to the European Economic Community, the problem of Portuguese and Spanish overcapacity was exported to the waters off Canada⁷ as Spain's distant-water fleets had not been given many fishing opportunities within the Community waters. At the same time, its fleets were evicted from third country waters following the worldwide emergence of 200 nm limits.⁸

NAFO attempts to set Greenland halibut quotas for 1995 was the matter of contention. The NAFO's Fisheries Commission had set a total allowable catch (TAC) of 27,000 tonnes with 60.37 percent allocated to Canada, 12.59 percent to the EU and the remainder principally to Russia and Japan. The EU objected and established a unilateral quota of 69 percent of the TAC.⁹ The soaring Spanish catch of turbot from 13 tonnes in 1989 to over 40,000 tonnes in 1994 was a matter of concern to Canada.¹⁰ The misreporting of fish catches in 1993 and 1994 by both Spanish and Portuguese vessels and the apparent lack of effective sanctioning by Spanish and Portuguese authorities for the infractions

⁵ For a general review and critique of NAFO, see T. Henriksen, G. Hønneland, and A. Sydnes, "The Northwest Atlantic Fisheries Organization (NAFO)" in T. Henriksen, G. Hønneland, and A. Sydnes, eds, *Law and Politics in Ocean Governance: The UN Fish Stocks Agreement and Regional Fisheries Management Regimes* (Leiden: Martinus Nijhoff, 2006), pp. 63–97. NAFO was established pursuant to the 1978 Convention on Future Multilateral Co-operation in the Northwest Atlantic Fisheries. This convention was approved by the European Economic Community (EEC) by Council Regulation (EEC) No. 3179/78 of 28 December 1978 Concerning the Conclusion by the European Economic Community of the Convention on Future Multilateral Co-operation in the Northwest Atlantic Fisheries, *Official Journal* L 378 (30 December 1978) 1. NAFO's Regulatory Area is that part of the area of the NAFO Convention Area not falling under the sovereignty or within the jurisdiction of coastal states. Council Regulation (EC) No. 27/2005 of 22 December 2004 Fixing for 2005 the Fishing Opportunities and Associated Conditions for Certain Fish Stocks and Groups of Fish Stocks, Applicable in Community Waters and, for Community vessels, in Waters Where Catch Limitations are Required, Article 3 (d), *Official Journal* L 12 (14 January 2005) 1. The Northwest Atlantic Area is defined in Article 1 of the Convention.

⁶ Counter-Memorial of Canada (Jurisdiction) in the *Fisheries Jurisdiction Case (Spain v. Canada)*, The Hague, International Court of Justice (February 1996), p. 13 [hereinafter Counter-Memorial of Canada].

⁷ D. Day, "Tending the Achilles' Heel of NAFO: Canada Acts to Protect the Nose and Tail of the Grand Banks," *Marine Policy* 19 (1995): 257–270, p. 265.

⁸ R. R. Churchill, "The EC and its Role in Some Issues of International Fisheries Law," in E. Hey, ed., *Developments in International Fisheries Law* (The Hague, Boston: Kluwer Law International, 1999), p. 522.

⁹ Counter-Memorial of Canada, n. 6 above, pp. 19–20.

¹⁰ *Id.*, p. 18.

heightened Canadian concern.¹¹

Canada readied itself for unilateral enforcement actions through both legislative and regulatory measures. On 12 May 1994 the Canadian Parliament adopted Bill C-29¹² amending the *Coastal Fisheries Protection Act*.¹³ The amendments recognised straddling stocks on the Grand Banks of Newfoundland as threatened with extinction and emphasised the urgent need for all fishing vessels to comply in both Canadian fisheries waters and the NAFO Regulatory area with sound conservation measures.¹⁴ Bill C-29 prohibited persons onboard certain classes of vessels from fishing for stated straddling stocks in contravention of prescribed conservation measures. It also authorised regulations to be passed stipulating vessels and stocks subject to the legislation, as well as setting conservation measures.¹⁵ On 3 March 1995 Canada amended the *Coastal Fisheries Protection Regulations*¹⁶ providing for enforcement action against Spanish and Portuguese vessels fishing for straddling stocks in the NAFO Regulatory area in contravention of prescribed conservation measures and included a prohibition on fishing for Greenland halibut.

Canada subsequently initiated enforcement action of its newly-amended regulations. Canadian fisheries protection officers boarded and inspected the *Estai* on 9 March 1995. The ship was seized, and the master was arrested in violation of the *Coastal Fisheries Protection Act and Regulations*. The master was released on March 12th upon payment of CAD8,000 in bail, and the vessel was released on March 15th upon provision of a CAD500,000 bond.¹⁷

Spain was unable to challenge Canada's enforcement actions in the International Court of Justice (ICJ). In a case filed with the ICJ on 28 March 1995, a majority of the Court, in a decision handed down on 4 December 1998, agreed with Canada's position that the Court did not have jurisdiction to consider the merits of the case.¹⁸ Canada had deposited a new optional clause declaration with the ICJ on 10 May 1994 excluding from the Court's jurisdiction disputes concerning Canadian conservation and management measures taken with respect to vessels fishing in the NAFO Regulatory Area

¹¹ Id.

¹² *Act to amend the Coastal Fisheries Protection Act*, S.C. 1994, c. 14.

¹³ *Coastal Fisheries Protection Act*, R.S.C. 1985, c. C-33.

¹⁴ *Act to amend*, n. 12 above, Section 5.1.

¹⁵ Id., Section 5.2.

¹⁶ *Coastal Fisheries Protection Regulations (Amendment)*, SOR/95-136.

¹⁷ Counter-Memorial of Canada, n. 6 above, p. 21.

¹⁸ *Fisheries Jurisdiction (Spain v. Canada)*, *Jurisdiction of the Court, Judgment*, I.C.J. Reports 1998, p. 432.

and the enforcement of such measures.¹⁹

In *Jose Pereira E Hijos S.A. v. Canada (Attorney General)*,²⁰ corporate owners and the captain of the *Estai* instituted a civil action before the Federal Court of Canada with the statement of claims being filed on 28 July 1995 and amended on 30 April 2003. Various damages were sought, including CAD150,000 in general damages for each plaintiff, with key allegations being that the arrest of the ship in international waters was illegal and that there was an unlawful trespass by servants/agents of the federal Crown. A central argument by the plaintiffs was that the arrest was unlawful because supporting Canadian regulations were not enacted for valid conservation and management measures agreed to by NAFO Contracting Parties.

In a January 2007 decision, the Federal Court of Appeal reversed a damage award by the trial judge and denied all damage claims.²¹ The Court found that the Canadian Parliament's intention was for Canada to take enforcement actions in the NAFO Regulatory Area regardless of whether or not Contracting Parties had reached agreement on conservation measures. The Court also indicated there was no demonstration that the Canadian government had acted in bad faith in enacting the regulations.

In April 1995, Canada and the EU reached an agreement dousing the flames lit by the *Estai* incident.²² Canada agreed to repeal its regulatory targeting of Spanish and Portuguese vessels fishing in the NAFO Regulatory Area (effective 1 May 1995), and both parties agreed to jointly submit to the NAFO Fisheries Commission a submission to strengthen NAFO conservation and enforcement measures.²³ Both parties also agreed to implement on a provisional basis various control and enforcement measures, including a commitment to ensure independent and qualified observers aboard all vessels fishing in the NAFO Regulatory Area.²⁴

¹⁹ Canadian Declaration of 10 May 1994, in Counter-Memorial of Canada, n. 6 above, Annex 2.

²⁰ *Jose Pereira E Hijos S.A. v. Canada (Attorney General)*, 2005 FC 1011, 17 C.E.L.R. (3d) 1.

²¹ 2007 FCA 20, 26 C.E.L.R. (3d) 169.

²² See D. Freestone, "Canada and the EU Reach Agreement to Settle the *Estai* Dispute," *International Journal of Marine and Coastal Law* 10 (1995): 397–411.

²³ Council Decision 95/586/EC of 22 December 1995 Concerning the Conclusion of the Agreement Constituted in the Form of an Agreed Minute, an Exchange of Letters, an Exchange of Notes and the Annexes Thereto Between the European Community and Canada on Fisheries in the Context of the NAFO Convention, *Official Journal* L 327 (30 December 1995) 35–45 [hereinafter EC/Canada Agreement]. It was signed by the Commission pursuant to Council Decision 95/546/EC of 17 April 1995 on the Signature and Provisional Application of the Agreement Between the European Community and Canada on Fisheries in the Context of the NAFO Convention, *Official Journal* L 308 (21 December 1995) 79.

²⁴ Counter-Memorial of Canada, n. 6 above, p. 81. For further reviews of the *Estai* incident, see T. L. McDorman, "Canada's Aggressive Fisheries Actions: Will They Improve the Climate for

10.2.2. Consequences of the *Estai* Incident Observable at the EU Level

Consequently, in September 1995, NAFO approved a formula for the allocation of Greenland halibut quotas. Accordingly, the EU fisheries Council established for 1995, an EC quota of approximately 19 percent of the NAFO TAC.²⁵ This TAC was challenged before the European judicial institutions.

In Case T-196/99,²⁶ for example, Spain bought a claim to the European Court of First Instance (ECFI) seeking a declaration that the Commission and Council were liable under Article 288 of the EC Treaty²⁷ for losses suffered by it following the adoption of the 1995 TAC for Greenland halibut. With respect to the alleged illegality of the Council's action in adopting Regulation 3366/94,²⁸ Spain argued that by not lodging an objection, the Council neglected the objectives of the Common Agricultural Policy (CAP) set out in Article 33 of the EC Treaty. The Council was accused of misusing its discretion because it refrained from objecting to the 1995 TAC for Greenland halibut on the basis of the objectives set out in Article 33 of the EC Treaty. Failure to oppose the TAC particularly compromised the objective of ensuring rational development of agricultural production and a fair standard of living for the agricultural community.²⁹ The ECFI noted that the Council's decision to accept the TAC and its acquiescence by implication concerned a measure for conserving marine

International Agreements?" *Canadian Foreign Policy* 2 (1994): 5–28; J. A. Beesley and M. Rowe, "Sound Basis in International Law for Canada's Actions in the 'Turbot War'," *Canadian International Lawyer* 1 (1995): 177–180; G. L. Lugten, "Fisheries War for the Halibut," *Environmental Policy and Law* 25 (1995): 223–229; P. M. Saunders, "And Now That the War Is Over ... Looking Back at the Canada-European Union Fisheries Confrontation of 1995," *The Canadian Law Newsletter* 31 (1996): 15–37; and D. R. Teece, "Global Overfishing and the Spanish-Canadian Turbot War: Can International Law Protect the High-Seas Environment?" *Colorado Journal of International Environmental Law & Policy* 8 (1997): 89–125.

²⁵ Regulation (EC) No. 1761/95 of 29 June 1995 Amending, for the Second Time, Regulation No. 3366/94, L 171 *Official Journal* 1 (21 July 1995).

²⁶ Case T-196/99, *Area Cova, SA and Others v. Council of the European Union and Commission of the European Communities*, 2001 ECR II-3597 [hereinafter Case T-196/99].

²⁷ This is the contractual liability stipulation which states that the Community shall make good any damage caused by its institutions in the performance of their duties.

²⁸ Regulation 3366/94 recorded that the maximum catch level for Greenland halibut in NAFO Sub-areas 2 and 3 in 1995 was as yet unallocated among NAFO Contracting Parties, that the NAFO Fisheries Commission was to convene a meeting to decide the allocation, and that catches of Greenland halibut would be authorised in 1995 and counted against the quotas decided for Member States. Council Regulation (EC) No. 3366/94 of 20 December 1994 Laying Down for 1995 Certain Conservation and Management Measures for Fishery Resources in the Regulatory Area, L 363 *Official Journal* 60 (31 December 1994).

²⁹ Case T-196/99, n. 26 above, para. 64.

resources. Such a measure forms an integral part of the CAP as it is intended, in particular, to ensure the rational development of resources³⁰ and the availability of supplies.³¹

The applicants also alleged that the defendants had misused their powers by adopting a bilateral fisheries agreement with Canada and Regulation 1761/95. Those measures were said to be taken on the basis of EC powers in the area of the Common Fisheries Policy (CFP) in order to achieve objectives different from the CFP objectives particularly that of normalising commercial relations between Canada and the Community.

The ECFI recognised that the measures were designed to put an end to the fishing conflict between Canada and the EC, but stated that their form, subject-matter and reasoning, did fall within the context of the CFP for the following reasons: Firstly, it was in the interest of EC fishermen to ensure the safety of their fishing operations. Secondly, since Canada is represented in several international fishing organisations and assumes a significant role there, the safeguarding of good relations with that country was important in the interests of managing fishing resources at the world level. Maintaining good international relations was considered legitimate in the context of all EC policies. The institutions must always take account, when legislating in the context of a specific policy, its effects on the other activities of the Union, particularly that of public interest.³²

The applicants also claimed to have had a legitimate expectation of a favourable outcome of the dispute between Canada and the EC and in the maintenance of the fishing opportunities which they had enjoyed before it. The ECFI noted that “the allocation of quotas cannot in principle create a situation of legitimate expectation for economic operators.”³³

It was also alleged that the conservation measure was *disproportionate vis-à-vis* the damage caused to Community vessel owners and manifestly

³⁰ *Treaty Establishing the European Community* [consolidated version], *Official Journal* C 325 (24 December 2002) 33-184 [hereinafter EC Treaty], Article 33 (1) (a).

³¹ *Id.*, Article 33 (d); Case T-196/99, n. 26 above, para. 76.

³² Case T-196/99, n. 26 above, para. 158.

³³ *Id.*, para. 121. In this case, the ECFI refers to quotas. In this context, however, this concept is not to be understood as referring to the fishing opportunities allocated to the Member States and derived from a TAC. Rather it refers here to that part of the TAC allocated to the Community as a whole. In particular, it is pointed out that economic operators cannot have a legitimate expectation that an existing situation which is capable of being altered by the EC institutions in the exercise of their discretion will be maintained, especially in an area such as the CAP, in which the institutions have wide discretion. That applies even more strongly in the context of international negotiations, which imply concessions on either side as well as the negotiation of a compromise accepted by all the Contracting Parties. *Id.*, paras 122–124.

inappropriate with regard to the objective pursued.³⁴ The ECFI pointed out that the fixing of a TAC at a level avoiding the worsening or the diminution of a fish stock also served the interests of EC fishermen because it allowed the safeguarding of resources in the long term. The other CAP objectives had not been sacrificed.³⁵ On the contrary, an approach by the Council taking into account only the objective of ensuring a higher standard of living for certain fishermen in the short term would have involved a serious risk of making the objectives of ensuring the rational development of resources and availability of supplies impossible.

³⁴ Id., para. 78. On the conformity of a Community legislative instrument with the principle of proportionality see Case C-161/96, *Südzucker Mannheim v. Hauptzollamt Mannheim*, 1998 ECR I-281 [hereinafter Case C-161/96], para. 31. In Case C-535/03, the European Court of Justice (ECJ) observed that the principle of proportionality is a general principle of Community law and, in the field of fisheries, is embodied in Article 34 (2) of the EC Treaty. That provision entrusts the Community legislature with the task of implementing the CAP as formulated in Article 33. In particular, a fair standard of living for the agricultural community and the availability of supplies needs to be assured, while excluding any discrimination between Community producers. The ECJ reiterated that the Community legislature enjoys a wide discretion in this field, corresponding to the political responsibilities given to it by Articles 34–37 of the EC Treaty. See Case C-535/03, *Unitymark Ltd, North Sea Fishermen's Organisation v. Department for Environment, Food and Rural Affairs*, 2006 ECR I-2689 [hereinafter Case C-535/03], paras 53–54.

³⁵ In pursuing the objectives of the CAP, the EC institutions must secure the permanent harmonisation made necessary by any conflicting objectives taken individually and, where necessary, give any one of them temporary priority in order to satisfy the demands of the economic factors or conditions in view of which their decisions are made. One condition must, however, be met, that such harmonisation does not have the effect of rendering impossible the realisation of the other objectives. As stressed by the ECFI or ECJ in the following cases: Joined Cases T-466/93, T-469/93, T-473/93, T-474/93 and T-477/93, *O'Dwyer and Others v. Council*, 1995 ECR II-2071, para. 80; Case C-179/95, *Spain v. Council*, 1999 ECR I-6475, para. 28; and Case C-324/96, *Petridi v. Simou and Others*, 1998 ECR I-1333, para. 30.

10.3. Cooperation

10.3.1. Global Instruments and Initiatives Guiding Cooperation in the North Atlantic

While various FAO instruments may also guide regional cooperation,³⁶ Canada and the EU have been particularly influenced towards greater cooperation by the 1995 UN Fish Stocks Agreement³⁷ and the December 2006 UN Sustainable Fisheries Resolution.³⁸ With the EC ratifying the UN Fish Stocks Agreement on 19 December 2003 and Canada on 3 August 1999,³⁹ the EC and Canada committed to strengthening regional fisheries management organisations in light of modern sustainability principles like precaution and the ecosystem approach, as well as enhancing regional compliance and enforcement arrangements.⁴⁰ Canada and the EC have subsequently played substantial roles in achieving modernisation amendments to the NAFO Convention⁴¹ and the EU

³⁶ Food and Agriculture Organisation of the United Nations' (FAO) instruments include the Code of Conduct for Responsible Fisheries; International Plans of Action relating to the incidental catch of seabirds (IPOA–Seabirds), the conservation of sharks (IPOA–Sharks), the management of fishing capacity, and the prevention /deterrence of illegal, unreported and unregulated fishing (IPOA–IUU); and the International Guidelines for the Management of Deep-Sea Fisheries in the High Seas. The instruments are available through the FAO website: <<http://www.fao.org/fishery/publications/en>> (retrieved 20 November 2008).

³⁷ *Agreement for the Implementation of the Provisions of the United Nations Convention on the Law of the Sea of 10 December 1982 Relating to the Conservation and Management of Straddling Fish Stocks and Highly Migratory Fish Stocks*, 8 September 1995, *I.L.M.*, 34, 15421580 (1995), entry into force 11 December 2001, available: <daccessdds.un.org/doc/UNDOC/GEN/N95/274/67/PDF/N9527467.pdf?OpenElement> (retrieved 14 November 2008) [hereinafter 1995 UN Fish Stocks Agreement].

³⁸ UN General Assembly, *Sustainable fisheries, including through the 1995 Agreement for the Implementation of the Provisions of the United Nations Convention on the Law of the Sea of 10 December 1982 relating to the Conservation and Management of Straddling Fish Stocks and Highly Migratory Fish Stocks, and related instruments*, A/RES/61/105 (6 March 2007).

³⁹ Division for Ocean Affairs and Law of the Sea, *Chronological Lists of Ratification*, available: <http://www.un.org/Depts/los/reference_files/chronological_lists_of_ratification.htm> (retrieved 20 November 2008).

⁴⁰ For an overview of the Agreement's key provisions, see T. Henriksen, G. Hønneland, and A. Sydnes, "The Fish Stocks Agreement," in Henriksen, et al., n. 5 above, pp. 11–59.

⁴¹ On 28 September 2008, NAFO adopted the *Amendment to the Convention on Future Multilateral Cooperation in the Northwest Atlantic Fisheries* (GC Doc. 07/4), but the amended text needs to be ratified by at least three-fourths of the NAFO Contracting Parties. The amended text is available at <<http://www.nafo.int/about/frames/about.html>> (retrieved 20 November 2008).

influenced amendments to the NEAFC Convention.⁴² They have also cooperated in enhancing regional compliance and enforcement arrangements although many challenges remain.⁴³

The 2006 UN Sustainable Fisheries Resolution impelled regional fisheries management organisations to adopt and implement various measures to protect vulnerable marine ecosystems (VMEs) from bottom fishing activities. The identification of VMEs and the determination whether bottom fishing could cause significant adverse impacts to such ecosystems was set as a priority.⁴⁴ In areas where VMEs are known to occur or likely to occur, RFMOs were urged to close such areas and to ensure conservation and management measures were established to prevent significant adverse impacts.⁴⁵ RFMOs were also asked to require their members to address

⁴² A “new” NEAFC Convention was adopted through 2004 and 2006 amendments, available *Convention on Future Multilateral Co-operation in the North-East Atlantic*, available: <http://www.neafc.org/about/docs/new_convention.pdf> and also <http://www.neafc.org/system/files/%252Fhome/neafc/drupal2_files/london-declarlation_and_new_convention.pdf> (both retrieved 20 November 2008) [hereinafter “New” NEAFC Convention]. For the version of the convention before 2004 and 2006 amendments, see *Convention on Future Multilateral Co-operation in the North-East Atlantic*, London, 18 November 1980, 1285 *U.N.T.S.* 129, *Official Journal L* 227, 12 August 1981, entry into force on 17 March 1982, available: <<http://eurlex.europa.eu/Notice.do?val=86901:cs&lang=en&list=86901:cs,87372:cs,87022:cs,87021:cs,&pos=1&page=1&nbl=4&pgs=10&hwords=&checktexte=checkbox&visu=#texte>> (retrieved 20 November 2008) [hereinafter NEAFC Convention]. Amendments to the NEAFC Convention were adopted in 2004 and 2006 by the NEAFC Commission. And even though Contracting Parties have agreed to use the convention so amended on a provisional basis, pending ratification, these amendments have not been taken into consideration by the present overview unless specifically mentioned in the text. The NEAFC Convention replaces the North-East Atlantic Fisheries Convention of January 1959 following the extension of states’ jurisdiction over living resources in their adjacent waters to up to 200 nm. For a historical overview of the development of regional fisheries management and RFMOs in the North Atlantic, see S. S. Gezelius, “The Arrival of Modern Fisheries Management in the North Atlantic: A Historical Overview,” in S. S. Gezelius and J. Raakjær, eds, *Making Fisheries Management Work: Implementation of Policies for Sustainable Fisheries* (Dordrecht: Springer, 2008), pp. 27–40.

⁴³ M. Arbuckle, B. Atkinson, and G. Valentina, *Performance Review Panel Report of the North East Atlantic Fisheries Commission, NEAFC* (6 November 2006), available: <<http://www.neafc.org/system/files/performance-review-final-edited.pdf>> (retrieved 20 November 2008) [hereinafter the NEAFC Performance Report]. This document was a result of the agreement by NEAFC members to regularly assess NEAFC performance in relation to the NEAFC Convention, n. 42 above. Section 3.6 et seq of the NEAFC Performance Report especially examines the role of NEAFC in a regional and international context. Section 4.6 concludes that there is room for improvement in the relationship between NEAFC and the Convention for the Protection of the Marine Environment of the North-East Atlantic (OSPAR).

⁴⁴ UN General Assembly, n. 38 above, para. 83(b).

⁴⁵ Id. at para. 83(c).

encounters with VMEs by vessels flying their flag. Vessels encountering vulnerable areas, such as cold water corals and sponge grounds, should be required to cease bottom fishing and to report the encounter so appropriate measures can be adopted for the relevant site.⁴⁶

Canada and the EU, spurred on by the UN Resolution, jointly drafted a proposal for bringing NAFO into conformity with the VME protection commitments. The proposal was adopted in revised form at the Inter-sessional Meeting for the NAFO Fisheries Commission in May 2008,⁴⁷ and a new chapter on bottom fisheries in the NAFO Regulatory Area was added to the 2008 NAFO Conservation and Enforcement Measures.⁴⁸ The provisions, *inter alia*, called for the mapping of sites where VMEs are known or likely to occur⁴⁹ and assessments of proposed bottom fishing activities in VME areas.⁵⁰ The Fisheries Commission is authorised to adopt a range of measures to prevent significant adverse impact on VMEs, including prohibiting or restricting bottom fishing activities and requiring changes in gear design and/or deployment.⁵¹ Contracting Parties are required to have their flagged vessels cease bottom fishing when VMEs are encountered and to report encounters.⁵² The terms of reference for an ad hoc working group of managers and scientists on VMEs were also included in the provisions.⁵³ The working group is to provide advice to the Fisheries Commission on VME protection and to develop operational procedures relating to encounters with VMEs.⁵⁴

⁴⁶ Id. at para. 83(d).

⁴⁷ NAFO, *Report of the Fisheries Commission Inter-Sessional Meeting*, 30 April–7 May 2008, Montreal, Quebec, Canada, NAFO/FC Doc. 08/04, Annex 22.

⁴⁸ NAFO, *Northwest Atlantic Fisheries Organization Conservation and Enforcement Measures*, available: <<http://www.nafo.int/fisheries/frames/regulations.html>> (retrieved 20 November 2008) [hereinafter NAFO C&E Measures], NAFO/FC Doc. 08/1 (Revised), Chapter Ibis.

⁴⁹ Id., Article 4(1).

⁵⁰ Id., Article 4(2)(3).

⁵¹ Id., Article 4(5).

⁵² Id., Article 5.

⁵³ Id., Article 4(4) and Annex 1 to Chapter Ibis.

⁵⁴ Id.

10.3.2. Cooperation at the EU Level

10.3.2.1. The Community's Competences on the External Level

Although Member States' vessels have, through the 1982 United Nations Convention on the Law of the Sea,⁵⁵ a right to fish on the high seas, high seas' fishing is extensively regulated by the CFP. Negotiations with third countries for access of Member States' vessels to the fishing zones of third states, and vice versa, are entirely within EC competence. The transfer of competence from the Member States to the EC is therefore not confined to Community vessels fishing in Community waters, but to wherever these vessels operate.⁵⁶ The EC has one of the largest fishing fleets in the world. A significant part of the EC fishing sector depends on access to non-EC resources, i.e., those which are shared with third states in the waters under their jurisdiction or international waters.

The process of transfer of external relations powers to the EC has been particularly marked in the fisheries sector. In the absence of specific provisions in the EC Treaty,⁵⁷ the general system of EC law on its external relations is relevant.⁵⁸ As an international organisation created by a treaty, the EC has legal personality.⁵⁹ This means that in its external relations the EC enjoys the

⁵⁵ *United Nations Convention on the Law of the Sea*, Montego Bay, 10 December 1982, 1833 *U.N.T.S.* 396 [hereinafter LOS Convention].

⁵⁶ Council Regulation (EC) No. 2371/2002 of 20 December 2002 on the Conservation and Sustainable Exploitation of Fisheries Resources under the Common Fisheries Policy, Article 1 (1), L 358 *Official Journal* 59–80 (31 December 2002) [hereinafter Regulation 2371/02]. This does not mean that there are no situations where Member States' fishing vessels can conduct high seas fishing for species or stocks for which neither the EC nor a regional fisheries organisation have yet prescribed catch restrictions.

⁵⁷ The EC Treaty does give explicit powers to the EC to act on the international level, but these relate only to restricted fields such as commercial agreements, association agreements with third states, and the environment. The only express treaty-making power relevant to fisheries is found in Article 133(3) of the EC Treaty (*ex* Article 113 of the EEC Treaty) on the common commercial policy, which indirectly authorises the EC to enter into treaties with third states relating to trade in fishery products. *Treaty establishing the European Economic Community*, 25 March 1957, 298 *U.N.T.S.* 11 [hereinafter EEC Treaty], Article 113; EC Treaty, n. 30 above, Article 133 (3).

⁵⁸ Joined Cases 3, 4 and 6/76, *Officier van Justitie v. Kramer*, 1976 ECR 1279, para. 16 [hereinafter Kramer Case].

⁵⁹ Article 281 (*ex* Article 210 of the EEC Treaty) of the EC Treaty lays down the EC's legal personality. The legal personality of an international organisation may also be inferred from the powers or purposes of the organisation and its practice, as confirmed by the International Court

capacity to enter into international commitments, i.e., to conclude treaties.⁶⁰ The EC's treaty-making powers are thus of two kinds: those expressly conferred on it by the EC Treaty and those that may be implied from its provisions.⁶¹

The most radical expansion of the EC's external fisheries competences has stemmed from the case law of the European Court of Justice (ECJ). Starting with Case 22/70, the ECJ developed the parallelism doctrine, which means that the EC's external treaty-making competence mirrors its internal legislative competence.⁶² In the *Kramer Case*, the ECJ pointed out that the competence to legislate on the internal level in fisheries matters flowed from Article 43 of the European Economic Community (EEC) Treaty (Article 37 of the EC Treaty). According to the parallelism doctrine, the EC thus enjoys treaty-making powers

of Justice (ICJ) in the *Reparation for Injuries Case. Reparation for Injuries Suffered in the Service of the United Nations*, I.C.J. Reports 1949, p. 174.

⁶⁰ The authority to do so in a specific field not only arises from an express conferment by the treaty, but may equally flow implicitly from other EC Treaty provisions, from an act of accession, and from any measure adopted within the framework of those provisions by the EC legislature.

⁶¹ *Kramer Case*, n. 58 above, paras 19–20.

⁶² This theory was further developed in Opinion 1/76:

[W]henver Community law has created for the institutions of the Community powers within its internal system for attaining a specific objective, the Community has authority to enter into the international commitments necessary for the attainment of that objective even in the absence of an express provision in that connection.

Opinion 1/76, *European Laying-up Fund for Inland Waterway Vessels*, 1977 ECR 741, 3rd Recital.

As regards the exclusiveness of this competence, the ECJ has observed that:

[e]ach time the Community, with a view to implementing a *common policy* [emphasis added] envisaged by the Treaty, adopts provisions laying down common rules, whatever form these may take, the Member States no longer have the right, acting individually or collectively, to undertake such obligations with third States which affect those rules.

Case 22/70, *Commission of the European Communities v. Council of the European Communities, European Agreement on Road Transport*, 1971 ECR 263, para. 17 [hereinafter ERTA Case].

Although previously considered unclear and controversial, the ECJ has clarified to some degree the exact scope of the implied powers, see: Opinion 2/91, *Convention N° 170 of the International Labour Organization Concerning Safety in the Use of Chemicals at Work*, 1993 ECR I-1061; Opinion 1/94, *Competence of the Community to Conclude International Agreements Concerning Services and the Protection of Intellectual Property - Article 228 (6) of the EC Treaty*, 1994 ECR I-5267; Opinion 2/92, *Competence of the Community or One of its Institutions to Participate in the Third Revised Decision of the OECD on National Treatment*, 1995 ECR 521.

in relation to fisheries.⁶³ On the basis of Articles 5 (Article 10 of the EC Treaty) and 116 EEC Treaty,⁶⁴ the ECJ held that:

Member States participating in the [North-East Atlantic Fisheries] Convention and in other similar agreements are now not only under a duty not to enter into any commitment within the framework of those conventions which could hinder the Community in carrying out the tasks entrusted to it by Article 102 of the Act of Accession, but also under a duty to proceed by common action within the fisheries Commission. It further follows therefore that as soon as the Community institutions have initiated the procedure for implementing the provisions of the said [article], and at the latest within the period laid down by [it], those institutions and the Member States will be under a duty to use all the political and legal means at their disposal in order to ensure the participation of the Community in the Convention and in other similar agreements.⁶⁵

In Case C-258/89,⁶⁶ it was argued that the EEC has no authority to independently adopt TACs and quotas with respect to international waters. In this case Spain accepted the result, i.e., the existence of external Community

⁶³ Documents Concerning the Accession to the European Communities of the Kingdom of Denmark, Ireland, the Kingdom of Norway and the United Kingdom of Great Britain and Northern Ireland, *Act Concerning the Conditions of Accession and the Adjustments to the Treaties*, Part 2 Adjustments to the Treaties, Article 102 [hereinafter 1972 Act of Accession]. Support was found in the 1972 *Act of Accession*, in Regulation 2141/70 and moreover in the very nature of things that:

the rule-making authority of the Community *ratione materiae* also extends – in so far as the Member States have similar authority under public international law – to fishing on the high seas. [I]t followed from the very duties and powers which EEC law had established and assigned to the EEC institutions on the internal level that the Community had authority to enter into international commitments for the conservation of the resources of the sea.

Kramer Case, n. 58 above, para. 30/33. Council Regulation (EEC) No. 2141/70 of 20 October 1970 on the Establishment of a Common Structural Policy for the Fishing Industry, L 236 *Official Journal* 1–4, Article 1 (27 October 1970) [hereinafter Regulation 2141/70].

⁶⁴ Under Article 116 of the EEC Treaty it is provided that:

[f]rom the end of the transitional period onwards, Member States shall, in respect of all matters of particular interest to the common market proceed within the framework of international organisations of an economic character only by common action.

EEC Treaty, n. 57 above, Article 116. This article was not withheld in the EC Treaty.

⁶⁵ Kramer Case, n. 58 above, paras 44–45.

⁶⁶ Case C-258/89, *Commission of the European Communities v. Kingdom of Spain*, 1991 ECR I-3977.

powers, but not the premise of the existence of internal Community powers. It was contended that independent authority to limit catches on the high seas could not be vested in the Community, since the Member States had no such powers that they could have transferred to the Community.⁶⁷ Advocate General Darmon set aside this argument by observing that the *de facto* freedom which states in practice grant to their fishermen by not laying down rules in respect of the conservation of stocks on the high seas did not in any way challenge the fundamental principle that the State is empowered, from the point of view of public international law, to impose any restrictions on catches on the high seas.⁶⁸ Spain also contended that a unilateral limitation by the Community of fishing activities on the high seas would be detrimental to its fishermen without being effective since certain non-Member States do not impede upon the freedom of their fishing fleets. The ECJ considered catch restrictions outside the Community zone essential in light of the actual CFP objectives. It found that consideration solely of the stock in Community waters would scarcely be effective and would undermine the objective of conserving the species concerned, since those species would not be subject to any quotas once they moved outside the Community zone.⁶⁹

10.3.2.2. EC Participation in Regional Fisheries Organisations

Due to the EC's exclusive external competence, it is generally not possible for the Member States to participate as separate members in RFMOs. Since the inception of the CFP, the EC has therefore gradually replaced its Member States in most RFMOs. The EC is a contracting party to eleven RFMOs and is in the process of joining others.⁷⁰

⁶⁷ Id., Opinion of Advocate General Darmon, paras 52–53.

⁶⁸ Id., para. 54.

⁶⁹ Id., Opinion of Advocate General Darmon, paras 12–13. In Case C-405/92, the ECJ took any doubt away by pointing out that:

[w]here the high seas are concerned, the Community has the same rule-making authority in matters within its jurisdiction as that conferred under international law on the State whose flag the vessel is flying or in which it is registered. It has in particular competence to adopt for vessels flying the flag of a Member State or registered in a Member State, measures for the conservation of fishery resources of the high seas.

Case C-405/92, *Etablissements Armand Mondiet SA v. Armement Islais SARL*, 1993 ECR I-6133, para. 12.

⁷⁰ The RFMOs to which the EC is a contracting party are: ICCAT, NAFO, NEAFC, the Indian Ocean Tuna Commission (IOTC), NASCO, the Commission for the Conservation of Antarctic Marine Living Resources (CCAMLR), the General Fisheries Council for the Mediterranean (GFCM), the Western and Central Atlantic Fishery Commission (WECAFC), Fishery

At present the RFMOs cover practically all the high seas. There are a wide variety of RFMOs. Some were set up under FAO while others were created independently. Some cover all the biological resources in a given zone; others focus on one stock or a group of stocks. The area covered by an RFMO may be limited to the high seas or to EEZ, or may include both.

Member States can retain or become members of RFMOs under exceptional circumstances. This is the case where other states are not favourably disposed towards EC membership such as the Inter-American Tropical Tuna Commission (IATTC),⁷¹ which was established by the 1949 Convention between the United States of America and the Republic of Costa Rica.⁷² The EC is a contracting party to the Agreement on the International Dolphin Conservation Program (AIDCP),⁷³ whose operation has been entrusted to the secretariat of the IATTC. In 1999, the EC signed the AIDCP.⁷⁴ Contrary to the AIDCP, accession of new members to the 1949 Convention (IATTC convention) is limited to states. However, an amendment process was launched in 1999 with the adoption of the so-called Guayaquil Protocol, so that regional economic integration organisations could become members. However, the entry into force of this protocol, proved to be long.⁷⁵ Therefore the EC agreed to allow Spain, the only EC Member State whose vessels operate in the area, to become a member of IATTC. Spain's accession was on a temporary basis and

Committee for the Eastern and Central Atlantic (CECAF), the South-East Atlantic Fisheries Organisation (SEAFO), and the Commission for the Conservation and Management of Highly Migratory Fish Stocks in the Western and Central Pacific Ocean (WFCPC). On the changing role of RFMOs and the Community participation therein, see generally Commission of European Communities, *Community Participation in Regional Fisheries Organisations*, Communication from the Commission, COM(1999) 613 (Brussels, 8 December 1999).

⁷¹ See more, Inter-American Tropical Tuna Commission (IATTC) website at <<http://www.iattc.org/>> (retrieved 14 December 2008).

⁷² *Convention for the Establishment of an Inter-American Tropical Tuna Commission*, Washington, 31 May 1949, 80 *U.N.T.S.* 3. This convention entered into force on 3 March 1950 [hereinafter 1949 Convention]. The Inter-American Tropical Tuna Commission (IATTC) has been given competence to regulate highly migratory fish stocks in the Eastern Pacific Ocean. IATTC membership comprises fourteen coastal and fishing states with interests in the region.

⁷³ *Agreement on the International Dolphin Conservation Program* (AIDCP), Washington, 15 May 1998, entry into force 15 February 1999, available: <[http://www.iattc.org/PDFFiles2/AIDCP-\(amended-Oct-2007\).pdf](http://www.iattc.org/PDFFiles2/AIDCP-(amended-Oct-2007).pdf)> (retrieved 22 April 2009).

⁷⁴ Council Decision 1999/337/EC of 26 April 1999 on the Signature by the European Community of the Agreement on the International Dolphin Conservation Programme, L 132 *Official Journal* 1–27 (27 May 1999); Council Decision 1999/386/EC of 7 June 1999 on the Provisional Application by the European Community of the Agreement on the International Dolphin Conservation Programme, L 147 *Official Journal* 23 (12 June 1999).

⁷⁵ At the time of writing, the protocol had been signed by just eight IATTC members, and ratified by only four among them. It will only enter into force once all IATTC parties have ratified it.

on account of “unique circumstances.” It was also without any precedent-creating authority and could not affect the EC’s exclusive competence in fisheries matters.⁷⁶ Even under this exceptional regime, it took until 2003 for Spain to receive the *nihil obstat* from all other members to accede to IATTC. IATTC adopted a new IATTC Convention text in June 2003 to replace the 1949 Convention, and the EC signed this so-called Antigua Convention on 22 May 2006.⁷⁷

It is also possible for both the EC and the Member States to be members of an RFMO when the issues addressed concern shared competences. For instance, the conservation and rational use of marine living resources in the seas surrounding Antarctica takes place within the framework of the Convention on the Conservation of Antarctic Marine Living Resources (CCAMLR)⁷⁸ and within the broader framework of the Antarctic Treaty System (ATS).⁷⁹ The main instruments within the ATS are the Antarctic Treaty,⁸⁰ the Convention for the Conservation of the Antarctic Seals,⁸¹ and CCAMLR. The EC is a member of the CCAMLR Commission, the Convention’s regulatory body, alongside several EC Member States. The EC and its Member States share competences due to its broad scope, but also because it is part of the ATS and therefore subject to the sensitive “agreement to disagree” on the sovereignty situation.⁸²

⁷⁶ Council Decision 1999/405/EC of 10 June 1999 Authorising the Kingdom of Spain to Accede to the Convention Establishing the Inter-American Tropical Tuna Commission on a Temporary Basis (IATTC), L 155 *Official Journal* 37–38, 5th Recital (22 June 1999). According to this Decision, Spain is required to denounce the 1949 Convention on the date of the Community’s accession thereto.

⁷⁷ The Antigua Convention (Convention for Cooperation in the Protection and Sustainable Development of the Marine and Coastal Environment of the Northeast Pacific, Antigua, Guatemala, 18 February 2002) will enter into force after the deposit of the seventh instrument of ratification by a current contracting party to IATTC. Council Decision 2006/539/EC of 22 May 2006 on the conclusion, on behalf of the European Community of the Convention for the Strengthening of the Inter-American Tropical Tuna Commission established by the 1949 Convention between the United States of America and the Republic of Costa Rica, L 224 *Official Journal* 22 (16 August 2006).

⁷⁸ *Convention on the Conservation of Antarctic Marine Living Resources*, Canberra, 20 May 1980, 19 *I.L.M.* 837 (1980). This convention entered into force on 7 April 1982.

⁷⁹ See Secretariat of the Antarctic Treaty website at <<http://www.ats.aq>> (retrieved 15 December 2008).

⁸⁰ *The Antarctic Treaty*, Washington, DC, 1 December 1959, 402 *U.N.T.S.* 71. This convention entered into force on 23 June 1961.

⁸¹ *Convention for the Conservation of Antarctic Seals*, London, 1 June 1972, 11 *I.L.M.* 251. This convention entered into force on 11 March 1978.

⁸² See E. J. Molenaar, “CCAMLR and Southern Ocean Fisheries,” *International Journal of Marine and Coastal and Law* 16 (2002): 465–499. At the 18th annual CCAMLR meeting in 1999, the division of competence between the EC and its Member States was implicitly challenged by means of a notification by the EC Commission to engage in an exploratory

A similar situation arises in connection with FAO fishery advisory bodies such as the Fishery Committee for the Eastern and Central Atlantic (CECAF),⁸³ the Western and Central Atlantic Fishery Commission (WECAFC),⁸⁴ and the General Fisheries Council for the Mediterranean (GFCM).⁸⁵ The rationale for the continued participation of EC Member States within these bodies predominantly appears to be due to the development and cooperation objectives of these bodies, which is an area in which the EC and its Member States share competence.⁸⁶ Scientific research in fisheries is another issue where competence is shared, hence the Member States continued membership of the International Council for the Exploration of the Sea (ICES) alongside the EC.

The Community has a sizeable fleet conducting bottom fishing activities in certain high seas areas not covered by a RFMO. Through Regulation 734/2008 on the protection of VMEs in the high seas from the adverse impacts of bottom fishing gears, the Community now protects vulnerable high seas marine ecosystems from the destructive effects of such activities.⁸⁷ Prior to this Regulation, the Community had only adopted measures to close bottom fishing in areas within Community waters and on the high seas within the framework of all existing RFMOs empowered to regulate bottom fisheries. This regulation seems to end the stalemate in the sensitive political debate regarding the scope of the Community's conservation competence.

fishery for Patagonian toothfish on behalf of a Portuguese vessel, even though Portugal was not a party to the CCAMLR Convention at that time. Strong objections during the meeting and afterwards, by both EC Member States and third states, compelled the EC Commission to inform the CCAMLR Executive Secretary that it intended to suspend the exploratory fishery for technical reasons. Council Regulation (EC) No. 601/2004 of 22 March 2004 Laying Down Certain Control Measures Applicable to Fishing Activities in the Area Covered by the Convention on the Conservation of Antarctic Marine Living Resources, L 97 *Official Journal* 16 (1 April 2004).

⁸³ Fishery Committee for the Eastern Central Atlantic, Instituted by FAO Council Resolution 1/48 (June 1967).

⁸⁴ Western Central Atlantic Fishery Commission. Established by FAO Council Resolution 4/61 (November 1973).

⁸⁵ *Agreement for the Establishment of a General Fisheries Council for the Mediterranean*, Rome, 24 September 1949, 126 *U.N.T.S.* 239. This agreement entered into force 20 February 1952.

⁸⁶ Molenaar, n. 82 above, p. 160.

⁸⁷ Council Regulation (EC) No. 734/2008, of 15 July 2008 on the Protection of Vulnerable Marine Ecosystems in the High Seas From the Adverse Impacts of Bottom Fishing Gears, L 201 *Official Journal* 8–13 (30 July 2008).

10.3.2.3. The EC and Negotiation of Conservation Agreements

The European Commission is responsible for the negotiation of fisheries agreements, whereas the Council, after consulting Parliament, concludes it.⁸⁸ Such an agreement is binding on the EC institutions as well as on its Member States.⁸⁹ The general practice is for the Commission to negotiate in line with negotiating mandates received from the Council. Before taking effect, the agreements must be adopted by the Council in the form of a regulation based on Articles 37 and 300 of the EC Treaty.⁹⁰

In areas outside EC competence, Member States retain their right of individual action and the right to enter into treaties. In situations where the EC has treaty-making competence but such competence is not exclusive, it is shared with the Member States.⁹¹ A classic example of this is to be found in the LOS Convention.⁹² For the purpose of the LOS Convention, conservation and management of fisheries resources were identified as exclusive EC powers, as were some environmental protection and other competences. The remaining matters were areas where legislative powers were retained by the Member

⁸⁸ EC Treaty, n. 30 above, Article 300 (1) & (3). This basic procedure varies both in terms of voting rules within the Council and the extent of parliamentary involvement according to the subject matter of the agreement and the procedures applicable to the adoption of internal measures. For an early account see P. M. Leopold, "The External Relations Power of the EEC in Theory and Practice," *International and Comparative Law Quarterly* 26 (1977): 54–80. Generally see M. Koskenniemi, *International Law Aspect of the European Union* (The Hague, Boston: Kluwer Law International, 1998); A. Dashwood, and C. Hillion, *The General Law of EC External Relations* (London: Sweet & Maxwell, 2000).

⁸⁹ EC Treaty, n. 30 above, Article 300 (1) & (7).

⁹⁰ Note that this requires prior consultation with the Parliament.

⁹¹ Competence will be shared according to Macleod et al., where that consequence flows from the EC Treaty article conferring power on the EC; 2) the EC has potential competence that could be exclusive when exercised but which has not yet been exercised; 3) the subject matter of the treaty falls partly within the field of the EC's exclusive treaty-making powers and partly outside; 4) the EC's treaty-making powers derive from internal EC rules which set minimum standards; and 5) in certain limited areas, such as intellectual property, where EC and Member State competence can co-exist without either displacing the other. I. MacLeod, I. D. Hendry, and S. Hyett, *The External Relations of the European Communities* (Oxford: Oxford University Press, 1996), pp. 56–63 & 63–67; R. R. Churchill, "The EC and its Role in Some Issues of International Fisheries Law" and E. Hey, "The Fisheries Provisions of the LOS Convention," both in E. Hey (ed.), *Developments in International Fisheries Law* (The Hague, Boston: Kluwer Law International, 1999), pp. 536–537.

⁹² A. W. Koers, "Participation of the European Economic Community in a New Law of the Sea Convention," *American Journal of International Law* 7 (1979): 426–443; K. R. Simmonds, "The European Economic Community and the New Law of the Sea," *Hague Recueil* 218, no. 1 (1989): 108–157; R. Simmonds, "The Community's Declaration Upon Signature of the UN Convention on the Law of the Sea," *Common Market Law Review* 23 (1986): 521–544.

States. It was thus not possible for the Community and the Member States to assume independently of each other, the obligations and rights enshrined in the LOS Convention. Therefore, the practice has arisen of concluding “mixed agreements” to which both the EC and its Member States are parties. They need the signature and ratification by each Member State, in addition to the formal conclusion by the EC. With respect to the negotiation, conclusion and implementation of such mixed agreements, the ECJ has prescribed an obligation on the EC and the Member States to ensure close cooperation between them.⁹³

Several issues other than conservation have caused some controversy in determining whether the EC has treaty-making powers, and if so, the exclusivity of these powers. The precise scope of the EC’s exclusive external competence has traditionally been a subject of dispute between the Commission’s broad interpretation viewpoint and the Council’s restrictive viewpoint, and it has been the task of the ECJ to clarify the matter.⁹⁴

An illustrative example of this tension in relation to the Community’s membership in fisheries organisations and some of the procedural difficulties which may arise are evident in Case C-25/94.⁹⁵ In this case, the Commission requested that the ECJ annul the decision⁹⁶ giving Member States the right to vote in the FAO concerning the adoption of the draft Agreement to Promote Compliance with International Conservation and Management Measures by

⁹³ Ruling 1/78 Delivered Pursuant to the Third Paragraph of Article 103 of the European Atomic Energy Commission Treaty, Draft Convention of the International Atomic Energy Agency on the Physical Protection of Nuclear Materials, Facilities and Transports, 1978 *E.C.R.* 2151, paras 34–36; Opinion 2/91, n. 62 above, para. 36; Opinion 1/94, n. 62 above, para. 108.

⁹⁴ Member States are reluctant to leave international relations to the exclusive competence of the Community. The development of subordination clauses and mixed agreements has been quite deliberately aimed in practice at stunting the use of exclusive Community competence. Mixed agreements need to be signed and ratified by all Member States, thus it normally takes several years before they can enter into force. In order to speed up the entry into force of the parts of mixed agreements that deal with pure EC competences, the EC often makes use of so-called interim agreements under EC competence. Interim agreements exclude, therefore, the articles under Member State competence. As a result, interim agreements can enter into force as soon as the Community has concluded the agreement. Interim agreements do not need to be signed and ratified by the individual Member States. See M. Cremona, “The Doctrine of Exclusivity and the Position of Mixed Agreements in the External Relations of the European Community,” *Oxford Journal of Legal Studies* 2 (1982): 393–428; D. O’Keeffe and H. G. Schermers, *Mixed Agreements* (The Hague: Deventer, Kluwer, 1983), p. ix; A. Rosas, “The EU and Mixed Agreements,” in Dashwood & Hillion, n. 88 above, pp. 200–220.

⁹⁵ Case C-25/94, *Commission of the European Communities v. Council of the European Union*, 1996 ECR I-1469.

⁹⁶ Decision of the Fisheries Council of 22 November 1993.

Fishing Vessels on the High Seas.⁹⁷ The FAO provides for a system of alternative exercise of the rights attached to membership between the EC and its Member States. This allows the Commission to speak and vote where an agenda item is within exclusive competence of the Community. If an agenda item contains matters containing elements both of national and Community competence, the Commission can only represent the EC on the issues that fall within its exclusive competence. Registration of vessels is a Member State competence. During negotiations on the draft agreement, the clauses relating to registration and flagging were removed. Subsequently, the Commission is considered having the right to vote. The ECJ pointed out that:

[w]here it is apparent that the subject-matter of an agreement or convention falls partly within the competence of the Community and partly within that of its Member States, it is essential to ensure close cooperation between the Member States and the Community institutions, both in the process of negotiation and conclusion and in the fulfilment of the commitments entered into. That obligation to cooperate flows from the requirement of unity in the international representation of the Community.⁹⁸

In addition, “the Community institutions and the Member States must take all necessary steps to ensure the best possible co-operation in that regard.”⁹⁹ The ECJ concluded that the Council was wrong in maintaining that the draft agreement concerned an issue not within the exclusive competence of the Community. Accordingly, it was for the Commission to vote for the adoption of the draft agreement.¹⁰⁰

⁹⁷ *Agreement to Promote Compliance with International Conservation and Management Measures by Fishing Vessels on the High Seas*, 24 November 1993, *U.N.T.S.*, 2221 (2003): 91–129, entry into force 24 April 2003, available: <www.fao.org/legal/treaties/012t-e.htm> (retrieved 20 November 2008) [hereinafter 1993 FAO Compliance Agreement].

⁹⁸ Case C-25/94, n. 95 above, para. 46; Ruling Ruling 1/78, n. 93 above, paras 34–36; Opinion 2/91, n. 62 above, para. 36; Opinion 1/94, n. 62 above, para. 108.

⁹⁹ Opinion 2/91, n. 62 above, para. 38.

¹⁰⁰ Case C-25/94, n. 95 above, para. 50.

10.4. Challenges

10.4.1. Integrating the Environmental Dimension into the CFP

As discussed above, EC internal competences premises action on the external level. Thus, the competence of the EC to act in the international arena is a question of Community law rather than of international law. During the 2002 CFP reform there was a general consensus that the CFP was failing to achieve its objectives of conserving fish stocks, protecting the marine environment, ensuring the economic viability of European fleets, and providing good quality food to consumers. A 1999 survey in the North East Atlantic confirmed that 40 out of the 60 main commercial fish stocks were outside safe biological limits. The most severely depleted species was cod. The European Commission's 2001 Green Book painted a very bleak picture of EC fish stocks.¹⁰¹ The Commission then considered the possibility of reviewing the whole of the CFP framework. The 2002 CFP reform set broader objectives and resulted in several significant changes. Firstly, noting that the CFP traditionally dealt with environmental matters in a reactive way rather than integrating environmental concerns into all management considerations in a proactive matter,¹⁰² the Commission concluded that the CFP needed to equip itself with the necessary tools of proactive management of environmental concerns. Initially, the fundamental element of environmental integration in fisheries was identified as the change in attitude of management through the adoption of an *ecosystem-based approach* to fisheries management. Secondly, the *environmental policy principles* needed to be applied to fisheries management. With the exception of the precautionary principle in the management of single fish stocks, limited work had been carried out to ascertain their implications to fisheries management.¹⁰³

¹⁰¹ Commission of the European Communities, *Green Paper on the Future of the Common Fisheries Policy, Volume I*, Communication from the Commission, COM(2001) 135 (Brussels, 20 March 2001).

¹⁰² Commission of the European Communities, *Elements of a Strategy for the Integration of Environmental Protection Requirements into the Common Fisheries Policy 5*, Communication from the Commission, COM(2001) 143 final (Brussels, 16 March 2001) [hereinafter COM(2001) 143 final].

¹⁰³ Commission of the European Communities, *Partnership for Integration, A strategy for Integrating Environment into European Union Policies*, Communication from the Commission, COM(1998) 333 (Brussels, June 1998); COM(2001) 143 final, n. 102 above, pp. 21–22. On 21 June 1998, the Council endorsed a Community Strategy on Biological Diversity. This strategy called for the generation of sector-based action plans. With regard to the fisheries, the objectives were twofold: firstly, to conserve commercially fished species of marine fish in order

The new Regulation 2371/02 provides the legal basis to adopt measures to reduce negative impacts on the environment. It is explicitly stated that the CFP must provide for coherent measures concerning the “limitation of the environmental impact of fishing.”¹⁰⁴ To this end, it sees the *precautionary approach* when taking protection and conservation measures as an appropriate tool.¹⁰⁵ The gradual implementation of an *ecosystem-based approach* to fisheries management is further envisaged.¹⁰⁶ Sustainable exploitation is explicitly linked with minimising the effects on marine ecosystems.¹⁰⁷ However, the Regulation, as opposed to the precautionary approach, does not provide a definition of the ecosystem approach.

The conservation measures to be adopted in the pursuit of sustainable fishing activities may include measures for each stock or group of stocks aimed at limiting fishing mortality and the environmental impacts of fishing activities. However, the Regulation is specific about technical measures, stating that they must be adopted to reduce the impact of fishing activities on marine ecosystems and non-target species.¹⁰⁸ Focusing on conservation, the recent trend is for a multi-annual approach to management and recovery plans. For stocks at or within safe biological limits, multi-annual management plans will be adopted to ensure the objective of sustainable exploitation. For stocks outside safe biological limits,¹⁰⁹ the adoption of multi-annual recovery plans is an absolute

to achieve sustainability of stocks, fishing opportunities and food supply and, secondly, to reduce the impact of fishing operations on non-target species and marine habitats. It therefore envisaged the application of the precautionary approach to the setting of TACs. Commission of the European Communities, *A European Community Biodiversity Strategy*, Communication from the Commission, COM(1998) 42 (Brussels, 4 February 1998); Commission of the European Communities, *Application of the Precautionary Principle and Multiannual Arrangements for Setting TACs*, Communication from the Commission, COM(2000) 803 final (Brussels, 1 December 2000).

¹⁰⁴ Regulation 2371/02, n. 56 above, Article 1 (2) (b).

¹⁰⁵ *Id.*

¹⁰⁶ *Id.*, Article 2(1), which reads: “For this purpose, the Community shall apply the precautionary approach in taking measures designed to protect and conserve living aquatic resources, to provide for their sustainable exploitation and to minimise the impact of fishing activities on marine eco-systems. It shall aim at a progressive implementation of an eco-system based approach to fisheries management.”

¹⁰⁷ Article 3(e) reads “sustainable exploitation means the exploitation of a stock in such a way that the future exploitation of the stock will not be prejudiced and that it does not have a negative impact on the marine eco-systems.”

¹⁰⁸ *Id.*, Article 4(g)(iv).

¹⁰⁹ According to Article 3(1) of Regulation 2371/02, “safe biological limits” means indicators of the state of a stock or of its exploitation inside which there is a low risk of transgressing certain limit reference points.

priority.¹¹⁰ During the years following the CFP reform, the Council commenced implementation of multi-annual plans by adopting three recovery plans for stocks with a status “outside safe biological limits.”¹¹¹ Recovery plans targeting species outside Community waters have also been adopted, e.g., the Greenland halibut recovery plan, managed by NAFO.¹¹²

10.4.2. Putting the Precautionary Approach into Practice

10.4.2.1. NAFO and the Precautionary Approach

If measured by the number of fish stocks subject to a directed fishing moratorium because of their depleted status, NAFO’s record of precautionary fisheries management can only be described as poor. For 2008, eight groundfish stocks were subject to a directed fishing ban. Those stocks included: 3L, 3M and 3N cod; 3LN redfish; 3LNO and 3M American plaice; and 3L and 3NO witch flounder.¹¹³

NAFO has moved to formally adopt the precautionary approach on two main fronts. At the 2004 annual meeting, the Fisheries Commission adopted the

¹¹⁰ Id., Article 5(2).

¹¹¹ Council Regulation (EC) No. 423/2004 of 26 February 2004 Establishing Measures for the Recovery of Cod Stocks, L 70 *Official Journal* 8–11 (9 March 2004); Council Regulation (EC) No. 811/2004 of 21 April 2004 Establishing Measures for the Recovery of the Northern Hake Stock, L 150 *Official Journal* 1–11 (30 April 2004); Council Regulation (EC) No. 2166/05 of 20 December 2005 Establishing Measures for the Recovery of the Southern Hake and Norway lobster Stocks in the Cantabrian Sea and Western Iberian Peninsula and Amending Regulation (EC) No. 850/98 for the Conservation of Fishery Resources Through Technical Measures for the Protection of Juveniles of Marine Organisms, L 345 *Official Journal* 5–10 (28 December 2005).

¹¹² Council Regulation (EC) No. 2115/2005 of 20 December 2005 Establishing a Recovery Plan for Greenland Halibut in the Framework of the Northwest Atlantic Fisheries Organisation, L 340 *Official Journal* 3–6 (23 December 2005). Council Regulation (EC) No. 643/2007 of 11 June 2007 amending Regulation (EC) No. 41/2007 as Concerns the Recovery Plan for Bluefin Tuna recommended by the International Commission for the Conservation of Atlantic Tunas, L 151 *Official Journal* 1–16 (13 June 2007). See also Council Regulation (EC) No. 1559/2007 of 17 December 2007 Establishing a Multi-annual Recovery Plan for Bluefin Tuna in the Eastern Atlantic and Mediterranean and Amending Regulation (EC) No. 520/2007, L 340 *Official Journal* 8–24 (22 December 2007).

¹¹³ NAFO C&E Measures, n. 48 above, NAFO/FC Doc. 08/01 (Revised), Annex I.A, Annual Quota Table. Bans on fishing capelin and shrimp in NAFO area 2NO were also in force.

NAFO Precautionary Approach Framework.¹¹⁴ The Framework provides guidance for setting fishing mortality and stock biomass reference points¹¹⁵ and suggests management strategies according to five zones (safe, overfishing, cautionary, danger, and collapse).¹¹⁶ In September 2007, NAFO Contracting Parties agreed to give the precautionary approach a legal foundation through an amended Convention.¹¹⁷ Article III of the modernised Convention requires Contracting Parties individually and collectively to apply the precautionary approach in accordance with Article 6 of the 1995 UN Fish Stocks Agreement.¹¹⁸

However, practical implementation of the precautionary approach has been thwarted in at least four main ways. Firstly, the Scientific Council has not been able to determine reference points for many stocks partly due to limited scientific data as well as stocks whose reference points have not been determined. These stocks include white hake in Divisions 3NOPs,¹¹⁹ capelin in Divisions 3NO,¹²⁰ redfish in Divisions 3LN and in Divisions 3O,¹²¹ thorny skate in Divisions 3LNO,¹²² and witch founder in Divisions 3NO.¹²³

Secondly, there has been the all too common political over-riding of scientific advice. For example, at the 29th meeting of the Fisheries Commission in September 2007, the Commission set various TACs for 2008 above the recommended scientific advice. A few instances are as follows:

- Redfish in Division 3M, TAC of 8,500 tonnes (above the Scientific Council's advice of not exceeding 5,000 tonnes)
- White hake in Divisions 3NO, TAC of 8,500 tonnes (even though the

¹¹⁴ NAFO/FC, *NAFO Precautionary Approach Framework*, Doc. 004/4/18, available: <<http://archive.nafo.int/open/key-documents/fcdoc04-18.pdf>> (retrieved 20 November 2008). The Fisheries Commission also agreed to initially test implementation of the Precautionary Framework on two stocks (yellowtail flounder in Divisions 3LNO and shrimp in 3M) starting in 2005. See NAFO, *Report of the Fisheries Commission Meeting, 26th Annual Meeting*, September 13–17, 2004, Dartmouth, Nova Scotia, FC Doc. 04/17.

¹¹⁵ The Framework discusses setting fishing mortality limit and buffer reference points, as well as stock biomass limit and buffer reference points.

¹¹⁶ For example, in the safe zone, managers may choose to establish TACs based on socio-economic considerations; for the collapse zone, fishing mortality should be set as close to zero as possible.

¹¹⁷ Amendment, n. 41 above.

¹¹⁸ *Id.*

¹¹⁹ See NAFO, *Report of Scientific Council Meeting, 7–21 June 2007*, SC 7-21, p. 23.

¹²⁰ *Id.*, p. 24.

¹²¹ *Id.*, pp. 26, 28.

¹²² See Scientific Council Meeting, 1–15 June 2006, SC 1-15, p. 19.

¹²³ *Id.*, p. 15.

- Scientific Council advised such a level was “unrealistic”)
- Thorny skate in Divisions 3LNO, TAC of 13,500 tonnes (even though the Scientific Council advised thorny skate in Divisions 3LNOPs should be managed as a unit and the TAC should not exceed 11,000 tonnes)¹²⁴

At the 30th annual meeting of the Fisheries Commission, further divergencies from the following of scientific advice for 2009 stood out. The Fisheries Commission TACs for thorny skate, white hake, and redfish in 3M and shrimp in Divisions 3LNO were not consistent with scientific advice.¹²⁵

Even though Greenland halibut in Subarea 2 and Divisions 3KLMNO has been subject to a fifteen year rebuilding plan, the Fisheries Commission has also set quotas higher than recommended by the Scientific Council. For example, for 2009, the Council recommended a TAC of 10,471 tonnes but the Commission adopted a TAC of 16,000 tonnes.¹²⁶ The quota was set despite the Scientific Council’s documentation that catches from Greenland halibut in 2004–2007 exceeded the rebuilding plan TACs by 27, 22, 27 and 42 percent respectively.¹²⁷

The preparedness of Contracting Parties to set substantial quotas even when scientific information is lacking represents a third practical constraint on precautionary, as exemplified by management of the redfish stock in Division 3O. Even though the Scientific Council acknowledged that stock dynamics and recruitment patterns are poorly understood and TAC advice was impossible,¹²⁸ the Fisheries Commission established TACs of 20,000 tonnes for 2008 and 2009.¹²⁹

A fourth precautionary pitfall has been the considerable bycatch occurring even for the commercial fish stocks subject to moratoria. A 2005 report estimated especially high bycatch removals for four stocks closed to

¹²⁴ NAFO, *Meeting Proceedings of the General Council and Fisheries Commission*, September 2007 – August 2008, pp. 82–87.

¹²⁵ NAFO, *Report of the Fisheries Commission, Thirtieth Annual Meeting*, 22–26 September 2008, Vigo, Spain, NAFO/FC Doc. 08/22, pp. 4–8 and Annex 7. Inconsistencies were a thorny skate TAC of 13,500 tonnes (6,000 tonnes scientific advice), white hake TAC of 8,500 tonnes (scientific advice that such a TAC is not sustainable), redfish in 3M TAC of 8,500 tonnes (scientific advice that TAC should not to exceed 5,000 tonnes), and shrimp in 3LN TAC of 30,000 tonnes (25,000 tonnes scientific advice) [hereinafter NAFO Thirtieth Annual Meeting].

¹²⁶ *Id.*, pp. 4, 8.

¹²⁷ NAFO, *Report of the Scientific Council Meeting*, 5-19 June 2008, NAFO SCS Doc. 08/19, p. 5.

¹²⁸ NAFO, n. 119 above, p. 119.

¹²⁹ NAFO C&E Measures, n. 48 above, Annex I.A, Annual Quota Table; NAFO Thirtieth Annual Meeting, n. 125 above, p. 8.

directed fishing.¹³⁰ Bycatch removals, expressed as a percentage of current total biomass, were thought to be 70–89 percent for 3NO cod, 15–27 percent for 3NLO American plaice, close to 30 percent for 2J 3KL witch founder, and 8.6–18.9 percent for 3NO witch flounder.¹³¹ Although bycatch restrictions have been imposed for fish stocks under moratoria,¹³² the efficacy of these restrictions remains to be seen.

10.4.2.2. NEAFC and the Precautionary Approach

The “New” NEAFC Convention also states that the NEAFC Commission is to ensure that Recommendations are based on the best scientific evidence available and that the precautionary approach is applied.¹³³ It is not always clear, however, to what extent the precautionary approach has been translated in NEAFC management measures. The memorandum of understanding between NEAFC and OSPAR acknowledges and provides for the development of a common understanding of the application of the precautionary approach principle.¹³⁴

The TAC adopted in 2009 for mackerel was consistent with ICES advice. In addition, the Contracting Parties agreed to implement a long-term management plan for the mackerel stock in the North East Atlantic for 2010 and subsequent years, which is consistent with the precautionary approach.¹³⁵ The 2009 TAC for Norwegian (Atlanto-Scandian) herring was set at 1,643,000 tonnes and also consistent with ICES advice. A long-term management plan was also agreed to.¹³⁶

¹³⁰ A Rosenberg, M. Mooney-Seus, and C. Ninnis, *Bycatch on the High Seas: A Review of the Effectiveness of the Northwest Atlantic Fisheries Organization* (Toronto: WWF-Canada, 2005).

¹³¹ *Id.*, p. 131.

¹³² Article 11 of the NAFO’s C&E Measures, n. 48 above, establishes a bycatch retained on board limit of 1,250 kg or 5% of the total catch (whichever is greater). If a vessel exceeds the 5% bycatch in one haul, the vessel must move a minimum of 10 nm from any position of the previous tow. If after moving, the next haul still exceeds the bycatch limit, the vessel must leave the Division and not return for at least 60 hours.

¹³³ “New” NEAFC Convention, n. 42 above, Article 4 (2) a & b.

¹³⁴ Memorandum of Understanding between the North East Atlantic Fisheries Commission (NEAFC) and the OSPAR Commission, available: <http://www.neafc.org/about/docs/opsar_mou.pdf> (retrieved 12 December 2008) [hereinafter NEAFC/OSPAR MoU].

¹³⁵ *Agreed Record of Conclusions of fisheries Consultations between the Faroe Islands, the European Community, Norway on the management of Mackerel in the North-East Atlantic in 2009*, available: <http://www.neafc.org/system/files/mackerel_2009_agreedrecord_signed.pdf> (retrieved 20 November 2008)

¹³⁶ *Agreed Record of Conclusions of fisheries consultations on the management of the Norwegian Spring Spawning (Atlanto-Scandian) Herring Stock in the North-East Atlantic for*

Implementing the precautionary approach seems especially problematic in relation to three fish stocks. For 2009 the TAC for blue whiting was set at 590,000 tonnes instead of the precautionary limit of 384,000 tonnes recommended by ICES.¹³⁷ For pelagic redfish, no precautionary reference points have been set and no consensus on stock structure exists, yet substantial fishing continues. ICES considers that the current landings of 64,000 tonnes is far above its advice of 20,000 tonnes. ICES advises that a management plan be developed and implemented which takes into account the uncertainties in science and the properties of the fisheries. Conditions set for directed fishing activities for orange roughy, namely restricting catches of any Contracting Party to 150 tonnes and ensuring vessels operate with a historical fishing record, are deemed precautionary but without a clear rationale.¹³⁸

NEAFC was criticised at its 2008 meeting for having a different approach to the impact assessments for exploratory and existing fisheries. For new fisheries “particular care shall be taken in the evaluation of risks of the significant adverse impact on VMEs, in line with the precautionary approach.” For existing fisheries a more lax approach seems to be suggested as there is no mention of the precautionary approach but instead the notification that assessments should take account of the history of bottom fishing in the areas proposed.¹³⁹

2009, available: <http://www.neafc.org/system/files/herring_2009.pdf> (retrieved 20 November 2008) [hereinafter 2009 agreement on the allocation of herring].

¹³⁷ *Agreed Record of Conclusions of fisheries consultations between the European Community, the Faroe Islands, Norway on the management of blue whiting in the North-East Atlantic in 2009*, available: <http://www.neafc.org/system/files/bluewhiting_2009.pdf> (retrieved 20 November 2008) [hereinafter 2009 agreement on the allocation of blue whiting].

¹³⁸ In ascertaining the “robustness” of the process of multilateral cooperation in North East Atlantic fisheries, the NEAFC Performance Report Document, n. 43 above, noted at page 33 that there were no long-term objectives or plans in place to detect whether the current “30% reduction in TAC in relation to the orange roughy is sufficiently precautionary or not.” Even though Annex 1 of the NEAFC Performance Report lists the orange roughy as one of the species for which NEAFC may request recurring scientific advice from the ICES, there are no long-term precautionary plans in place.

¹³⁹ NEAFC, NEAFC Recommendation XVI: 2008, Recommendation By The North-East Atlantic Fisheries Commission In Accordance With Article 5 Of The Convention On Future Multilateral Cooperation In North-East Atlantic Fisheries At Its Extraordinary Meeting On 1-2 July 2008 To Adopt The Following Recommendation On Bottom Fishing Activities In The NEAFC Regulatory Area, available <http://www.neafc.org/system/files/%252Fhome/neafc/drupal2_files/16-rec_bottom_fishing_em_2008.pdf> (retrieved 20 November 2008).

10.4.3. Implementing the Ecosystem Approach

10.4.3.1. NAFO and the Ecosystem Approach

While a considerable focus of NAFO continues to be on single stock assessments and establishing TACs and other controls for fish stocks not under a moratorium,¹⁴⁰ NAFO has been trying to alter its course towards an ecosystem approach in multiple ways. Amendments to the NAFO Convention in September 2007 committed parties to apply an ecosystem approach to fisheries management in the Northwest Atlantic,¹⁴¹ with established safeguarding of marine ecosystems as an objective¹⁴² and the preservation of marine biological diversity as a key principle.¹⁴³

Various institutional mechanisms have been forged to advance marine ecosystem research and understanding. In the early 1990s, the Scientific Council established a Standing Committee on Fisheries Environment (STACFEN). STACFEN has published numerous studies on how biological resources are influenced by environmental factors, including climate change.¹⁴⁴ The Scientific Council has established a Working Group on Ecosystem Approach to Fisheries Management which first met in May 2008 and has been tasked with identifying VMEs, furthering research on regional ecosystems in the NAFO Convention Area, and developing ecosystem indicators.¹⁴⁵ A Joint NAFO-ICES Joint Working Group on Deep Water Ecology has been formed to increase sharing of information and cooperative research on deep water ecosystems. A March 2008 meeting of the Working Group advanced understanding of coral species' distributions throughout the North Atlantic.¹⁴⁶

NAFO has progressed in protecting some vulnerable marine ecosystems. In 2006, the Fisheries Commission agreed to close four seamounts to demersal fishing gears in the Regulatory Area, namely: Orphan Knoll, Corner

¹⁴⁰ For a good overview of NAFO's regulatory approaches and constraints, see A. A. Rosenberg, R. J. Trumble, J. M. Harrington, O. Martens, and M. Mooney-Seus, *High Seas Reform: Actions to Reduce Bycatch and Implement Ecosystem-Based Management for the Northwest Atlantic Fisheries Organization* (Toronto: WWF-Canada, 2006).

¹⁴¹ Amendment, n. 41 above, Preamble.

¹⁴² *Id.*, Article II.

¹⁴³ *Id.*, Article III (e).

¹⁴⁴ See NAFO Science, "Ecosystem Considerations," available: <http://www.nafo.int/science/ecosystem_html> (retrieved 23 November 2008).

¹⁴⁵ See NAFO Working Group on Ecosystem Approach to Fisheries Management, available: <<http://www.nafo.int/science/ecostem/eawg/wg-ea.html>> (retrieved 20 November 2008).

¹⁴⁶ International Council for the Exploration of the Sea (ICES), *Report of the ICES-NAFO Joint Working Group on Deep Water Ecology (WG DEG)*, 10–14 March 2008, Copenhagen, Denmark, ICES CM 2008/Acom: 45 [hereinafter WGDEG Report].

Seamounts, Newfoundland Seamounts, and New England Seamounts.¹⁴⁷ In 2007, the Commission agreed to establish a Coral Protection Zone, closing all fishing activity involving bottom contact gear for a large area of Division 3O from 1 January 2008 to 31 December 2012.¹⁴⁸

Further advances towards protecting VMEs were made in 2008. The Scientific Council identified on a broad scale basis eight additional candidate VMEs,¹⁴⁹ and a preliminary map of the bottom trawl fishing “footprint” for 2003–2007 was produced.¹⁵⁰ An Ad Hoc Working Group of Fishing Managers and Scientists on VMEs was established to further discussions and recommendations for protecting VMEs.¹⁵¹ At its annual meeting in September 2008, the Fisheries Commission agreed to extend protection from demersal fishing gears to the Fogo Seamounts as of 1 January 2009, and to adopt an Interim Exploratory Fishery Protocol and an Interim VME Encounter Protocol.¹⁵²

Even though NAFO has been taking numerous steps towards an ecosystem approach with its various governance implications,¹⁵³ the reformatory swim is far from over with four challenging issues becoming apparent. These challenges include fully fleshing out and ensuring VME protection, casting the management net to cover a broader range of species, bolstering the conservation of sharks and sea turtles, and furthering marine ecosystem research.¹⁵⁴

¹⁴⁷ NAFO, *Report of the Fisheries Commission, 28th Annual Meeting*, 18–22 September 2006, Dartmouth, Nova Scotia, Canada, NAFO/FC Doc. 06/14 at 9. Pursuant to Article 14(5) of NAFO’s E&C Measures, n. 48 above, the closure is to be effective from 1 January 2007 until 31 December 2010.

¹⁴⁸ NAFO, *Report of the Fisheries Commission, 29th Annual Meeting*, 24 September 2007, Lisbon, Portugal. NAFO FC Doc. 07/24 at 11 [hereinafter NAFO Twenty-ninth Annual Meeting]. The Protection Zone has been given force through Article 15 of NAFO E&C Measures. These measures will be discussed later in this study.

¹⁴⁹ Report of the Scientific Council Meeting, 5–19 June 2008, NAFO SCS Doc. 08/19, pp. 38–41.

¹⁵⁰ *Id.*, p. 34.

¹⁵¹ See Report of the AD Hoc Working Group of Fishing Managers and Scientists on Vulnerable Marine Ecosystems (WG FMS), 8–12 September 2008, Montreal, Canada, NAFO/FC Doc. 08/8.

¹⁵² NAFO Thirtieth Annual Meeting, n. 125 above, p. 44.

¹⁵³ For a summary of the vast array of measures flowing from the ecosystems approach, see S. M. Garcia, A. Zerbi, C. Aliaume, T. Do Chi, and G. Lasserre, “The Ecosystem Approach to Fisheries: Issues, Terminology, Principles, Institutional Foundations, Implementation and Outlook,” FAO Fisheries Technical Paper No. 443 (Rome: FAO, 2003).

¹⁵⁴ These four central challenges, of course, are not the only limitations in achieving implementation of the ecosystem approach. Other challenges include, lack of compliance with

Fully Fleshing Out and Ensuring VME Protection under NAFO

Further designation and protection of VMEs in the NAFO Conservation Area remains a central challenge for further implementation of the ecosystem approach. At the September 2008 meeting of the Fisheries Commission, the Commission considered eight potential VME candidates but decided for most sites additional high level habitat mapping would be required to identify VME boundaries with greater certainty.¹⁵⁵ The Commission requested the Scientific Council to refine its information on coral concentrations as soon as possible in 2008 so as to provide information on sponge concentrations by 30 June 2009 and to provide information on corals and sponges in canyons as soon as practicable or at least provide a progress report by 30 June 2009.¹⁵⁶ Only the Fogo Seamounts were added to the closed area list. Whether Canada and Greenland should move to protect VMEs in the Baffin Bay/Davis Strait region remains to be seen.¹⁵⁷

Non-governmental organisations (NGOs) at the September 2008 meeting were quick to criticise the lack of agreement protecting all the candidate VME areas. The EU, in particular, was accused of backtracking on deep-sea protection.¹⁵⁸ The failure to fully implement the 2006 UN General Assembly Resolution on Sustainable Fisheries was lamented, specifically the need to implement protective measures for identified VMEs by 31 December 2008.¹⁵⁹ NGOs expressed serious concern over the apparent view of some NAFO Contracting Parties that historically fished areas should not be closed as ecosystem damage had already occurred.¹⁶⁰

The Exploratory Protocol for New Fishing Areas, agreed to by the Fisheries Commission in September 2008, also addressed VMEs, but its effectiveness in practice remains to be seen. The Protocol requires Contracting Parties to submit harvesting, mitigation, catch monitoring, and data collection plans to the Executive Secretary before allowing bottom fishing activities in new areas to commence. A mitigation plan must include measures to prevent significant adverse impact to VMEs that may be encountered. A catch

management measures, fisheries on juveniles, and illegal, unregulated and unreported (IUU) fishing. See Rosenberg et al., n. 130 above.

¹⁵⁵ NAFO Thirtieth Annual Meeting, n. 125 above, p. 6.

¹⁵⁶ *Id.*, pp. 9–10 and Annex 13.

¹⁵⁷ See WGDEG Report, n. 146 above, which documents coral distributions in the region.

¹⁵⁸ See The Deep Sea Conservation Coalition, *European Union Backtracks on Deep-Sea Protection* (10 October 2008), available: <http://www.save_the_highseas.org/display.cfm?ID=179> (retrieved 20 November 2008).

¹⁵⁹ *Id.*

¹⁶⁰ *Id.*

monitoring plan must include recording/reporting of all species caught, 100 percent satellite tracking, and 100 percent observer coverage, and a data collection plan is required for identifying VMEs/species. No prior impact assessment process exists, but the Executive Secretary is required to forward the planning information to all Contracting Parties and the Scientific Council. Exploratory fishing trip reports must be submitted by parties to the NAFO Scientific Council.

The adequacy of the Encounter Protocol in protecting VMEs is also questionable. The Protocol will require fishing vessels encountering indicator species of corals and sponges to “move away” at least two nm if a catch per set brings up more than 100 kg of live coral and/or 1,000 kg of live sponges.¹⁶¹ Such high catch thresholds have been criticised,¹⁶² but the Protocol notes the provisional basis of these thresholds and the possibility for adjustment in light of recent experience.¹⁶³

Casting the Management Net to Cover a Broader Range of Species

A further ecosystems approach challenge is to extend protective management measures to a broader range of species, especially marine species at risk. NAFO currently manages only 11 of some 25 commercial species.¹⁶⁴

The existing shortcoming is exemplified by the spotted wolffish and northern wolffish stocks. While Canada has listed these two species as threatened under its *Species at Risk Act*¹⁶⁵ and has required within the EEZ allowable harm permits for takings and live releases if possible,¹⁶⁶ the two wolffish species remain unprotected in the NAFO Regulatory Area outside Canadian fisheries jurisdiction.

¹⁶¹ NAFO Thirtieth Annual Meeting, n. 125 above, Annex 13.4, para. 3.

¹⁶² See Deep Sea Conservation Coalition, n. 158 above.

¹⁶³ NAFO Thirtieth Annual Meeting, n. 125 above, Annex 13.4, para. 3.

¹⁶⁴ NAFO, “NAFO Fishery,” available: <<http://www.hafo.int/fisheries/fishery-.html>> (retrieved 20 November 2008).

¹⁶⁵ *Species at Risk Act*, S.C. 2002, c. 29.

¹⁶⁶ See D. L. VanderZwaag, and J. Hutchings, “Canada’s Marine Species at Risk: Law and Science at the Helm, but a Sea of Uncertainties,” *Ocean Development & International Law* 36 (2005): 219–259, p. 229. Also see D. Kulka, C. Hood and J. Huntington, “Recovery Strategy for Northern Wolffish (*Anarhichas denticulatus*) and Spotted Wolffish (*Anarhichas minor*), and Management Plan for Atlantic Wolffish (*Anarhichas lupus*) in Canada” (St. John’s: DFO Newfoundland and Labrador Region, 2007), pp. 70–71. Following publication of the recovery strategy, conservation conditions have been included within fisheries licenses. David Millar, Regional Manager, Species at Risk, Fisheries and Oceans Canada, pers. comm. (23 April 2009).

Bolstering the Conservation of Sharks and Sea Turtles

The management of sharks and sea turtles, two relatively high profile marine species, might be described as rather secondary to the NAFO agenda. NAFO's C&E Measures devotes just one article (Article 16) to the conservation of sharks with four main commitments: Parties are required to report data for all catches of sharks¹⁶⁷; Parties are required to impose a shark finning ban whereby their vessels must not have onboard shark fins totalling more than 5 percent of the weight of sharks onboard up to the first point of landing¹⁶⁸; Parties are urged to encourage the live release of sharks caught in non-directed fisheries¹⁶⁹; and Parties are also encouraged to undertake research into non-selective fishing gears and the identification of shark nursery areas.¹⁷⁰

The conservation of sea turtles is addressed through a 2006 resolution of the Fisheries Commission aimed at reducing sea turtle mortality in NAFO fishing operations.¹⁷¹ The resolution urges Parties to enhance the implementation of existing turtle mitigation measures and to provide sea turtle catch and release data to the NAFO Secretariat.¹⁷²

Various management challenges surround the future management of shark and sea turtles. For sharks, those challenges include ensuring catch data is fully reported, revisiting whether the 5 percent weight of shark fins onboard is a workable conservation measure, and determining whether shark bycatch or other fishing requirements should be imposed.¹⁷³ For turtles, the adequacy of reporting on fisheries interactions with sea turtles in the NAFO Convention Area needs to be assessed,¹⁷⁴ and the question of whether catch mitigation

¹⁶⁷ NAFO C&E Measures, n. 48 above, Article 16(1).

¹⁶⁸ *Id.*, Article 16(3).

¹⁶⁹ *Id.*, Article 16(6).

¹⁷⁰ *Id.*, Article 16(7)(8).

¹⁷¹ Resolution of the Fisheries Commission of NAFO to Reduce Sea Turtle Mortality in NAFO Fishing Operations (22 September 2006) 1/06, available: <<http://www.nafo.int/publications/resolutions/res1-06.html>> (retrieved 20 November 2008).

¹⁷² *Id.*, paras 2 and 5.

¹⁷³ It should be noted that at the September 2007 Fisheries Commission meeting, the United States proposed a prohibition on possessing porbeagle sharks in the Regulatory Area, but no consensus was reached and the proposal was withdrawn. NAFO Twenty-ninth Annual Meeting, n. 148 above, s. 8.14. The bycatch of porbeagle sharks in pelagic longline fisheries has been a concern. The NAFO President was requested in September 2008 to write to ICCAT, urging ICCAT to take necessary conservation measures to protect the porbeagle stock. NAFO Thirtieth Annual Meeting, n. 125 above, s. 10.

¹⁷⁴ Reporting appears to be quite limited, with Canada, Denmark and Portugal providing updates on sea turtle-fisheries interactions and the United States submitting an update on its Northwest Fisheries Observer Program, Sea Turtle Training Module. NAFO Secretariat, Update

measures should become mandatory remains to be discussed.

Furthering Marine Ecosystem Research

While NAFO is transitioning towards an ecosystem approach, building scientific information and understanding of marine ecosystems is a great challenge. The relative paucity of scientific information was highlighted by the Working Group on Ecosystem Approach to Fisheries Management in its May 2008 Meeting. The report acknowledged that very little is known about deep-water benthic communities, seamount fish communities and marine mammal distributions in the NAFO Regulatory Area.¹⁷⁵ The need to increase data collection and mapping of sponge habitats was emphasised,¹⁷⁶ as was the need for more data on non-commercial species.¹⁷⁷ The report also noted the ecology of canyons in the NAFO Regulatory Area is not well documented.¹⁷⁸

The Fisheries Commission has highlighted the need for more information on the role of seals in the marine ecosystem of the Northwest Atlantic. The Commission has requested the Scientific Council to provide an overview of present knowledge, including the impact of seals on fish stocks, at the Commission's next annual meeting in 2009.¹⁷⁹ At the September 2008 Meeting of the Commission, the EU announced it would start implementing a research programme in the summer of 2009 on mapping the seabeds. The EU welcomed the cooperation of other Parties in such an endeavour.¹⁸⁰

10.4.3.2. NEAFC and the Ecosystem Approach

NEAFC not only focuses on conserving and managing target species, but also envisages to minimise bycatch of fish and non-fish species and other impacts on the broader marine environment. At its 2003 meeting, NEAFC reviewed recent trends in the international management of marine resources, including

on Sea Turtle-Fisheries Interactions, NAFO Thirtieth Annual Meeting, n. 125 above, pp. 6–7, 20, September 2008, FC Working Paper 08/24 and FC Working Paper 08/24 (Addendum).

¹⁷⁵ NAFO, *Report of the NAFO Scientific Council Working Group on Ecosystem Approach to Fisheries Management (WGEAFM)*, Scientific Council Meeting – June 2008, NAFO SCS Doc. 08/10, pp. 6-7, 20.

¹⁷⁶ *Id.*, p. 16.

¹⁷⁷ *Id.*, p. 37.

¹⁷⁸ *Id.*, p. 41.

¹⁷⁹ NAFO Thirtieth Annual Meeting, n. 125 above, p. 10 and Annex 5, item 14.

¹⁸⁰ *Id.*, p. 9.

the ecosystem approach. In 2005, the Working Group on the Future of NEAFC examined how to strengthen NEAFC's role in addressing overall ocean management. The ecosystem approach is now a permanent agenda item at annual meetings. The "new" NEAFC Convention reflects the ecosystem approach by stating that the Commission when making recommendations in accordance with Article 4 or 6 of the Convention, shall in particular:

take due account of the impact of fisheries on other species and marine ecosystems, and in doing so adopt, where necessary, conservation and management measures that address the need to minimise harmful impacts on living marine resources and marine ecosystems; . . .
take due account of the need to conserve marine biological diversity.¹⁸¹

In addition, it is provided that:

The Commission shall provide a forum for consultation and exchange of information on the state of the fishery resources in the Convention Area and on the management policies, including examination of the overall effects of such policies on the fishery resources and, as appropriate, other living marine resources and marine ecosystems.¹⁸²

NEAFC has made some progress in protecting deep-sea species and habitats from the effects of trawl fishing. An area adjacent to Rockall Bank was first closed to trawl fishing in 2001. In 2002, NEAFC set a limit on the catch of many, though not all, deep-water species taken in bottom trawl fisheries on the high seas of the NEAFC area. The limit, however, specified that the fishing effort was not to exceed the "highest level put into deep-sea fishing in previous years" despite ICES' advice that most deep-water fish species are exploited well beyond safe biological limits in the region. In 2003, the NEAFC Commission reviewed scientific information from ICES concerning deep-sea species. From March 2004, a temporary freeze on efforts in deep-sea fisheries was introduced for the rest of the year in the NEAFC Regulatory Area.¹⁸³ A 30 percent reduction in deep-sea fisheries effort was agreed for 2005 onwards following ICES advice. At its 26th annual meeting in November 2007, NEAFC adopted management measures limiting for each Contracting Party the

¹⁸¹ "New" NEAFC Convention, n. 42 above, Article 4(2)(c-d).

¹⁸² Id., Article 4(3).

¹⁸³ C. M. Johnston, *Scoping Study: Protection of vulnerable high seas and deep oceans biodiversity and associated oceans governance* (Peterborough: Joint Nature Conservation Committee, 2004).

effort for 2007 for directed fishing of deep-sea species. The effort could not exceed 65 percent of the highest level put into deep-sea fishing in previous years for the relevant species. This measure entered into force on 16 February 2008.¹⁸⁴

In July 2008, NEAFC recommended mapping existing bottom fishing areas within the Regulatory Area for bottom fishing activities.¹⁸⁵ Contracting Parties were required to submit relevant information. The deadline was 1 September 2008, but only the Russian Federation and Iceland had submitted such information. From 1 January 2009, all bottom fishing activities in new bottom fishing areas, or with bottom gear not previously used in the area concerned, will be considered as exploratory fisheries and shall be conducted in accordance with an exploratory bottom fisheries protocol. Exploratory bottom fishing activities are to be subjected to an assessment procedure, with the understanding that particular care will be taken in the evaluation of risks of the significant adverse impact on VMEs, in line with the precautionary approach. New bottom fishing activities will be based upon the results of exploratory bottom fisheries. It will be the task of NEAFC to authorise bottom fishing and to establish conservation and management measures to prevent significant adverse impacts on VMEs. Contracting Parties and vessels flying their flag will be required to cease bottom fishing activities where, in the course of fishing operations, evidence of VMEs is encountered. The encounter, including the location and the type of ecosystem in question, must be reported to NEAFC so that appropriate measures can be adopted.¹⁸⁶ This proposal was based on a Norwegian proposal, which, to a large extent, is based on a proposal by Canada and the EU in NAFO.

NEAFC has only recently made progress in imposing restrictions on the impact of deep-water trawling in the North East Atlantic on seamounts, coldwater corals, and sensitive bottom ecosystems in the region. Consequently, destructive deep-sea bottom trawl fisheries could continue to expand in the North East Atlantic.

Five vulnerable habitats were closed to demersal fishing gear for 2005–2007 and in November 2006, NEAFC closed parts of the Hatton and Rockall Banks, the Logachev Mounds and the West-Rockall Mounds to fishing from January 2007–December 2009. These and additional areas had been proposed by the EC in 2005 based on recommendations from ICES. These closures,

¹⁸⁴ North-East Atlantic Fisheries Commission (NEAFC), NEAFC Recommendation XV: 2008, available: <http://www.neafc.org/measures/current_measures/docs/15-rec_deepsea_species_2008.pdf> (retrieved 20 November 2008).

¹⁸⁵ NEAFC, Extraordinary Meeting in London on 1–3 July 2008.

¹⁸⁶ NEAFC Recommendation XVI, n. 139 above.

while being a positive step forward for offshore marine conservation, were viewed by NGOs as exemplifying the short-term fishing interests of some of the Convention's parties soon after they were designated. NEAFC Recommendation VII recommended that with respect to certain vulnerable deep-sea habitats, bottom trawling and fishing with static gear was to be prohibited in the following areas: a) the Hecate and Faraday seamounts and a section of the Reykjanes Ridge; b) the Altair seamounts; and c) the Antialtair seamounts. These measures apply for the period 1 January 2008–31 December 2008.¹⁸⁷ Recommendation IX, also resulting from the 26th annual meeting held in November 2007, entailed measures to close certain areas to protect deep-water coral reefs.¹⁸⁸

At its 2003 meeting, NEAFC also reviewed recent trends in the international management of marine resources, including cooperation with other regional and global organisations. NEAFC works closely with other RFMOs in the North Atlantic, namely NAFO¹⁸⁹ and the International Baltic Sea Fishery Commission (IBSFC), as well as ICES. The NEAFC Secretariat initiated the North Atlantic Regional Fisheries Management Organization (NARFMO) and has organised annual meetings since 2001.

NEAFC and the OSPAR Commission (in charge of the Convention for the Protection of the Marine Environment of the North-East Atlantic) have delivered a breakthrough initiative by announcing plans to promote mutual cooperation towards the conservation and sustainable use of marine biodiversity in the North East Atlantic. For the first time in the North East Atlantic, the Commissions in charge of fisheries management and protection of the marine environment are working together. Previously they could have been seen as working towards diverse goals but now a converging vision of a healthier North East Atlantic has encouraged them to sign a memorandum of understanding (MOU), in which both have agreed to cooperate towards the protection of marine ecosystems. The MOU, which has applied since September 2008, covers not only national maritime areas, but also areas beyond national jurisdiction.¹⁹⁰

¹⁸⁷ NEAFC, Recommendation VII, available: <<http://www.neafc.org/measures/index.html>> (retrieved 20 November 2008).

¹⁸⁸ NEAFC, Recommendation IX: 2008, available: <http://www.neafc.org/measures/current_measures/9_deep-water-corals_08.html> (retrieved 20 November 2008).

¹⁸⁹ NEAFC sets TAC for oceanic redfish for both NAFO and NEAFC.

¹⁹⁰ NEAFC/OSPAR MoU, n. 134 above.

10.4.4. Reaching Consensus on Allocation Criteria

10.4.4.1. NAFO and Allocation Criteria

The NAFO Convention provides very general and limited guidance regarding allocation of fishing opportunities in the Regulatory Area that relates to adjusting current fisheries, reopening closed fisheries, opening new fisheries, and ensuring new members receive an appropriate share. Article XI(4) of the Convention essentially calls for a balancing between the interests of Parties exercising traditional fishing and coastal state interests:

Proposals adopted by the Commission for the allocation of catches in the Regulatory Area shall take into account the interests of Commission members whose vessels have traditionally fished within that Area, and, in the allocation of catches from the Grand Bank and Flemish Cap, Commission members shall give special consideration to the Contracting Party whose coastal communities are primarily dependent on fishing for stocks related to these fishing banks and which has undertaken extensive efforts to ensure the conservation of such stocks through international action, in particular, by providing surveillance and inspection of international fisheries on these banks under an international scheme of joint enforcement.¹⁹¹

A Working Group on the Allocation of Fishing Rights, formed in 1997, held a number of meetings culminating in a meeting in March 2003 at Miami, Florida, where consensus could not be reached on allocation criteria.¹⁹² Four key criteria emerged from the discussions, albeit not formally endorsed. They include:

- historical fishing in accordance with NAFO rules during a representative reference period;
- contribution to research and data collection on the stock concerned;

¹⁹¹ The NAFO *Convention on Future Multilateral Cooperation in the Northwest Atlantic Fisheries*, 24 October 1978, *U.N.T.S.*, 1135, 370-388, entry into force 1 January 1979, full text available: <<http://www.nafo.int/about/overview/convention/convention.pdf>> (retrieved 20 November 2008) [hereinafter NAFO Convention].

¹⁹² NAFO, *Report of the Working Group on the Allocation of Fishing Rights to the Contracting Parties of NAFO*, March 26–27, 2003, Miami, Florida, U.S.A., NAFO/FC Doc. 03/02, full text available: <http://archive.nafo.int/open/mp/2003-04/fc_allocation-mar.pdf> (retrieved 20 November 2008).

- needs of coastal communities that are dependent on fishing for the stock concerned; and/or
- contribution to the NAFO conservation and enforcement measures.¹⁹³

The challenge of fisheries allocation is especially apparent in relation to shrimp. For shrimp in Division 3M, NAFO parties have not been able to agree on a quota allocation scheme due to differing opinions on the extent to which historical fisheries should influence a quota allocation and which reference period should be used.¹⁹⁴ As a result, a rather unsatisfactory scheme continues whereby Contracting Parties are allocated a certain number of fishing days by a specific number of vessels (see Table 10.1).¹⁹⁵

Table 10.1. Effort allocation scheme for shrimp fishery in the NAFO Regulatory Area Division 3M (2008)

Contracting Party	Number of Fishing Days	Number of Vessels
Canada	456	16
Cuba	100	1
Denmark		
– Faroe Islands	1,606	8
– Greenland	515	14
European Union	3,293 ¹	33 ¹
France (in respect of St. Pierre et Miquelon)	100	1
Iceland	N/A	N/A
Japan	100	1
Korea	100	1
Norway	1,985	32
Russia	2,100	N/A
Ukraine	100	1
USA	100	1

¹ This includes fishing entitlements transferred from Poland (100 fishing days with one vessel), Estonia (1,667 fishing days with eight vessels), Latvia (490 fishing days with four vessels) and Lithuania (579 fishing days with seven vessels) following their accession to the EU.

¹⁹³ Id., Annex 11, Draft Guidelines for future allocation of fishing opportunities for the stocks not currently allocated.

¹⁹⁴ NAFO, n. 47 above, p. 5.

¹⁹⁵ NAFO C&E Measures, n. 48 above, Annex I.B.

Iceland has consistently objected to the effort allocation scheme as it could lead to overfishing.¹⁹⁶ Allocation of shrimp in Division 3L continues to be controversial. Objectors such as Denmark, in respect of the Faroe Islands and Greenland since 2002,¹⁹⁷ have questioned the allocation scheme for the shrimp, which has been rolled over since 1999 without consensus on the basis for division of shares.¹⁹⁸

10.4.4.2. NEAFC and Allocation Criteria

NEAFC uses a wide range of methods to allocate fishing opportunities, particularly by means of TACs and national quotas.¹⁹⁹ NEAFC's focal species are redfish, mackerel, herring, haddock, blue whiting and deep-sea species.²⁰⁰ The Contracting Parties to the Convention have, in many instances, been unable to take the necessary steps to effectively implement the Convention due to the lack of agreed allocation arrangements in many key fisheries.²⁰¹ Prior to 2006, no agreement was reached on the allocation of blue whiting.²⁰² Lack of consensus on stock structure led to the absence of management measures for oceanic redfish in 2005. Agreement on the sharing out of Atlanto-Scandian herring had to wait until 2008.²⁰³ Recently, Greenland expressed its great

¹⁹⁶ NAFO, n. 47 above, pp. 4–5.

¹⁹⁷ Objections Lodged by Contracting Parties (1994–2007). Copy provided to the authors by the NAFO Secretariat.

¹⁹⁸ NAFO, n. 47 above, pp. 5–6.

¹⁹⁹ “New” NEAFC Convention, n. 42 above, Article 7.

²⁰⁰ These include ling, tusk, blue ling, great silver smelt, orange roughy, grenadiers, black scabbardfish, sea breams, alfonsinos/golden eye perch, squalid sharks, and greater forkbeard.

²⁰¹ Decisions are made by simple majority or, where the Convention requires a qualified majority, by a two-thirds majority of votes of all Contracting Parties present and casting affirmative or negative votes. Each Contracting Party has one vote. A quorum of two-thirds of Contracting Parties is required. In the event of a split of votes on any matter subject to a simple majority, the proposal is rejected. Recommendations become binding on the date determined by the Commission. In an emergency, votes may be taken by post or other means of communication. Any Contracting Party may object to a recommendation (for management measures only) within 50 days of the date of notification. Since 2004 (the amended Convention), Contracting Parties are required to provide a written statement identifying the reason for the objection, their intentions, and alternative conservation and management measures. Management of all stocks is discussed in the plenary meeting.

²⁰² Recommendation adopted by postal vote on blue whiting by Denmark in respect of the Faroe Islands and Greenland, the EC, Iceland, and Norway.

²⁰³ Recommendation from the 26th Annual Meeting November 2007, Recommendation by the North East Atlantic Fisheries Commission in Accordance with Article 5 of the Convention on Future Multilateral Cooperation in North East Atlantic Fisheries at its annual Meeting in

disappointment for not having been allocated a share of the Atlanto-Scandian herring stock for 2009. Greenland believes it should be entitled to a share of this stock. It finds support in Article 7 of the UN Fish Stocks Agreement, which states that the track record in the relevant fisheries should be taken into account when allocating fishing opportunities from straddling stocks. Greenlandic vessels have conducted fisheries for the stock in the years since its recovery when no international management has been in place.²⁰⁴

2009 allocation of blue whiting²⁰⁵

European Community	165,628 tonnes
Faroe Islands	141,870 tonnes
Iceland	95,739 tonnes
Norway	139,806 tonnes

2009 allocation of herring²⁰⁶

European Community	106,959 tonnes
Faroe Islands	84,797 tonnes
Iceland	238,399 tonnes
Norway	1,002,230 tonnes
Russian Federation	210,633 tonnes

A recommendation to guide the expectations of new members to NEAFC was discussed during the May 2003 meeting of the NEAFC Working Group on the Future of NEAFC.²⁰⁷ It was agreed that stocks regulated by NEAFC are fully allocated, and fishing opportunities for new Members are likely to be limited to new fisheries. New Contracting Parties will participate on same basis as existing Contracting Parties in future allocation of stocks unregulated at the time of application. In addition, new Contracting Parties that were previously Cooperating Non-Contracting Parties may request part of the relevant

November 2007 to adopt conservation and management measures for the Norwegian Spring-spawning (Atlanto-Scandian) Herring in the NEAFC Regulatory Area in 2008.

²⁰⁴ NEAFC, *Report of the 27th Annual Meeting of the North East Atlantic Fisheries Commission*, 10–14 November 2008, available: <http://www.neafc.org/system/files/27neafc_annual_2008_vol1_main-report.pdf> (retrieved 20 November 2008).

²⁰⁵ 2009 agreement on the allocation of blue whiting, n. 137 above.

²⁰⁶ 2009 agreement on the allocation of herring, n. 136 above.

²⁰⁷ E. J. Molenaar, “Participation, Allocation and Unregulated Fishing: The Practice of Regional Fisheries Management Organisations,” *International Journal of Marine and Coastal Law* 18, no. 4 (2003): 457–480.

cooperative quota. Such allocations will be considered on case-by-case basis.²⁰⁸

Reaching agreements on TACs and management measures is a major challenge to NEAFC because allocations for the NEAFC Regulatory Area are adopted by NEAFC only if there is coastal state agreement regarding allocation amongst the coastal states. The successful resolution of allocation issues, which is crucial for successful management, requires moving away from the ad hoc negotiations amongst coastal states towards management systems driven by transparent objectives and implementation processes.²⁰⁹

Another challenge is that of clarifying ICES advice on stock status for mackerel and redfish.²¹⁰ Information collected and advice provided by ICES is utilised differently for different fisheries that are regulated under the Convention. In the case of pelagic stocks, the information is utilised in the first instance by coastal states in order to reach agreements on TACs and allocations within the Convention and Regulatory Areas. Though not involved in this initial process, NEAFC in following agreed allocations, will then take steps to develop and implement management measures to support these decisions. However, a different process is followed for pelagic redfish and deep-sea species whereby the TACs and allocations are set directly by NEAFC and may, or may not, be endorsed by coastal states.²¹¹

10.4.5. Ensuring Effective Compliance and Enforcement

In order to facilitate the comparison of the compliance and enforcement provisions of the NAFO and NEAFC systems, a similar structure will be adhered to when analysing each RFMO. An introductory section describes the

²⁰⁸ NEAFC, *Guidelines for the expectation of future new Contracting Parties with regard to fishing opportunities in the NEAFC Regulatory Area* (November 2003), available: <<http://www.neafc.org/becomingacp>> (retrieved 15 November 2008). These guidelines were agreed at the 22nd Annual Meeting of NEAFC in November 2003.

²⁰⁹ K. Hoydal, "A note by the Permanent Committee on Management and Science" (PECMAS) on the advice provided by ICES as seen from NEAFC's perspective, PECMAS, 18–19 October 2007.

²¹⁰ NEAFC Performance Report, n. 43 above, Section 3.3.4, et seq., p. 30. ICES had advised that pelagic redfish was vulnerable to overexploitation. It had also advised that management should aim to prevent a disproportionate exploitation of the fish in the Regulatory Area, and to date this has not been done. This Report provides the NEAFC Commission with a basis to consider ways of improving fisheries in the Regulatory Area. The Report was presented to the NEAFC Commission and led to the new conservation and enforcement scheme that entered into force 1 May 2007.

²¹¹ *Id.*, Section 2.5.6, p. 20.

structure, membership, and objectives of each RFMO and is followed by an analysis of reporting and verification provisions. The inspection, boarding and observer schemes, as well as other enforcement mechanisms, are subsequently addressed. This is followed by a section highlighting the strengths and weaknesses of each system. Finally, a brief review of how each RFMO implements the 1993 FAO Compliance Agreement²¹² and the 1995 UN Fish Stocks Agreement²¹³ is undertaken.²¹⁴ This section concludes by indicating the ways in which NAFO and NEAFC have recently intensified their cooperation efforts aiming to arrive at a more effective compliance and enforcement system.

10.4.5.1. The Northwest Atlantic Fisheries Organization

Structure, Membership and Objectives

NAFO consists of the General Council, the Scientific Council, the Fisheries Commission, and the Secretariat situated in Canada.²¹⁵ NAFO has the following membership: Canada, Cuba, Denmark (in respect of Faeroe Islands and Greenland), the EC, France (in respect of St. Pierre and Miquelon), Iceland, Japan, Korea (Republic of), Norway, the Russian Federation, Ukraine, and the United States.²¹⁶ The organisation has no provisions on Cooperating Non-Contracting Parties.²¹⁷

The Contracting Parties agreed to maintain in force and to implement

²¹² 1993 FAO Compliance Agreement, n. 97 above.

²¹³ 1995 UN Fish Stocks Agreement, n. 37 above.

²¹⁴ The point of departure for this analysis is E. Franckx, *Fisheries Enforcement. Related Legal and Institutional Issues: National, Subregional or Regional Perspectives* (Rome: Food and Agriculture Organization, 2001), pp. 96–105 (NAFO) and 87–95 (NEAFC), available: <<ftp://ftp.fao.org/docrep/fao/007/y2776e/y2776e00.pdf>> (retrieved 16 November 2008) [hereinafter FAO Legislative Study 71]. This analysis was mainly updated on the basis of two documents: 1) E&C Measures, n. 48 above.; and 2) North-East Atlantic Fisheries Commission, Scheme of Control and Enforcement, London, February 2008, available: <http://www.neafc.org/measures/docs/scheme_2008.pdf> (retrieved 20 November 2008) [hereinafter NEAFC Scheme]. Moreover, the following documents were taken into consideration: with respect to NAFO see NAFO Thirtieth Annual Meeting, n. 125 above, and with respect to the NEAFC see Performance Report, n. 43 above.

²¹⁵ NAFO Convention, n. 191 above, Article 2(2 & 4).

²¹⁶ List of members available: <<http://www.nafo.int/contact/frames/members.html>> (retrieved 20 November 2008).

²¹⁷ NAFO C&E Measures, n. 48 above, Chapter VI, Article 47 et seq. All Non-Contracting Parties' vessels sighted in the Regulatory Area are presumed to be undermining the effectiveness of NAFO regulation. See also n. 272 below.

within the Regulatory Area a scheme of joint international enforcement.²¹⁸ This scheme includes provisions for reciprocal rights of boarding and inspection by the Contracting Parties and for flag state prosecution and sanctions on the basis of evidence resulting from such boarding and inspection.²¹⁹

Reporting and Verification

Reporting and verification is undertaken by three primary methods: catch reporting, vessel register, and reporting of each offloading for transshipment of fish. A Contracting Party must ensure that each vessel of that party with fish on board, on entering the Regulatory Area, has a record in its fishing logbook of the amount of each species of fish on board.²²⁰ Moreover, as regards fish taken subject to Fisheries Commission measures, a Contracting Party must guarantee that all vessels of that party fishing in the Regulatory Area record their catches and the estimated cumulative catch on a daily basis and that the records must correspond to the smallest geographical area for which a quota has been allocated.²²¹ This will show the disposition of the catch, including any fish off-loaded while the vessel is operating in the Regulatory Area, as well as catch retained aboard the vessel for the duration of at least twelve months.²²²

For all fish taken subject to Fisheries Commission measures, Contracting Parties are requested to ensure that all vessels of that party fishing in the Regulatory Area either record their cumulative production by species and product form in a production logbook, or stow in the hold all processed catch in such a way that each species is stowed separately.²²³ A stowage plan has to be maintained showing the location of the products in the hold. Furthermore, the Contracting Party, within thirty days following the calendar month in which the catches were made, has the duty to report provisional monthly catches by species and stock area to the Executive Secretary,²²⁴ whether or not that party has quota allocations for the stocks from which catches were obtained.²²⁵ The Executive Secretary, within ten days following the monthly deadlines for receipt of the provisional catch statistics, collates the information received and

²¹⁸ NAFO Convention, n. 191 above, Article 11(4 & 5).

²¹⁹ NAFO C&E Measures, n. 48 above, Chapter IV.

²²⁰ *Id.*, Article 23.

²²¹ *Id.*, Article 23(3).

²²² *Id.*

²²³ *Id.*, Article 23(5).

²²⁴ NAFO Convention, n. 191 above, Article 15(2). The Executive Secretary, appointed by the General Council, is the chief administrative officer of the NAFO Secretariat.

²²⁵ NAFO C&E Measures, n. 48 above, Article 24(1).

circulates it to Contracting Parties.²²⁶

It is the responsibility of the Executive Secretary to establish and maintain a register of all vessels of more than fifty gross tons that are authorised to fish in the Regulatory Area.²²⁷ Each flag Contracting Party has to notify the Executive Secretary of all vessels of more than fifty gross tons engaged in fishing or in processing fish in the Regulatory Area.²²⁸ The format for the register of vessels requires twenty different entries and is made in electronic form.²²⁹ The Executive Secretary makes this register available to all Contracting Parties in a systematic fashion and in accordance with applicable confidentiality requirements.

When the transshipment of fish takes place while the vessel is operating in the Regulatory Area, a report has to be made at least 24 hours in advance. The report should include the date, the time, the geographical position of the vessel, and total round weight by species to be transhipped in kilograms.²³⁰ The verification of the reports, as will be seen, is a competence of the observers.

Inspection and Boarding Schemes

In order to improve and maintain compliance with the conservation and enforcement measures for their vessels fishing in the Regulatory Area, Contracting Parties acquiesce to a scheme of 100 percent observer coverage and to oblige all vessels fishing in the Regulatory Area to be equipped with satellite tracking devices.²³¹ Each Contracting Party has the primary responsibility to obtain, for placement on its vessels, independent and impartial observers performing only the duties explicitly provided for in the C&E Measures.²³² Their salaries are normally covered by the sending Contracting Party. Moreover, each Contracting Party has to provide to the Executive Secretary a list of the observers they will be placing on vessels in the Regulatory Area.²³³

²²⁶ Id., Article 24(4).

²²⁷ Id., Article 19(1).

²²⁸ Id.

²²⁹ Id., Article 19(2).

²³⁰ Id., Article 26(1.d). Article 2(4) defines transshipment as the transfer over the side of any quantity of fisheries resources retained on board, while in the Regulatory Area, from one fishing vessel to another.

²³¹ Id., Annex I to Chapter Ibis notes that a catch monitoring protocol of 100 percent satellite tracking and observer coverage is essential for fishing areas within the Regulatory Area.

²³² Id., Article 27(1).

²³³ Id., Article 27(3).

Observers monitor the vessels' compliance with the relevant conservation and enforcement measures.²³⁴ Their duties are as follows:

1. To record and report upon the fishing activities of the vessel and verify the position of the vessel when engaged in fishing. The observer monitors the functioning of, and reports upon any interference with, the satellite system. In order to better distinguish fishing operations from steaming and to contribute to an *a posteriori* calibration of the signals registered by the receiving station, the observer maintains detailed reports on the daily activity of the vessel
2. To observe and estimate catches with a view to identifying catch composition and monitoring discards, by-catches and the taking of undersized fish
3. To record the gear type, mesh size and attachments employed by the master
4. To verify entries made to the logbooks
5. To collect catch and effort data on each haul
6. To carry out the scientific work as requested by the Fisheries Commission²³⁵

The vessel on which an observer is placed has to provide suitable food and lodging during the observer's deployment. Vessel masters have to ensure that all necessary cooperation is extended to observers in order for them to carry out their duties including providing access, as required, to the retained catch, and catch which is intended to be discarded.²³⁶

The use of arms in relation to the inspections is prohibited and, in particular, the inspectors are requested not to carry arms. The principle of not carrying or using arms shall not be deemed to limit the performance of inspections by a Contracting Party of vessels flying its own flag.²³⁷

A serious infringement is considered to have occurred where a NAFO inspector finds an apparent infringement of the following prohibitions:

1. Fishing on an "Others" quota without prior notification to the Executive Secretary, or more than seven working days after the Contracting Party for the inspected vessel has been notified by the Executive Secretary

²³⁴ In this case, the NAFO C&E Measures with amendments as adopted at the Fisheries Commission's Inter-Sessional Meeting (see n. 47 above) in May 2008.

²³⁵ NAFO C&E Measures, n. 48 above, Article 27(4).

²³⁶ *Id.*

²³⁷ *Id.*, Article 28(8).

- that fishing under an “Others” quota for that stock or species was closed
2. Directed fishing for a stock which is subject to a moratorium or for which fishing is prohibited
 3. Directed fishing for stocks or species after the date on which the Contracting Party for the inspected vessel has notified the Executive Secretary that vessels of that party will cease a directed fishery for those stocks or species
 4. Fishing in a closed area or with gear prohibited in a specific area
 5. Mesh size violations
 6. Fishing without a valid authorisation issued by the flag Contracting Party
 7. Mis-recording of catches
 8. Interference with the satellite tracking system
 9. Catch communication violations
 10. Preventing an inspector or an observer from carrying out his or her duties

The inspector must attempt to communicate with an inspector of the Contracting Party for the inspected vessel.²³⁸ The master of the inspected vessel has the duty to provide the use of the vessel’s radio equipment and operator for messages to be sent out and received for this purpose.²³⁹ The inspector also immediately reports to the Executive Secretary.

Whilst awaiting the arrival of the inspector of the Contracting Party for the inspected vessel, the inspector may require the master to cease all fishing which appears to the inspector to contravene the measures referred to above. The inspector may also seal the vessel’s hold awaiting port inspection.²⁴⁰ In 2006, an enhanced follow-up with regard to certain serious infringements (namely points 2 and 7 above) was elaborated whereby the flag state may be required to order the vessel to proceed immediately to a port in order to be inspected.²⁴¹

When a port call is made in the port of a Contracting Party by a vessel that has been engaged in fishing for stocks subject to conservation measures, the Contracting Party whose port is being used has to ensure that its inspector is

²³⁸ Id., Article 36(2).

²³⁹ Id.

²⁴⁰ Id., Article 36(6).

²⁴¹ Id., Article 36(7). Article 36(7) explains that this is only applicable where justified, and the inspection must be made by the contracting flag state vessel’s inspector in the presence of another Contracting Party’s inspector. Where the vessel’s home port is a long way away, the Article lists ports in the Regulatory Area where the vessel will be inspected by authorised officials.

present and that, on each occasion when catch is offloaded, an inspection takes place to verify the species and quantities caught.²⁴² The Contracting Party is to ensure that the interference in the offloading activity is minimised and that the quality of the catch is not adversely affected.²⁴³ The quantities landed by species and the quantities retained on board, if any, are to be cross-checked with the quantities recorded in logbooks, catch reports on exit from the Regulatory Area, and reports of any inspections carried out under this scheme.²⁴⁴ Additionally, inspections have to include verification of mesh size of nets on board and size of fish retained on board.²⁴⁵

Other Enforcement Provisions/Schemes

NAFO has adopted a wide range of measures for the conservation and management of the stocks in the Regulatory Area. These include setting total allowable catches and member nation quota allocations,²⁴⁶ technical conservation measures such as minimum fish sizes,²⁴⁷ minimum mesh sizes,²⁴⁸ and changing gear requirements.²⁴⁹ Fishing vessels have to record their catches on a daily basis and record their cumulative production by species in a production logbook.

Where a NAFO inspector cites a vessel for having committed an apparent infringement of reporting and gear requirements, the inspector will immediately report this to the Executive Secretary. The Executive Secretary in turn immediately has the duty to ensure, for information purposes, that an inspection

²⁴² Id., Article 44(1).

²⁴³ Id. Chapter IV, Article 28(9), in stating the general provisions for inspection and surveillance, notes that quality of catch is maintained by avoiding any damage to packaging, wrapping, or other containers. Where cartons and other containers are opened as part of the inspection process, they must be opened in such a way as to facilitate prompt resealing, repacking, and eventual re-storage.

²⁴⁴ Id., Article 44(3). In addition, inspections must be carried out in accordance with Chapter IV provisions on inspections and surveillance.

²⁴⁵ Id., Article 44(4). Annex XIV describes and notes the applicable mesh sizes, gauges, gauging procedure, and usage in the Regulatory Area. For accuracy, pictorial representations of gauges and sizes are also included.

²⁴⁶ Id., Annex 1.A lists the TACs and quotas for the calendar year for stocks such as cod, redfish, etc.

²⁴⁷ Id., Article 14.

²⁴⁸ Id., Article 13.

²⁴⁹ Id. See also with respect to some of these measures n. 245 above and accompanying text.

vessel authorised by the Contracting Party is present in the Regulatory Area.²⁵⁰

Contracting parties engaged in surveillance or inspection activities in the Regulatory Area must aim at ensuring equal treatment between all Contracting Parties having vessels operating in the Regulatory Area through an equitable distribution of inspections. A ratio between the number of inspections and fishing activity of the inspected Contracting Party, based on, *inter alia*, catch levels, fishing days, and compliance records of that particular state, will, as far as possible, have to be followed in this respect.²⁵¹ Moreover, inspection vessels operating in the Regulatory Area have to maintain contact, as far as possible on a daily basis, and with due regard to radio security, in order to exchange information on boardings/sightings or other relevant information and to coordinate their activities.²⁵² Furthermore, Contracting Parties engaged in inspection or surveillance activities in the Regulatory Area have the duty to prepare reports of inspection activity, based on a calendar year, outlining details of boardings, sightings, and apparent infringements.²⁵³

Each Contracting Party has to ensure that each of its vessels operating in the Regulatory Area is equipped with a satellite-tracking device allowing the continuous tracking of its position by the Contracting Party.²⁵⁴ Automatic communication should occur at least every two hours to a land-based monitoring centre of the flag state.²⁵⁵ To this end the satellite tracking device must allow for automatic communication at least once every six hours when operating in the Regulatory Area to a land-based fisheries monitoring centre of data relating to the following:

1. The vessel identification
2. The most recent geographical position of the vessel (longitude, latitude) with a position error which has to be less than 500 metres, with a confidence interval of 99 percent
3. The date and time of the fixing of the said position of the vessel

²⁵⁰ NAFO C&E Measures, n. 48 above, Article 36 lists a gear requirement infringement as a serious infringement, therefore making security and continuity of evidence an imperative, hence the need to minimise the possible delay in reporting these infringements.

²⁵¹ *Id.*, Article 28(6).

²⁵² *Id.*, Article 28(3).

²⁵³ NAFO Convention, n. 191 above, Article 18, in general, and NAFO C&E Measures, n. 48 above, Article 29(1), in particular. This stipulation comes with an annual time limit by the first of November. By this time, Contracting Parties are to notify the Executive Secretary of provisional participatory plans. According to Article 29(3) of the NAFO C&E Measures, this will ensure coordination of operations between Contracting Parties.

²⁵⁴ NAFO C&E Measures, n. 48 above, Article 25(1).

²⁵⁵ *Id.*, Article 25(1). This Article 25(1) stipulation operates to maintain compliance with vessels in adherence to the conservation and enforcement measures in the Regulatory Area.

The flag state has to keep these records for three years.²⁵⁶

Each Contracting Party has to take the necessary measures to ensure that its land-based fisheries monitoring centre receives these data.²⁵⁷ The land-based monitoring centre of the flag state subsequently has to transmit this information to the Executive Secretary, but not later than 24 hours after having received these communications.²⁵⁸ Upon the request of the Contracting Party, this information can also be sent directly from the vessel to the Executive Secretary. Moreover, the land-based fisheries monitoring centre of each Contracting Party ought to be equipped with computer hardware and software enabling automatic data processing and electronic data transmission. Each Contracting Party is obliged to provide for back-up and recovery procedures in case of system failures.²⁵⁹

NAFO has set up a system of blacklisting of flag of convenience illegal, unregulated and unreported (IUU) fishing vessels.²⁶⁰ It works with a provisional list that enumerates vessels that have been identified as having been engaged in fishing activities contrary to the convention regime. Enquiries are subsequently made into the reasons why these vessels were fishing without permission, and if there is no suitable explanation, the vessel is transferred permanently to the IUU list.²⁶¹

NAFO previously had a system of port inspection in place whereby a vessel which had been engaged in fishing for stocks subject to the conservation and enforcement measures could offload in a port of a Contracting Party. However, this system has created numerous difficulties within the surveillance and inspection scheme. NAFO is currently working on a revised port control system. This is discussed below under “Common/Similar Initiatives by NAFO and NEAFC.”

²⁵⁶ Id., Article 25(2).

²⁵⁷ Id., Article 25(1 & 2).

²⁵⁸ Id., Article 25(6). As previously noted, in n. 250 above, this is to ensure speedy reporting and coherence between Contracting Parties.

²⁵⁹ NAFO C&E Measures, n. 48 above, Article 25(2).

²⁶⁰ Id., Articles 47 & 50. Contracting Parties participate in this procedure by submitting to the Secretariat information relevant for the identification and listing of Non-Contracting Parties carrying out IUU fishing in the Regulatory Area. Thereafter, the Standing Committee on International Control (STACTIC) will recommend the applicable sanction to be meted out to the Non-Contracting Party.

²⁶¹ For more information on IUU lists, see NAFO website at <<http://www.nafo.int/about/frames/about.html>> (retrieved 20 November 2008). See also “Common/Similar Initiatives by NAFO and NEAFC” section in this chapter below.

Strengths of the NAFO System

Membership. Even though any state can become member of the NAFO founding document, membership of the Fisheries Commission itself is restricted to Contracting Parties either participating in fisheries in the Regulatory Area, or parties with evidence that they expect to participate in such fisheries during the year of the annual meeting or during the following calendar year.²⁶² In the latter instance, however, the evidence must be judged satisfactory by the General Council, where Contracting Parties are represented and have one vote.²⁶³ The ability of the General Council²⁶⁴ to review and determine the membership of the Fisheries Commission at each annual meeting indicates that this body exercises some degree of control in membership management. As in the NEAFC system, if new members seek to obtain membership in the Fisheries Commission, “such new members should be aware that presently and for the foreseeable future, stocks managed by NAFO are fully allocated, and fishing opportunities for new members are likely to be limited.”²⁶⁵ Under the NEAFC system this has been reviewed as “appropriate,”²⁶⁶ but doubts abound as it has been argued to be the reason for continued unregulated fisheries in the convention area.²⁶⁷

Open System in Theory. Participation in the Convention is open to any state subject to notification in writing to the depository. However, the membership of the Fisheries Commission is limited to parties that either participate in the fishing activities in the Regulatory Area, or provide evidence that they are going to participate in such fisheries in the near future.²⁶⁸ Currently it is quite difficult to be admitted as a member of the Fisheries

²⁶² NAFO Convention, n. 191 above, Article 13(1).

²⁶³ *Id.*, Article 14(1).

²⁶⁴ Note that each Contracting Party in accordance with Article 4(1) of the NAFO Convention is a member of the General Council.

²⁶⁵ NEAFC Performance Report, n. 43 above, Appendix XI, p. 91. In 2003, the NEAFC Commission adopted these guidelines for states seeking membership as Contracting Parties of NEAFC or as Cooperating Non-Contracting Parties. The limiting nature of these stipulations is an indication of the fact that, at present, all resources in the NEAFC Regulatory Area are overexploited. See also n. 208 above, and accompanying text.

²⁶⁶ NEAFC Performance Report, Section 3.5.2.1, p. 49.

²⁶⁷ M. W. Lodge, D. Anderson, T. Løbach, G. Munro, K. Sainsbury, and A. Willock, *Recommended Best Practices for Regional Fisheries Management Organizations: Report of an Independent Panel to Develop a Model for Improved Governance by Regional Fisheries Management Organizations* (London: The Royal Institute of International Affairs, 2007), available: <http://www.chathamhouse.org.uk/files/10301_rfmo0807.pdf> (retrieved 20 November 2008), pp. 17 and 36.

²⁶⁸ See n. 262 above, and accompanying text.

Commission due to limited resources in a limited area.²⁶⁹ The fact that the membership of the Fisheries Commission is reviewed annually by the General Council means that there is still a possibility of interested states obtaining membership as NAFO does not, in theory, operate a closed membership system.

Full Observer Vessels Coverage. Even though this certainly is an achievement of NAFO, the substantial costs involved to make such a system operational should not be underestimated: It costs an estimated USD26 million per year for Canada and USD362 million per year for the EC.²⁷⁰

Satellite Fishing Vessels Tracking and Real-time Reporting. As noted in the aforementioned point, the costly nature of full observer vessel coverage has led to a system where states are allowed 25 percent coverage by observers supplemented by more detailed and frequent electronic reporting.²⁷¹

Port State Inspection. NAFO has developed its port state inspection system, in line with NEAFC developments, making it one of the more progressive systems that can serve as example for others.

Non-Contracting Party Vessels. NAFO has established a scheme to promote compliance by Non-Contracting Party vessels with the conservation and enforcement measures. Contracting Parties have to report to the NAFO Secretariat all sightings made by inspectors of Non-Contracting Party fishing vessels engaged in fishing activities in the NAFO Regulatory Area.²⁷² Such reports must include all information derived from the inspector's observations concerning the Non-Contracting Party fishing vessel's activities. The inspector will attempt to inform the Non-Contracting Party fishing vessel that it has been sighted engaging in fishing activities, that a surveillance report has been completed,²⁷³ that there may be consequences for the vessel, and that this

²⁶⁹ NAFO Thirtieth Annual Meeting, n. 125 above, p. 29, Annex 5. Fisheries Commission's Request for Scientific Advice on Management in 2010 and Beyond of Certain Stocks in Subareas 2, 3 and 4 and Other Matters (FC WP 08/41, Rev. 2 now FC Doc 08/19), para. 6. Here it was noted that many of the stocks in the NAFO Regulatory Area are in need of rebuilding. This means that the stocks are below the stock biomass or recovery milestone of 60,000 tonnes (Blim).

²⁷⁰ High Seas Task Force, *Closing the Net: Stopping Illegal Fishing on the High Seas* (Governments of Australia, Canada, Chile, Namibia, New Zealand, and the United Kingdom, WWF, IUCN, and the Earth Institute at Columbia University, 9 March 2006), available: <<http://www.high-seas.org/docs/HSTFfinal/HSTF-Final-Report-09-03-06.pdf>> (retrieved 12 November 2008), p. 25.

²⁷¹ Lodge et al., n. 267 above, p. 49.

²⁷² NAFO C&E Measures, n. 48 above, Article 47(1). Article 47(1) stipulates the unequivocal and immediate presumption of infringement on the part of a Non-Contracting Party vessels engaging in fishing activities in the Regulatory Area. See also n. 217 above.

²⁷³ NAFO C&E Measures, n. 48 above, Article 47(3).

information will be distributed to all NAFO Contracting Parties and to the flag state of the vessel.

In the event that a Non-Contracting Party vessel that has been sighted and reported as engaged in fishing activities in the NAFO Regulatory Area is boarded by inspectors, the findings of the inspectors must be transmitted to the Executive Secretary.²⁷⁴ The Executive Secretary will transmit this information to all Contracting Parties within one business day of receiving this information and to the flag state of the boarded vessel as soon as possible.²⁷⁵

In addition, Contracting Parties agree to bring to the attention of any state not a party to the NAFO Convention any matter relating to fishing activities in the Regulatory Area undertaken by nationals or vessels of that state²⁷⁶ that appear to affect adversely the attainment of the objectives of the Convention.²⁷⁷ The Contracting Parties further agree to confer when appropriate upon the steps to be taken towards obviating such adverse effects. However, it should be noted that the absence of a formal framework for cooperation brings into question the effectiveness of such a system for Non-Contracting Parties.²⁷⁸

Traditional Rights. Proposals adopted by the Fisheries Commission for the allocation of catches in the Regulatory Area take into account the interests of members whose vessels have traditionally fished within that area. In the allocation of catches from the Grand Bank and Flemish Cap,²⁷⁹ Fisheries Commission members must give special consideration to the Contracting Party whose coastal communities are primarily dependent on fishing for stocks related to these fishing banks and which have undertaken extensive efforts to ensure the conservation of such stocks through international action,²⁸⁰ in particular by providing surveillance and inspection of international fisheries on

²⁷⁴ Id., Article 48(1).

²⁷⁵ Id.

²⁷⁶ Note that these acts are presumed to be illegal, unreported and unregulated (IUU) fishing activities under Article 47 of the NAFO C&E Measures.

²⁷⁷ NAFO C&E Measures, n. 48 above, Article 54(1) is NAFO's attempt to include Non-Contracting states' relations with Contracting Party states in its control and enforcement measures. Here the theme is that of Non-Contracting states' cooperation with Contracting Parties.

²⁷⁸ D. Owen, *Recommended Best Practices for Regional Fisheries Management Organizations: Practice of RFMOs Regarding Non-members*, Technical Study No. 2 (London: The Royal Institute of International Affairs, 2007), available: <http://www.chathamhouse.org.uk/files/9997_rfmotech2.pdf> (retrieved 20 November 2008), p. 8.

²⁷⁹ NAFO Convention, n. 191 above, Article 11 (4).

²⁸⁰ Id. In relation to the Flemish Cap, the Fisheries Commission restricts shrimp fishing in Division 3M, whereupon lies the Flemish Cap, based on the advice of the Scientific Council in the interest of conservation and stock control. NAFO C&E Measures, n. 48 above, Article 14. For a discussion of the scientific assessments in relation to the Flemish Cap, see NAFO Thirtieth Annual Meeting, n. 125 above, p. 4.

these banks under an international joint enforcement scheme.²⁸¹

Review of Performance. NAFO has recently undergone a review of its performance. Contrary to the NEAFC recent practice, this was an internal review. It nevertheless also constitutes a recommended best practice.²⁸²

Weaknesses of the NAFO System

Objection Procedure in the Convention. If any Fisheries Commission member presents to the Executive Secretary an objection to a proposal, within sixty days of the date of transmittal, the proposal will not become a binding measure on that member. This procedure, albeit not often relied upon, still is used between two and four times each year.²⁸³

Absence of Dispute Settlement Procedure. The present NAFO Convention does not include a dispute settlement procedure, however, an amendment to the NAFO Convention adopted in 2007, but not yet in force, contains an elaborated dispute settlement provision.²⁸⁴

Absence of Enforcement Powers. Compared to its member states, NAFO has no autonomous powers in case of infringements of reporting and gear requirements. Before any action can be taken, the consent of the flag state is required.²⁸⁵

Absence of Conventional Provision on Cooperating Non-Contracting Parties. Even though the NAFO conservation and enforcement measures contain some provisions for cooperation, other than the stipulation that states should adhere to their obligations,²⁸⁶ the present amendment to the Convention on Future Multilateral Cooperation in the Northwest Atlantic Fisheries is without a provision on cooperation between Non-Contracting Parties. Although the amendments are not yet in force, this was a missed opportunity. Article 16 only addresses the issue of Non-Contracting Parties in general and specifically approaches the issue without examining the issue of cooperation with Non-

²⁸¹ NAFO C&E Measures, n. 48 above, Chapter IV.

²⁸² Lodge et al., n. 267 above, p. 115. A performance review is likely to be addressed by NAFO after the amended convention has entered into force and is implemented.

²⁸³ *Id.*, p. 39.

²⁸⁴ Amendment, n. 41 above, Article 3, introducing amongst others a new provision concerning settlements of disputes, namely Article 15.

²⁸⁵ NAFO C&E Measures, n. 48 above, Article 38 states that the competent authorities, upon notification of an infringement, are duty bound to investigate this infringement. This means that all enforcement powers lie within the flag state's domain. It must be admitted that this state of affairs is rather the rule than the exception in RFMOs.

²⁸⁶ *Id.*, Article 54 notes the need for cooperation in order to ensure the effectiveness of the control and enforcement measures adopted pursuant to the Convention.

Contracting Parties.

There are, however, some conventional provisions which impact on this issue in an indirect manner.²⁸⁷ Examples of the indirect applicability of the Convention's provisions are evident when one notes that Non-Contracting Parties can consent to boarding²⁸⁸; the vessel can establish that it applied all relevant conservation and enforcement measures in order to land or transship fish²⁸⁹; the flag state can report back after the placing of the vessel on the provisional list on the measures it has taken²⁹⁰; the flag state can, after the IUU listing of a vessel, report back to the Standing Committee on International Control that it has taken effective action to stop the vessel from further IUU fishing activities, either through sanctions or adjustment of the fishing licence²⁹¹; the flag state can exchange information with NAFO regarding vessels on the IUU list in order to help detect control and prevent false import/export certificates²⁹²; and the flag state can, after being so requested, agree to fully cooperate with NAFO and implement its conservation and enforcement measures.²⁹³ Nonetheless no advantages for the non-contracting state formally ensue from any of these actions.

Implementation of the 1993 FAO Compliance Agreement

As called for under the 1993 FAO Compliance Agreement, NAFO requires high seas fishing vessels to report their fishing areas, catches, and landings. Their reports are inspected under a 100 percent observer scheme.²⁹⁴ When a fishing vessel has been sighted committing an infringement, the flag state has to be informed. The flag state has to react as if the infringement had been committed in waters under its jurisdiction.²⁹⁵

NAFO generally complies with the provisions of the 1993 FAO

²⁸⁷ For a more detailed analysis, see Owen, n. 278 above, pp. 100–103.

²⁸⁸ NAFO C&E Measures, n. 48 above, Article 48(1).

²⁸⁹ *Id.*, Article 50(2).

²⁹⁰ *Id.*, Article 49(2).

²⁹¹ *Id.*, Article 53(a)-(k) lists a range of sanctions applicable by the Contracting Party.

²⁹² *Id.*, Article 53(k).

²⁹³ *Id.*, Article 54(1).

²⁹⁴ 1993 FAO Compliance Agreement, n. 97 above. Article 4 calls for state parties to have an accurate record of vessels flying its flag. Article 5 notes the need for cooperation between the parties of the convention in order to harmonise international conservation and management measures in the high seas. Article 8 notes the need for cooperation between Contracting Parties and Non-Contracting Parties for effective ocean management and conservation.

²⁹⁵ *Id.*, Article 3(8) notes that in addition to sanctions under national jurisdiction, sanctions can also include a refusal, suspension, or withdrawal of the authorisation to fish on the high seas.

Compliance Agreement. For example, NAFO's objective is to promote the conservation and optimum utilisation of fishery resources in the Northwest Atlantic.²⁹⁶ All vessels operating in the NAFO area have to register with the Executive Secretary.²⁹⁷

Implementation of the 1995 UN Fish Stocks Agreement

The Fisheries Commission seeks to ensure consistency between any proposal that applies to a stock or group of stocks occurring both within the Regulatory Area²⁹⁸ and within an area under the fisheries jurisdiction of a coastal state, or any proposal that would have an effect through species inter-relationships on a stock or group of stocks occurring in whole or in part within an area under the fisheries jurisdiction of a coastal state.²⁹⁹ The Fisheries Commission also seeks consistency between any measures or decisions taken by the coastal state for the management and conservation of that stock or group of stocks with respect to fishing activities conducted within the area under its fisheries jurisdiction.³⁰⁰ The appropriate coastal state and the Fisheries Commission accordingly promote the coordination of such proposals, measures and decisions.³⁰¹

The NAFO Contracting Parties agree to maintain and implement within the Regulatory Area a scheme of joint international enforcement.³⁰² This scheme includes provisions for reciprocal rights of boarding and inspection by the Contracting Parties and for flag state prosecution and sanctions on the basis of evidence resulting from such boardings and inspections. A report of such prosecutions and sanctions imposed is included in an annual statement

²⁹⁶ NAFO Convention, n. 191 above, Preamble and Article 2(1).

²⁹⁷ 1993 FAO Compliance Agreement, n. 97 above. Article 4 stipulates that all parties maintain a record of all its fishing vessels. NAFO C&E Measures, n. 48 above, Article 19(1) obliges all Contracting Parties to register their vessels with the Executive Secretary and this registration is circulated to all Contracting Parties. Vessels that are not in this list are deemed not to be authorised to fish in the Regulatory Area.

²⁹⁸ NAFO C&E Measures, n. 48 above, Article 23(1).

²⁹⁹ NAFO Convention, n. 191 above, Article 11(3.a). See also R. Rayfuse, "Canada and Regional Fisheries Organizations: Implementing the UN Fish Stocks Agreement," *Ocean Development and International Law* 34 (2003), p. 211. This is known as the "consistency rule" and is the requirement that the management regime applied to the high seas portion corresponds with the management regime of the coastal state within its EEZ. Rayfuse also notes that this practice, as originated by NAFO, has been applied other by RFMOs as well as by international agreements.

³⁰⁰ NAFO Convention, n. 191 above, Article 11(3.b).

³⁰¹ *Id.*

³⁰² *Id.*, Article 11(4) in general and Article 18 in particular.

regarding the actions that were taken during the last year.³⁰³

The Contracting Parties agree to bring to the attention of any state not a party to this Convention any matter relating to fishing activities in the Regulatory Area undertaken by nationals or vessels of that state that appear to affect adversely the attainment of the objectives of the Convention.³⁰⁴ The Contracting Parties further agree to confer when appropriate upon the steps to be taken towards obviating such adverse effects.³⁰⁵ Furthermore, in 1997, NAFO adopted a scheme to promote compliance by Non-Contracting Party vessels with its conservation and enforcement measures.³⁰⁶ In the event that any Non-Contracting Party vessel that has been sighted and reported as engaged in fishing activities in the NAFO Regulatory Area consents to be boarded by NAFO inspectors, the findings of NAFO inspectors are transmitted to the NAFO Secretariat.³⁰⁷ The NAFO Secretariat will transmit this information to all NAFO Contracting Parties within one business day of receiving this information and to the flag state of the boarded vessel as soon as possible.³⁰⁸ As well as providing the Non-Contracting Party's vessels with a copy of the findings of the NAFO inspectors, the flag state of the boarded vessel is also forwarded a copy of the NAFO inspectors report.³⁰⁹

As regards the call for port state enforcement provisions under the UN Fish Stocks Agreement, NAFO has had a system of port state enforcement in place, but it is presently under reconsideration. This is discussed below under "Common/Similar Initiatives by NAFO and NEAFC."

10.4.5.2. The North East Atlantic Fisheries Commission

Structure, Membership and Organization

The NEAFC covers the North East Atlantic, including dependent seas, and the 200 nm zones, with the exception of Baltic Sea and the Belts, as well as the Mediterranean Sea and its dependent seas. These areas mostly correspond with

³⁰³ Id., Article 18.

³⁰⁴ Id., Article 19.

³⁰⁵ Id.

³⁰⁶ NAFO C&E Measures, n. 48 above, Chapter VI notes the rules of presumed infringement in relation to Non-Contracting Party vessels in the Regulatory Area.

³⁰⁷ Id., Article 47(3).

³⁰⁸ Id., Article 47(4).

³⁰⁹ Id.

FAO Statistical Area 27.³¹⁰

NEAFC has a relatively simple structure. There is the NEAFC Commission itself, which is composed of all members, and a Secretariat. There is no internal scientific body. However, in 2003, NEAFC concluded a memorandum of understanding with ICES³¹¹ by virtue of which scientific advice is received, against payment that represents about 20 percent of the annual budget of NEAFC. The NEAFC Commission is also empowered to set up subsidiary bodies, if this is considered “desirable” for the exercise of its duties and functions.³¹²

The current membership is made up of the following: Denmark (in respect of the Faeroe Islands and Greenland), the EU, Iceland, Norway, and the Russian Federation.³¹³ In 1982, when the NEAFC Convention entered into force, there were 13 members, but most of them are currently EU Member States. These Member States include Bulgaria (EU membership 2007; discontinued membership in the NEAFC Commission in 1995), Estonia (EU membership 2004; joined the NEAFC Commission in 2003 and discontinued its membership in 2006), Finland (EU membership 1995), Poland (EU membership 2004; discontinued membership in the NEAFC Commission in 2006), Portugal (EU membership 1986) and Sweden (EU membership 1995). In 1990, the German Democratic Republic unified with Germany. Since Greenland withdrew from the EC in 1985 it has been represented by Denmark.³¹⁴

The organisation has specific provisions for what it calls Cooperating Non-Contracting Parties.³¹⁵ A Non-Contracting Party seeking that status must submit a request containing the following information: data on historical

³¹⁰ For more information on this area, see J. J. Maguire, “B2 Northeast Atlantic. FAO Statistical Area 27,” in: *Review of the State of the World Marine Fishery Resources. FAO Fisheries Technical Paper 457* (Rome: FAO, 2005): 23–30, available: <<ftp://ftp.fao.org/docrep/fao/007/y5852e/Y5852E02.pdf>> (retrieved 20 November 2008).

³¹¹ This is in accordance with NEAFC Convention, n. 42 above, Article 14 (1 & 2), which notes that the NEAFC Commission shall seek information and advice as well as ensure that joint studies are encouraged and conducted without delay with ICES.

³¹² *Id.*, Article 3(8).

³¹³ NEAFC, “Which Parties make up NEAFC Contracting Parties,” available: <<http://www.neafc.org/what-neafc/118>> (retrieved 20 November 2008).

³¹⁴ NEAFC, “London Declaration and New Convention,” available: <http://www.neafc.org/system/files/%252Fhome/neafc/drupal2_files/london-declaration_and_new_convention.pdf> (retrieved 20 November 2008).

³¹⁵ These are vessels from states that are Non-Contracting Parties but are authorised to fish in specified areas under a cooperation quota. The fishing resource quota as decided by the NEAFC Commission varies from state to state, and cooperating Non-Contracting Party licences are reviewed annually.

fisheries, current fishing activities, and details on research programmes it has conducted in the Regulatory Area and the results which it is willing to share with NEAFC.³¹⁶ It must also accept to respect the NEAFC Scheme³¹⁷ and other recommendations, communicate to NEAFC the measures it takes to ensure compliance, and annually communicate catch and effort data.³¹⁸ On the recommendation of the Permanent Committee on Control and Enforcement (PECCOE), the NEAFC Commission decides on the granting of such status on an annual basis. If granted, the states involved can participate in the plenary and scientific meetings of the NEAFC as an observer. At present Belize, Canada, Cook Islands, Japan, and New Zealand fall within this category.³¹⁹

The objective of NEAFC is to perform its functions in the interests of the conservation and optimum utilisation of the fishery resources of the convention area.³²⁰ Consequently, NEAFC is empowered to recommend a wide variety of conservation and management measures.³²¹ The responsibility for enforcing management measures adopted under the NEAFC rests with the Contracting Parties. They are required to take such action, including the imposition of adequate sanctions for infractions, as may be necessary to implement any recommendations adopted by the NEAFC Commission.³²² However, in 1999, a Scheme of Joint International Inspection and Surveillance was adopted, closely following the models provided by the 1995 UN Fish Stocks Agreement and NAFO.

Reporting and Verification

Each Contracting Party ensures that all fishing vessels flying its flag and conducting fishing activities in the Regulatory Area keep a bound fishing logbook and, where appropriate, a production logbook and storage plan.³²³

³¹⁶ NEAFC Scheme, n. 214 above, Article 34(1).

³¹⁷ The NEAFC Scheme (n. 214 above) is in accordance with the stipulation of the NEAFC Convention (n. 42 above, Articles 7 & 8), which obliges the Commission to make recommendations binding on Contracting Parties. These measures ensure control and enforcement of the Convention with respect to fishing vessels fishing in areas beyond the limits of national fisheries jurisdiction.

³¹⁸ NEAFC Scheme, n. 214 above, Article 43(1).

³¹⁹ NEAFC, "NEAFC Guide," available: <<http://www.neafc.org/neafcguide>> (retrieved 20 November 2008).

³²⁰ NEAFC Convention, n. 42 above, Article 4(1).

³²¹ *Id.*, Article 7 et seq.

³²² *Id.*, Article 15(1).

³²³ NEAFC Scheme, n. 214 above, Article 9(1). Note, however, that this stipulation provides that a Contracting Party may desist from keeping a fishing logbook where its vessels are

The Contracting Party makes sure that its fishing vessels communicate catch reports to their land-based fisheries monitoring centre or directly to the Secretary if the Contracting Party so wishes.

A Contracting Party is required to report the quantities on board when entering the Regulatory Area. This report shall be made no more than twelve hours and at least two hours in advance of each entry into the Regulatory Area.³²⁴ Moreover, a report on weekly catches must be transmitted at the latest at the end of the seventh day after the entry into the Regulatory Area. When fishing trips take more than seven days, the master of the fishing vessel is obliged to transmit by the latest on Monday at noon the catches taken in the Regulatory Area during the preceding week ending Sunday midnight. This report must include information on the number of fishing days since the commencement of fishing, or since the last catch report.³²⁵

Further, the Contracting Party is requested to report the quantities on board when exiting the Regulatory Area. This report has to be made no more than eight hours and at least two hours in advance of each exit from the Regulatory Area. It must include, where appropriate, the number of fishing days and the catch taken in the Regulatory Area since the commencement of fishing, or since the last catch report.³²⁶ Finally, the Contracting Parties have to report the quantities on-loaded and off-loaded for each transshipment of fish during the vessel's stay in the Regulatory Area.³²⁷

Each Contracting Party has the duty, within thirty days following the calendar month in which the catches were landed, or transhipped, to report to the Secretary provisional monthly statistics of catches of fisheries, whether or not that party has quota allocations for the stocks from which catches were obtained.³²⁸ The Secretary, within ten days following the monthly deadlines for receipt of the provisional catch statistics, collates the information received and circulates it to the Contracting Parties.³²⁹ These reporting obligations also apply to regulated resources caught in areas under national fisheries jurisdiction.³³⁰

Additional requirements relate to inspection activities reports. Each

engaged in transshipment operations which offloads quantities on board. This stipulation in the NEAFC Scheme is in accordance with Article 9 of the NEAFC Convention, n. 42 above, which empowers the NEAFC Commission to establish measures providing for the collection of statistical information relating to fisheries in the Regulatory Area.

³²⁴ NEAFC Scheme, n. 214 above, Article 12(1.a).

³²⁵ *Id.*, Article 12(1.b).

³²⁶ *Id.*, Article 12(1.c).

³²⁷ *Id.*, Article 13 (1).

³²⁸ *Id.*, Article 10(1). Note also that these statistics of catches of fisheries are listed according to the species list enumerated in Annex V of the NEAFC Scheme.

³²⁹ *Id.*, Article 10(2).

³³⁰ *Id.*, Article 10(3).

Contracting Party is obliged to report to the Secretary by 1 October of each year for the period 1 July to 30 June the number of inspections conducted by it under the NEAFC. The report should specify the number of inspections on the vessels of each Contracting Party and, in the case of infringement, the date and position of the inspection of the named vessel and the nature of infringement.³³¹ The Contracting Party also has the duty to report the number of air hours flown and the number of days at sea on NEAFC patrol, the number of sightings, and the number of surveillance reports established, as well as the follow-up of such reports.

Inspection and Boarding Schemes

Each Contracting Party assigns inspectors to the NEAFC Scheme. Each inspector carries special documentation of identity as a NEAFC inspector issued by the respective Contracting Party and is obliged to hold and produce this document of identity when boarding a fishing vessel.³³²

Each Contracting Party notifies the Secretary before 1 January of each year of the names of the inspectors and special inspection vessels, as well as the type of aircraft and the details of their identification, which they are assigning to the NEAFC Scheme for that year.³³³ Modifications by Contracting Parties to such notifications must be communicated to the Secretary giving one month's notice.³³⁴ The Secretary in turn circulates such notifications within fifteen days of receipt to all Contracting Parties.³³⁵

Any vessel assigned to the NEAFC Scheme and carrying assigned inspectors, as well as the boarding craft deployed by that vessel, carries a special flag or pennant to indicate that inspectors on board may carry out inspection duties in accordance with the NEAFC Scheme. Aircraft assigned to the NEAFC Scheme must have their international radio call sign clearly displayed.³³⁶

Furthermore, each Contracting Party has the duty to keep a record for

³³¹ Id., Article 32(1). Article 32 further stipulates that these infringements shall continue to be listed on each subsequent report until action is taken in accordance with relevant national law provisions. This is in accordance with the NEAFC Convention, which grants the Contracting Party the right to inspect and sanction in waters under their jurisdiction. NEAFC Convention, n. 42 above, Article 15(1).

³³² NEAFC Scheme, n. 214 above, Article 15(1).

³³³ Id., Article 16(1).

³³⁴ Id.

³³⁵ Id., Article 16(2).

³³⁶ Id., Article 16(3).

their assigned inspection vessels and aircraft of the date and hour of the start and termination of their duties under the NEAFC Scheme and to provide this information to the NEAFC Secretary. The Secretary promptly informs the other Contracting Parties.³³⁷

Special rules apply when more than ten fishing vessels of any one Contracting Party are engaged in fishing activities on regulated resources in the Regulatory Area at the same time. The Contracting Party is required, during that time, to have an inspection vessel in the Regulatory Area, or to cooperate with another Contracting Party to jointly operate an inspection vessel.³³⁸

The NEAFC Scheme sets out a series of general inspection and surveillance principles to guide the inspection process. Each Contracting Party ensures that assigned inspectors from another Contracting Party are allowed to carry out inspections on board those of its fishing vessels to which the NEAFC Scheme applies. Furthermore, it has the duty to adopt measures obliging the masters of the fishing vessels to cooperate with the assigned NEAFC inspectors and to ensure their safety throughout the inspection.³³⁹

Moreover, each Contracting Party ensures that inspections carried out by that party are carried out in a non-discriminatory manner and in accordance with the NEAFC Scheme. The number of inspections is based upon fleet size, taking into account the time spent in the Regulatory Area. In its inspections, each Contracting Party aims at ensuring equal treatment between all Contracting Parties with fishing vessels operating in the Regulatory Area through an equitable distribution of inspections.³⁴⁰

Inspectors have to avoid the use of force except when and to the degree necessary to ensure their safety. When carrying out inspections on board fishing vessels, inspectors cannot carry any firearms.³⁴¹ In addition, without limiting the capability of inspectors to carry out their mandates, inspections have to be made so that the fishing vessel, its activities, and the catch retained on board do not suffer undue interference and inconvenience.³⁴²

The NEAFC Scheme also establishes the parameters of the inspection procedure. No boarding can be conducted without prior notice by radio being sent to the fishing vessel or without the fishing vessel being given the appropriate signal using the International Code of Signals, including the identity of the inspection platform, whether or not such notice is acknowledged

³³⁷ Id., Article 16(4).

³³⁸ Id., Article 16(5).

³³⁹ Id., Article 15(2).

³⁴⁰ Id., Article 15(3).

³⁴¹ Id., Article 15(4).

³⁴² Id., Article 15(5).

as received.³⁴³ There can be no more than two inspectors in an inspection party from one Contracting Party boarding a fishing vessel of another Contracting Party.³⁴⁴ Additionally, each Contracting Party has to ensure that its inspection platforms manoeuvre at a safe distance from the fishing vessels according to good seamanship.³⁴⁵

An inspector has the authority to examine all relevant areas, decks and rooms of the fishing vessels, catch (whether processed or not), nets or other gear, equipment, and any relevant documents that the inspector deems necessary to verify the compliance with the measures established by NEAFC and to question the master or a person designated by the master.³⁴⁶ The fishing vessel to be boarded cannot be required to stop or manoeuvre when fishing, shooting, or hauling. The inspectors may order the interruption or delay in the hauling of the fishing gear until they have boarded the fishing vessel and in any event no more than thirty minutes after receiving the signal.³⁴⁷ In addition, inspectors ought not to interfere with the master's ability to communicate with the authorities of the flag state during the boarding and inspection.³⁴⁸

The duration of an inspection may not exceed four hours, or until the net is hauled in and the net and catch are inspected, whichever is longer. In the case of an infringement being detected, the inspectors may stay on board for the time necessary for the completion of the inspection. However, in special circumstances relating to the size of a fishing vessel and the quantities of fish retained on board, the duration of the inspection may exceed the limits stipulated above. In such a situation, the inspecting party shall in no case stay longer on board the fishing vessel than the time required to complete the inspection. The reasons for exceeding the limit stipulated above have to be recorded in the inspection report.³⁴⁹

In carrying out their inspection, the inspectors may request of the master any assistance required.³⁵⁰ Moreover, the report of the inspection may be commented upon by the master and must be signed by the inspectors at the end of the inspection. A copy of the inspection report has to be given to the master

³⁴³ *Id.*, Article 18(1). This reinforces Section 3.3.12 of the NEAFC Performance Report (n. 43 above), which highlights the importance and centrality of automatic transmission of messages and handling of data in the NEAFC Scheme.

³⁴⁴ NEAFC Scheme, n. 214 above, Article 18(6).

³⁴⁵ *Id.*, Article 18(10).

³⁴⁶ *Id.*, Article 18(2).

³⁴⁷ *Id.*, Article 18(3).

³⁴⁸ *Id.*, Article 18(9).

³⁴⁹ *Id.*, Article 18(5).

³⁵⁰ *Id.*, Article 18(8).

of the fishing vessel.³⁵¹

During an inspection, the master of a fishing vessel is requested to facilitate prompt and safe boarding. The master is to cooperate with and assist in the inspection of the fishing vessel conducted pursuant to these procedures,³⁵² and not obstruct, intimidate or interfere with the inspectors in the performance of their duties. Moreover, the master has to allow inspectors to communicate with the authorities of the flag Contracting Party and the inspecting Contracting Party. Further, the master must provide them access to relevant areas, decks and rooms of the fishing vessel, catch (whether processed or not), nets or other gear, equipment, and any relevant documents.³⁵³

The NEAFC Scheme also establishes procedures for reporting infringements, with special procedures provided for serious infringements. If the inspectors find that there are clear grounds for believing that a fishing vessel flying the flag of another Contracting Party has engaged in any activity contrary to NEAFC recommendations, they are required to note the infringement in the inspection report and to take all necessary measures to ensure security and continuity of the evidence for subsequent dockside inspection.³⁵⁴ An identification mark may be affixed securely to any part of the fishing gear that appears to the inspector to have been in contravention of applicable measures.³⁵⁵

In order to facilitate Contracting Party action on the infringement, inspectors immediately are obliged to attempt to communicate with an inspector or designated authority of the Contracting Party of the inspected fishing vessel.³⁵⁶ In addition, the Contracting Party inspecting a fishing vessel ought to communicate in writing the details of an infringement to the designated authorities of the Contracting Party of the inspected vessel within the working day following the inspection whenever possible.³⁵⁷ The original of the inspection report, together with any supporting documentation, is to be forwarded promptly to the appropriate authorities of the Contracting Party of

³⁵¹ Id.

³⁵² Id., Article 19(a). As noted in Annex XIV of the NEAFC Scheme, these procedures include, *inter alia*, ensuring that embarking and disembarking occurs by means of a ladder of which the positioning and construction requirements are described in detail.

³⁵³ Id., Article 19(d & e).

³⁵⁴ Id., Article 28(1.a). Note also that these measures must be in conformity with Article 18 provisions on inspection procedures or the relevant areas to be considered, as well as Article 27 provisions on inspection reports using port state control inspection reports (PSC 3) as set out in Annex XVI.

³⁵⁵ Id., Article 28(1.b).

³⁵⁶ Id., Article 28(1.c).

³⁵⁷ Id., Article 28(2).

the inspected fishing vessel as well as a copy to the Secretary.³⁵⁸

A serious infringement means:

1. Fishing without a valid authorisation issued by the flag Contracting Party
2. Fishing without or after attainment of a quota
3. Use of prohibited fishing gear
4. Serious mis-recording of catches
5. Repeated failure to comply with the communication procedure
6. Landing or transshipment without authorisation of the port state
7. Preventing an inspector from carrying out his duties
8. Directed fishing for a stock that is subject to a moratorium or for which fishing is prohibited
9. Falsifying or concealing the markings, identity or registration of a fishing vessel
10. Concealing, tampering with or disposing of evidence relating to an investigation
11. Multiple violations that together constitute a serious disregard of conservation and management measures
12. Engaging in transshipment or joint fishing operations with vessels of a Non-Contracting Party which has not been accorded the status of a Cooperating Non-Contracting Party
13. Supplying any provisions, fuel or other services to vessels that have been placed on the IUU list³⁵⁹

If a NEAFC inspector considers that there are clear grounds for believing that a fishing vessel has committed a serious infringement, the inspector must promptly notify the flag Contracting Party of that infringement as well as the Secretary.³⁶⁰ The flag Contracting Party is obliged to respond to the notification without delay and to ensure that the fishing vessel concerned is inspected within 72 hours by an inspector duly authorised by that flag Contracting Party.³⁶¹ In order to preserve the evidence, the inspector is required to take all necessary measures to ensure security and continuity of the evidence whilst minimising interference with and inconvenience to the operation of the vessel.³⁶² Moreover, the inspector is entitled to remain on board the fishing

³⁵⁸ Id., Article 28(3).

³⁵⁹ Id., Article 29, Section a, et seq.

³⁶⁰ Id., Article 30(1). In transshipment operations, the parties to be notified consist of parties of donor vessels.

³⁶¹ Id., Article 30(2).

³⁶² Id., Article 30(3).

vessel for the period necessary to provide information to the duly authorised inspector concerning the infringement or until the response of the flag Contracting Party requires the inspector to leave the fishing vessel.³⁶³

The flag Contracting Party, if evidence so warrants, requires the fishing vessel to proceed immediately to a port designated by that Contracting Party for a thorough inspection under its authority and in the presence of a NEAFC inspector from any other Contracting Party that wishes to participate.³⁶⁴ Additionally, the flag Contracting Party may authorise the inspecting Contracting Party to bring the fishing vessel without delay to a port designated by the flag Contracting Party.³⁶⁵ If the fishing vessel is not called to port, the Contracting Party must provide due justification in a timely manner to the Secretary and to the inspecting Contracting Party. The Secretary has to make such justification available on request to any Contracting Party.³⁶⁶ Where a fishing vessel is required to proceed to port for a thorough inspection in accordance with control measures,³⁶⁷ a NEAFC inspector from another Contracting Party may, subject to the consent of the Contracting Party of the fishing vessel, board the fishing vessel as it is proceeding to port, may remain on board the fishing vessel as it proceeds to port, and may be present during the inspection of the fishing vessel in port.³⁶⁸

The appropriate authorities of a Contracting Party notified of an infringement committed by a fishing vessel of that party are requested to take prompt action to receive and consider the evidence of the infringement and, conduct any further investigation necessary for the follow up to the infringement and, whenever possible, inspect the fishing vessel concerned.³⁶⁹ Each Contracting Party has to designate the appropriate authorities mandated for receiving evidence of infringement and has to inform the Secretary of the address of those authorities.³⁷⁰ The Secretary then shall subsequently inform all other NEAFC Contracting Parties.³⁷¹

The NEAFC Scheme makes provisions for mutual recognition of inspectors. In the interest of uniformity, each Contracting Party is required to consider and act on reports from inspectors of other Contracting Parties under

³⁶³ Id., Article 30(4).

³⁶⁴ Id., Article 30(5).

³⁶⁵ Id., Article 30(6).

³⁶⁶ Id., Article 30(7).

³⁶⁷ Id., Articles 5 & 6.

³⁶⁸ Id., Article 30(8).

³⁶⁹ Id., Article 28(4).

³⁷⁰ Id.

³⁷¹ Id.

the NEAFC Scheme on the same basis as reports from its own inspectors.³⁷² Contracting Parties must also cooperate in order to facilitate judicial or other proceedings arising from a report submitted by an inspector under the NEAFC Scheme.³⁷³

Other Enforcement Provisions/Schemes

The NEAFC Scheme includes specific provisions to facilitate enforcement concerning fishing vessels, including provisions for IUU fishing vessels and port state measures. Each Contracting Party notifies, in computer readable form, to the Secretary prior to 1 January of each year if possible, or in any case before the vessel's entry into the Regulatory Area, all fishing vessels authorised to fish in the Regulatory Area and notably whether the vessel is authorised to fish one or more of the regulated resources. Each Contracting Party is requested to notify any modifications to this information without delay.³⁷⁴

Each Contracting Party is required to implement a vessel monitoring system (VMS) for its fishing vessels exceeding 20 metres between perpendiculars or 24 metres overall length which fish, or plan to fish, in the Regulatory Area. The Contracting Party must require its fishing vessels, fishing in the Regulatory Area, to be equipped with an autonomous system capable of automatically transmitting messages to a land-based fisheries monitoring centre (FMC), thereby allowing a continuous tracking of the position of a fishing vessel by the Contracting Party of that fishing vessel.³⁷⁵ This system became operational on 1 January 2000.³⁷⁶

To this end, each party ensures that the satellite device enables a fishing vessel to communicate to the Contracting Party the following data:

1. The vessel identification
2. The most recent geographical position of the vessel with a position error of less than 500 metres and with a confidence interval of 99 percent
3. The date and time of the fixing of the said position of the vessel
4. Where applicable, data relating to the catch on board
5. Where applicable, data relating to transshipment³⁷⁷

³⁷² Id., Article 28(5).

³⁷³ Id.

³⁷⁴ Id., Article 5(1).

³⁷⁵ Id., Article 11(1 & 1.a).

³⁷⁶ Id. The FMC became operational with each Contracting Party providing for back-up and recovery procedures in the event of system failures.

³⁷⁷ Id., Article 11(1.b).

Moreover, each Contracting Party guarantees that the master of a fishing vessel flying its flag ensures that the satellite-tracking devices are at all times fully operational and that all the information is transmitted. In the event of a technical failure or non-operation of the satellite-tracking device fitted on board a fishing vessel, the device must be repaired or replaced within one month. After this period, the master of a fishing vessel is not authorised to commence a fishing trip with a defective satellite-tracking device. In case a device stops functioning and a fishing trip lasts more than one month, the repair or the replacement has to take place as soon as the vessel enters a port. The fishing vessel is not authorised to continue or commence a fishing trip without the satellite-tracking device having been repaired or replaced.³⁷⁸ Each Contracting Party also has to make sure that a fishing vessel with a defective satellite-tracking device communicates, at least daily, their reports by other means of communication (radio, fax, or telex).³⁷⁹

Contracting Parties, for the purpose of this scheme, cooperate with the Secretary in order to establish a database delimiting the Regulatory Area by latitude and longitude coordinates.³⁸⁰ This occurs without prejudice to each Contracting Party's position concerning the delimitation of sea areas under their sovereignty and jurisdiction.³⁸¹

NEAFC has set up a system for blacklisting flag of convenience IUU fishing vessels.³⁸² When vessels are observed in the area fishing without a valid licence, they are added to the 'A' list, i.e., a provisional list of IUU vessels.³⁸³ Enquiries are subsequently made into the reasons why these vessels were fishing without permission, and if there is no suitable explanation, the vessel is transferred permanently to NEAFC's 'B' list.³⁸⁴ Vessels can only be removed from this list by decision of the NEAFC Commission at its annual meeting. The listing system seems to be reaping its first rewards, with recent instances where

³⁷⁸ *Id.*, Article 11(3).

³⁷⁹ *Id.*, Article 11(4). In addition, Annex VIII, Section 5, notes the stipulated format for transmission of information.

³⁸⁰ *Id.*, Article 11(5).

³⁸¹ *Id.*

³⁸² This is known as the 'A' and 'B' listing system. According to the panel in the NEAFC Performance Report (n. 43 above), this is a significant change in combating IUU fishing in the Regulatory Area.

³⁸³ NEAFC Scheme, n. 214 above, Article 44(1).

³⁸⁴ *Id.*, Article 44(3). This list is available at NEAFC, "Management Measures Currently in Force," available: <<http://www.neafc.org/management/management-measures-currently-in-force.htm>> (retrieved 20 November 2008). This listing system was established in 2005 and has taken a stance in combating activities of IUU vessels. However, the degree of state control and the degree of cooperation between Contracting Parties and the Secretariat in this matter is yet to be clarified, as will be noted later on in this study.

listed vessels have been scrapped. This issue is discussed below under “Common/Similar Initiatives by NAFO and NEAFC.”

NEAFC has also adopted port state control measures. It has a special system in place to control the landings or transshipments of foreign vessels in ports of Contracting Parties. First, the Contracting Parties have to designate ports where such landings will be allowed.³⁸⁵ The master of a foreign vessel intending to call into such a port must notify the competent port authorities at least three working days in advance.³⁸⁶ The port state subsequently forwards this information to the flag state of the vessel.³⁸⁷ When the flag state confirms by return copy³⁸⁸ that the vessel in question had sufficient quota for the species declared, that the quantities of fish on board have been duly reported and considered in the calculation of any catch or effort limitations that may be applicable, that the vessel in question had authorisation to fish in the areas declared, and finally, that this information was verified according to VMS, the fish can be landed or transhipped.³⁸⁹

Strengths of the NEAFC System

Membership. The Convention lists individual parties eligible to participate in the Convention and the NEAFC Commission. Importantly, this list includes the EU. Any state not referred to in this list (Member States of the EU excepted) may accede to the Convention subject to the approval of three-fourths of all the Contracting Parties.³⁹⁰ In 2003, the NEAFC Commission adopted the Guidelines for the Expectation of States Considering Applying for Membership of NEAFC and Possible Fishing Opportunities in the NEAFC Regulatory Area.³⁹¹ According to these Guidelines, new entrants “should be aware fishing opportunities for new Contracting Parties will not be allocated on stocks already regulated.” Further, new entrants will only be entitled to allocations from unregulated stocks on the same basis as other Contracting Parties.³⁹²

³⁸⁵ NEAFC Scheme, n. 214 above, Article 21.

³⁸⁶ *Id.*, Article 22(1).

³⁸⁷ *Id.*, Article 22(3). This information is also forwarded to the flag state of the donor vessels where the vessel has engaged in transhipment operations.

³⁸⁸ *Id.*, Annex XV lays out the format of the port state control form.

³⁸⁹ *Id.*, Article 23(1–2).

³⁹⁰ The NEAFC Convention, n. 42 above, Article 20(4).

³⁹¹ The full text of these Guidelines is found in the NEAFC Performance Report, n. 43 above, Appendix XI, available also: <<http://www.neafc.org/becomingacp>> (retrieved 20 November 2008).

³⁹² NEAFC Performance Report, n. 43 above, Appendix XI, p. 91.

Three such applications have been made, of which two were rejected (Ukraine and Lithuania), and only one (Estonia), was accepted. The Performance Review Panel considered this process to be “appropriate.”³⁹³ However, others have stated that this is instead an incentive to engage in unregulated fishing.³⁹⁴

Scope. The NEAFC Commission may also adopt recommendations concerning fisheries conducted within the national jurisdiction of a Contracting Party, but only if the Contracting Party in question specifically requests and approves the recommendation.³⁹⁵

Cooperating Non-Contracting Parties. The Performance Review Panel was of the opinion that the criteria to become a Cooperating Non-Contracting Party are transparent, appropriate, and applied accordingly. In contrast to other RFMOs, NEAFC expressly foresees the possibility of granting cooperation quotas to Cooperating Non-Contracting Parties.³⁹⁶ Such quotas have been accorded in practice. According to the Recommendation for Conservation and Management Measures for Pelagic Redfish in the Irminger Sea and Adjacent Waters in the NEAFC Convention Area in 2008, 123 tonnes of redfish will be available to Cooperating Non-Contracting Parties, as was the case in 2007.³⁹⁷ Moreover, NEAFC has created opportunities for Cooperating Non-Contracting Parties to participate in the supply chain as the general prohibition to engage in transshipment or joint shipping operations, normally considered to be a serious infringement with vessels of Non-Contracting Parties, does not apply here. These vessels, when sighted in the Convention area, are not automatically presumed to be undermining NEAFC. The rules applicable to vessels of other non-Contracting Parties are distinguished by the rules applicable to Cooperating Non-Contracting Parties, hence the ‘A’ and ‘B’ list system.³⁹⁸

Non-Contracting Party Vessels. NEAFC has been an example for other RFMOs for the development of a scheme for Non-Contracting Party fishing vessels. A Non-Contracting Party vessel, which has been sighted engaging in fishing activities in the Regulatory Area, is presumed to be undermining the

³⁹³ Id., Section 3.5.2.1, p. 49. It was also noted that it is especially difficult to determine participatory rights due to extant overexploitation and full quotas in the Regulatory Area.

³⁹⁴ Lodge et al., n. 267 above, p. 17.

³⁹⁵ The NEAFC Convention, n. 42 above. Article 6(1).

³⁹⁶ For a more detailed analysis, see Owen, n. 278 above, pp. 107–113.

³⁹⁷ For a complete PDF copy of the Recommendations, see: *Recommendation for Conservation and Management Measures for Pelagic Redfish in the Irminger Sea and Adjacent Waters in the NEAFC Convention Area in 2008*, entry into force on 8 May 2008, available: <http://www.neafc.org/system/files/03-rec_seb_ment_irminger_postalvote+.pdf> (retrieved 20 November 2008).

³⁹⁸ NEAFC Performance Report, n. 43 above, Appendix XII clearly stipulates that vessels of Cooperating Contracting Parties shall not be placed on the IUU vessel list.

effectiveness of recommendations established under the Convention.³⁹⁹ In the case of any transshipment activities involving a sighted Non-Contracting Party vessel inside or outside the Regulatory Area, the presumption of undermining the effectiveness of recommendations established under the Convention applies to any other Non-Contracting Party vessel that has engaged in such activities with that vessel.⁴⁰⁰ Information regarding such sightings must be transmitted immediately to the Secretary.⁴⁰¹ The Secretary has to transmit this information to all Contracting Parties within one business day of receiving this information and to the flag state of the sighted vessel as soon as possible.⁴⁰² The Contracting Party which sighted the Non-Contracting Party vessel has to attempt to inform such a vessel that it has been sighted engaging in fishing activities in the Regulatory Area and is accordingly presumed to be undermining the recommendations established under the Convention and that this information will be distributed to all Contracting Parties and to the flag state of the vessel.⁴⁰³

In the event that any Non-Contracting Party vessel, which has been sighted and reported as engaged in fishing activities in the Regulatory Area, consents to be boarded by NEAFC inspectors, their findings are to be transmitted to the Secretary.⁴⁰⁴ The Secretary has the duty to transmit this information to all Contracting Parties within one business day of receiving this information and to the flag state of the boarded vessel as soon as possible.⁴⁰⁵ The Non-Contracting Party vessel that is boarded must be provided with a copy of the findings of the NEAFC inspectors.⁴⁰⁶

Port Inspections. Contracting Parties shall ensure that their vessels do not receive transshipments of fish from a Non-Contracting Party vessel that has been sighted fishing in the NEAFC area.⁴⁰⁷ When such a vessel enters a port of any Contracting Party, it shall be inspected by authorised Contracting Party officials knowledgeable about the recommendations established under the Convention.⁴⁰⁸ The vessel is not to be allowed to land or tranship any fish until

³⁹⁹ NEAFC Scheme, n. 214 above, Article 37(2).

⁴⁰⁰ *Id.*, Article 37(3).

⁴⁰¹ *Id.*, Article 37(1).

⁴⁰² *Id.*

⁴⁰³ *Id.*, Article 37(1 et seq.).

⁴⁰⁴ *Id.*, Article 38(1).

⁴⁰⁵ *Id.*, Article 37(1).

⁴⁰⁶ *Id.*

⁴⁰⁷ *Id.*, Article 41. Note, however, that this stipulation is preceded by the requirement to submit the Non-Contracting Party's vessels for inspection in the light of its presumed infringements in the Regulatory Area.

⁴⁰⁸ NEAFC Convention, n. 42 above, Article 7 lists a non-exhaustive list of measures applicable to fisheries in the Regulatory Area.

this inspection has taken place.⁴⁰⁹ Such inspections include the vessel's documents, log books,⁴¹⁰ fishing gear,⁴¹¹ catch on board,⁴¹² and any other matter relating to the vessel's activities in the Regulatory Area.

Landings and transshipments of all fish from a Non-Contracting Party vessel which has been inspected shall be prohibited in all Contracting Party ports if such inspection reveals that the vessel has on board species subject to recommendations established under the Convention. This is the procedure until it is established that the fish were caught outside the Regulatory Area or in compliance with all relevant recommendations established under the Convention.⁴¹³

Information on the results of all inspections of Non-Contracting Party vessels conducted in the ports of Contracting Parties, and subsequent action, have to be immediately transmitted through the Secretary to all Contracting Parties and as soon as possible to the relevant flag state(s).⁴¹⁴

Each Contracting Party annually reports to the Secretary by mid-September for the period 1 July to 30 June the number of inspections of Non-Contracting Party vessels it conducted under this Scheme in its ports, the names of the vessels inspected and their respective flag state, the dates and ports where the inspection was conducted, and the results of such inspections.⁴¹⁵

As a part of the existing comprehensive NEAFC Control and Enforcement Scheme, new measures have been adopted. A new measure, which entered into force on 1 May 2007, effectively closes Contracting Party ports to landings of frozen fish which have not been certified by the flag state of the vessel intending to land.⁴¹⁶ Additionally, the coastal state can also limit the number of ports where frozen fish is allowed to be landed in order to streamline these inspections.⁴¹⁷

Vessels without Nationality. Where there are reasonable grounds for suspecting that a vessel, which has been sighted engaging in fishing activities in the Regulatory Area, is without nationality, a NEAFC Contracting Party may

⁴⁰⁹ NEAFC Scheme, n. 214 above, Article 40(1).

⁴¹⁰ *Id.*, Annex IV stipulates the format for the logbook.

⁴¹¹ *Id.*

⁴¹² *Id.*, Annex XV also stipulates the format for recording catch on board. The port state control form may be used where Non-Contracting Party's vessels dock at a Contracting Party's dock for inspection.

⁴¹³ *Id.*, Article 41.

⁴¹⁴ *Id.*, Article 42(1). This is to establish if the non-Contracting Party's vessel has engaged in any IUU activity within the Regulatory Area.

⁴¹⁵ *Id.*, Article 43(1).

⁴¹⁶ *Id.*, Article 20.

⁴¹⁷ *Id.*, Article 21.

also board and inspect the vessel.⁴¹⁸ Where evidence warrants, a NEAFC Contracting Party may take such action as may be appropriate in accordance with international law.⁴¹⁹ Contracting Parties are encouraged to examine the appropriateness of domestic measures to exercise jurisdiction over such vessels.⁴²⁰

Review of performance. NEAFC has recently undergone a review of its performance.⁴²¹ In 2006, a panel consisting of internal NEAFC representatives and external experts submitted its final report, which was discussed by the organisation at a special meeting in 2007. This clearly constitutes a recommended best practice in the management of the Regulatory Area.⁴²²

Weaknesses of the NEAFC System

Objection Procedure. Any Contracting Party may object to a recommendation within 50 days of the date of notification of that recommendation.⁴²³ In the event of such an objection, any other Contracting Party may similarly object within 40 days after receiving notification of that objection.⁴²⁴ If any objection is made within this further period of 40 days, other Contracting Parties are allowed a final period of 40 days after receiving notification of that objection in which to lodge objections.⁴²⁵ A recommendation does not become binding on a Contracting Party that has objected thereto.⁴²⁶ If three or more Contracting Parties have objected to a recommendation, it will not become binding on any Contracting Party.⁴²⁷ Except when a recommendation is not binding on any Contracting Party, a Contracting Party which has objected to a recommendation

⁴¹⁸ *Id.*, Article 1(g) defines a Non-Contracting Party vessel as one not only flagged in a Non-Contracting Party, but also a vessel suspected to be without nationality. The rules that apply to Non-Contracting Party vessels also apply to vessels without nationality.

⁴¹⁹ *Id.*, Article 38(1).

⁴²⁰ *Id.*

⁴²¹ NEAFC Convention, n. 42 above, Article 4(2) notes that the Commission shall provide a forum of consultation and exchange of information on the state of the fisheries resources in the Regulatory Area, the management policies in place, and an examination of the overall effect of such policies, hence the performance review panel. In addition, Article 14(3) adds that the Commission, in the interest of its functions as set out in Articles 4, 5 and 6, may establish working arrangements aimed at improving its activities in the Regulatory Area.

⁴²² Lodge et al., n. 267 above, p. 115.

⁴²³ This stipulation, as discussed in the NEAFC Performance Report, n. 43 above, Section 3.4.2, is an Article 12(2.a) stipulation of the NEAFC Convention, n. 42 above.

⁴²⁴ NEAFC Convention, n. 42 above, Article 12(2.a).

⁴²⁵ *Id.*

⁴²⁶ *Id.*

⁴²⁷ *Id.*, Article 12(2.c).

may at any time withdraw that objection. It then becomes bound by the recommendation within 70 days, or as from the date determined by the NEAFC Commission, whichever is the later.⁴²⁸ If a recommendation is not binding on any Contracting Party, two or more Contracting Parties may nevertheless at any time agree among themselves to give effect thereto. In this event, they must immediately notify the NEAFC Commission accordingly.⁴²⁹ The use of such an objection procedure could well undermine the conservation of the resource.⁴³⁰

Formal Absence of Dispute Settlement Procedure. In 2004, an amendment was proposed concerning a dispute settlement procedure whereby states would be obliged to explain their reasons for using the objection procedure. Even though these amendments were adopted in 2005, they have not yet entered into force.⁴³¹

Lack of Convention Basis for Non-Contracting Parties Rights and Obligations. The “new” 2007 Convention does not intend to enumerate the rights and obligations of non-Contracting Parties. At present, these rights are scattered throughout the NEAFC Scheme,⁴³² the Non-Contracting Parties Scheme,⁴³³ and the 2003 Guidelines for the Expectation of Future New Contracting Parties with Regard to Fishing Opportunities in the NEAFC Regulatory Area.⁴³⁴ All of these measures are without a Convention basis.

Vessel Monitoring System. Even though the database of the vessel monitoring system is quite innovative and forms an essential element in the NEAFC monitoring scheme, the Performance Review Panel is of the opinion that the quality of the information deserves enhanced control and that the use of this state of the art technology by NEAFC is underutilised.⁴³⁵

Inspections. The Performance Review Panel noted that one Contracting Party was obviously not participating in the system since it had so far not deployed inspectors or inspection vessels in the Regulatory Area, even though

⁴²⁸ Id., Article 12(2.d).

⁴²⁹ Id., Article 12(2.e).

⁴³⁰ NEAFC Performance Report, n. 43 above, Section 3.4.2, which notes that this weakness has prevented the establishment of management measures for redfish and mackerel by Contracting Parties.

⁴³¹ Id., Section 3.4.4, p. 46.

⁴³² NEAFC Scheme, n. 214 above.

⁴³³ Id., Chapter VII.

⁴³⁴ See n. 391 above and accompanying text.

⁴³⁵ NEAFC Performance Report, n. 43 above, Section 3.3.12.1, p. 39 especially, notes the ongoing issue of quality control in terms of collating information to determine similarities between donors and receiver vessels' reports. See also Section 4.3, p. 56.

it is so required under the Convention system.⁴³⁶

Implementation of the 1993 FAO Compliance Agreement

The preamble of the “new” 2007 Convention explicitly “recognises” the 1993 FAO Compliance Agreement.⁴³⁷ NEAFC inspectors remain under the operational control of the authorities of their Contracting Parties. However, they have the powers of inspection, seizure and search, as defined in the NEAFC Scheme of Joint International Inspection, as well as surveillance implementation under the 1993 FAO Compliance Agreement.⁴³⁸

In determining the extent to which Contracting Parties recognise the Compliance Agreement, the current NEAFC Scheme enjoins Contracting Parties to ensure that stated measures to be taken, whether administrative action or criminal proceedings, are in conformity with the Contracting Party’s national law against the natural or legal persons responsible where there has been a derogation from NEAFC measures.⁴³⁹ The measures taken are to be in accordance with the relevant provisions of national law, be capable of effectively depriving the beneficiaries of any economic benefit, or provide sanctions proportionate to the seriousness of such infringements, thus discouraging future infringements.⁴⁴⁰

High seas fishing vessels have to report their catches in the NEAFC area. Each entry and exit has to be reported. These reports are inspected by the observers and by port inspectors.⁴⁴¹ NEAFC also includes high seas conservation and management measures with a stated objective of NEAFC performing its functions in the interests of the conservation and optimum utilisation of the fishery resources of the convention area.⁴⁴² All vessels

⁴³⁶ Id., Section 3.3.12.1, p. 39. The Panel recommended that where a party has more than ten fishing vessels engaged in fishing in the Regulatory Area, it should have an inspection vessel or jointly cooperate with another Contracting Party for inspection purposes.

⁴³⁷ This 2007 “New” NEAFC Convention (n. 42 above) is novel in that it adopts the amendments to the convention as agreed during the 24th annual meeting of the NEAFC in 2005. These amendments serve to bring the NEAFC Convention in line with the 1993 FAO Compliance Agreement and the 1995 UN Fish Stocks Agreement. See also n. 42 above.

⁴³⁸ “New” NEAFC Convention, n. 42 above, in its preamble, not only recognises the 1993 FAO Compliance Agreement (see n. 97 above and), but also “takes into account” the FAO Code of Conduct for Responsible Fisheries (a already mentioned, n. 36 above).

⁴³⁹ NEAFC Scheme, n. 214 above, Article 31(1).

⁴⁴⁰ Id., Article 31(2).

⁴⁴¹ Id., Chapters III–V.

⁴⁴² See n. 320 above, and accompanying text as well as the “New” NEAFC 2007 Convention, n. 42 above, Article 2. This is the Regulatory Area, in which, according to the NEAFC Scheme,

operating in the NEAFC area have to register with the Secretary.⁴⁴³ The NEAFC Scheme consists of new technologies in fisheries monitoring, and establishes control measures, rules on reporting IUU activities, as well as port state control measures. These features are designed to ensure adequate high sea fisheries management as called for under the 1993 FAO Compliance Agreement.

When a vessel has been sighted committing an infringement, the flag state is informed. The appropriate authorities of the Contracting Party are notified of the infringement committed by the fishing vessel and have to take prompt action to receive and consider the evidence of the infringement.⁴⁴⁴ The Performance Review Panel concluded that the NEAFC “Contracting Parties largely fulfil their duties as Flag States.”⁴⁴⁵

Implementation of the 1995 UN Fish Stocks Agreement

As with the 1993 FAO Compliance Agreement, the preamble of the “new” NEAFC Convention explicitly “recognises” the 1995 UN Fish Stocks Agreement.⁴⁴⁶

The Contracting Parties agree to maintain in force and to implement within the Regulatory Area the NEAFC Scheme. The latter includes provisions for reciprocal rights of boarding and inspection by the Contracting Parties⁴⁴⁷ and for flag state prosecution and sanctions on the basis of evidence resulting from such boarding and inspection.⁴⁴⁸ A report of such prosecutions and sanctions imposed shall be included in an annual statement regarding the actions that were taken during the preceding year.⁴⁴⁹

n. 214 above, Article 1(b) lies beyond the waters under the fisheries jurisdiction of the Contracting Parties.

⁴⁴³ NEAFC Scheme, n. 214 above, Article 5(1) notes that the Secretary is notified of fishing vessels on an annual basis. Furthermore Annex II lists the authorised vessels, main gear types and the format for registration.

⁴⁴⁴ *Id.*, Article 28(4).

⁴⁴⁵ NEAFC Performance Report, n. 43 above, Section 3.3.10.1, p. 38.

⁴⁴⁶ “New” NEAFC Convention, n. 42 above, Preamble.

⁴⁴⁷ NEAFC Scheme, n. 214 above, Article 18(11). Article 46(1) states the provisions in relation to Contracting Parties. They may jointly request the cooperation of Non-Contracting Parties’ vessels in achieving the goals of the NEAFC Scheme. Article 16(5) also states that the means of inspection may be operated jointly between Contracting Parties.

⁴⁴⁸ NEAFC Convention, n. 42 above, Article 15(1). See also NEAFC Scheme, n. 214 above, Article 31(2).

⁴⁴⁹ NEAFC Convention, n. 42 above, Article 15(2). See also its application in the NEAFC Scheme, n. 214 above, Article 31(1 & 2). See also n. 331 above. This falls within the purview

As regards Non-Contracting Parties, the Contracting Parties agree to bring to the attention of any Non-Contracting Party any matter relating to the fishing activities in the Regulatory Area of the nationals or vessels of that state that appear to affect adversely the attainment of the objectives of the Convention.⁴⁵⁰ The Contracting Parties further agree to confer, when necessary, in order to assess steps to be taken towards obviating such adverse effects. NEAFC adopted a scheme to promote compliance by Non-Contracting Party vessels with the conservation and enforcement measures established by the NEAFC.⁴⁵¹ Further, when a non-Contracting Party vessel, which has been sighted and reported as engaged in fishing, enters a port of any NEAFC Contracting Party, it shall be inspected by authorised Contracting Party officials.⁴⁵²

NEAFC aims to make its information and decision making processes accessible for Contracting Parties and observers. Observers were only allowed to attend meetings in 2001. However, the Performance Review Panel noted that discussions on allocations are often not open to all Contracting Parties and observers. It stressed the need for improvement in ensuring transparency between participating coastal states in quota allocation and management measures.⁴⁵³ In addition, the current lack of access to information by NGOs should be reversed, especially prior to NEAFC Commission meetings.

10.4.5.3. Common/Similar Initiatives by NAFO and NEAFC

A recent noteworthy positive development is that both NAFO and NEAFC have tried, albeit not concurrently, to pay very close attention to the achievements of the other. Several examples are provided *viz.*

Since 2002 both organisations have been cooperating with respect to the management of pelagic redfish in the Irminger Sea, a straddling fish stock between the two convention areas. NEAFC receives the scientific advice and establishes the management measures, including the allocation of the total allowable catch in the NAFO area. For control purposes, however, catches are

of the Secretary's duties and must also specifically detail the current status of the case and/or the sanction or prosecution imposed for infringements.

⁴⁵⁰ NEAFC Scheme, n. 214 above, Article 34. Also in explaining the status of Cooperating Non-Contracting Parties, it was stated that the rules for reporting vessels, catch, and effort data, as well as monitoring and surveillance, apply in management of their activities.

⁴⁵¹ *Id.*, Articles 34–36.

⁴⁵² *Id.*, Article 40(1).

⁴⁵³ NEAFC Performance Report, n. 43 above, Section 4.5, p. 56.

reported to both the NAFO Fisheries and NEAFC Commissions.⁴⁵⁴

Additionally, NAFO and NEAFC have recently joined forces to establish an overarching North Atlantic list of IUU vessels. Vessels on the list of IUU vessels of the NEAFC are automatically transferred to the NAFO list and vice versa. The underlying rationale is that because both Regulatory Areas are adjacent, there are straddling stocks in their respective Regulatory Areas and as IUU fishing is a global phenomenon, the vessels listed under one convention system are presumed to be engaged in IUU fishing activities in the Regulatory Area of the other.⁴⁵⁵ NEAFC Recommendation XI of 2008 expands this kind of cooperation to CCAMLR and South-East Atlantic Fisheries Organisation (SEAFO). Further, the Recommendation adds that delisting is only possible if the organisation originally listing the vessel decides to do so.⁴⁵⁶ Thus, as noted by the NEAFC Performance Report, NEAFC could well serve as a useful reference to other RFMOs in this respect as it demonstrates a positive development in fisheries management.⁴⁵⁷

A third, more recent example of common initiatives, is NAFO's newly adopted port state control scheme, which was inspired by NEAFC practice in the Regulatory Area. NAFO's former port state control provisions required vessels that had been fishing for stocks subject to conservation and enforcement measures to call in the port of a Contracting Party to be inspected when offloading their catch. Even though the interference of the inspectors in the offloading activity was minimal, the quality of the catch had to remain unaffected, but this was compromised by the fact that such inspections took time. The ensuing reports were then forwarded to the port state, upon request, and to the Executive Secretary. A 2007 discussion paper proposed an amendment and, after many adaptations, was finally adopted at the thirtieth annual meeting of the NAFO Fisheries Commission in late September 2008. The new system very much resembles the successful port state control system adopted by NEAFC a year earlier. It is based on the following measures: the master has to present prior notification to the port state, which is forwarded to the flag state. No authorisation to land or tranship the cargo in port will be

⁴⁵⁴ Lodge et al., n. 267 above, p. 18.

⁴⁵⁵ NEAFC Scheme, n. 214 above, Article 44(5). Article 44(5) states that the Secretariat shall transmit the IUU 'B' list and any amendments thereto, as well as other relevant information, to NAFO. Also Article 44(6) notes that NAFO lists of vessels engaging in IUU activities will be automatically entered into the NEAFC 'B' list.

⁴⁵⁶ Id., Article 44(5 & 6). See also A. K. Sydnes, "Regional Fishery Organizations: How and Why Organizational Diversity Matters," *Ocean Development and International Law* 32 (2001): 349–372, for a general overview of CCAMLR, SEAFO, and other RFMOs in fisheries management.

⁴⁵⁷ NEAFC Performance Report, n. 43 above, Section 3.3.13.1, p. 41.

granted without the flag state of the Non-Contracting Party vessel confirming the legal status of the catch.⁴⁵⁸ All the documents involved are posted on the secure part of the NAFO website.⁴⁵⁹ The scheme even moves beyond the port state measures which are presently being developed in FAO on some points. The objective of the drafters of these new NAFO provisions on port state control was clearly to reflect as closely as possible the port state control mechanism of NEAFC.

10.5. Conclusion

While Canada and the EU are well known for sparring over fisheries interests and allocations in the NAFO Regulatory Area, Canada and the EU have displayed considerable cooperation since the famous *Estai* incident. Both have played substantial roles in achieving modernization amendments to reflect the ecosystem and precautionary approaches in regional fisheries management agreements. Both have cooperated in enhancing regional compliance and enforcement arrangements in NAFO.

Canada and the EU continue to face four major challenges in regional fisheries management. Putting the precautionary approach into practice has been problematic with quotas for some stocks set above precautionary scientific advice or without precautionary reference points. Implementing the ecosystem approach might be described as “just leaving port” with still very limited scientific understandings of marine ecosystems and limited protections given to vulnerable marine ecosystems. Reaching consensus on allocation criteria for shared fish stocks continues to be a thorny issue in both NAFO and NEAFC. Achieving effective compliance and enforcement remains a challenge with various constraining realities including exclusive flag state jurisdiction to prosecute regulatory offences beyond national maritime zones and the slow entry into force of dispute settlement procedures.

Clearly Canada and the EU have not reached an end point in strengthening cooperation within regional fisheries management. Various questions remain to be traversed:

- Should scientific advice be subject to political override?
- How might the role of scientific advice be strengthened within RFMOs?
- How might the ecosystem approach be bolstered at the regional level?

⁴⁵⁸ NAFO C&E Measures, n. 48 above, Article 49(1).

⁴⁵⁹ *Id.*, Article 51(1).

- What initiatives, if any, should be considered for further crystallising fisheries allocation criteria?
- Should the closer cooperation between NAFO and NEAFC be extended to other RFMOs?
- How much reliance on state of the art information technology is desirable?
- Should the fundamental changes in the compliance and enforcement strategies of RFMOs be reflected in their conventions?
- How might cooperation with non co-operating non-Contracting Parties be enhanced?

Workshop Discussion Summary

Ocean Resources

Susan Rolston

Maria Pettersson, Department of Social Science, Luleå University of Technology (for Freedom-Kai Phillips, Dalhousie University), and Meinhard Doelle, Marine & Environmental Law Institute, Dalhousie University, presented papers offering perspectives on ocean renewable energy in the EU and Canada respectively. Jerome Davis, Department of Political Science, Dalhousie University (with Timo Koivurova and Kamrul Hossain, Arctic Centre, University of Lapland), presented their paper using the Melville Island Project in the Sverdrup Basin in the Canadian Arctic as an example of the potential for development and diversification of natural gas resources in the EU.

Following the paper presentations, Giordano Rigon, DG Energy and Transport, European Commission, commented upon EU energy policy. At present, the Council has endorsed an energy policy that calls for a 20% reduction of greenhouse gas emissions, a 20% increase in energy efficiency, and a 20% increase in renewable sources by 2020. The continued reliance on oil and gas resources means that both diversification of supply and indigenous resource development are critical. Arctic resource development, particularly those within 200 nautical miles of the coast, with appropriate environmental protection standards, is a particularly important source to consider. Renewable energy resources, particularly tidal and wave, in offshore marine areas must be developed in tandem with maritime policy to ensure adequate environmental protection and integrated economic development.

Much of the discussion focussed on the moral argument that states should not invest or develop Arctic oil and gas resources because of the environmental costs (climate change) of their exploitation and use. It was noted, however, that the Melville Island Project would provide relatively inexpensive natural gas compared to other projects elsewhere and that there is limited environmental impact in transporting LNG as the carriers use natural gas for propulsion and would not cause oil pollution in the event of an accident. It was also noted that there is an equity question that must be considered as the relatively poor coastal communities in the Arctic are looking to exploit these resources to develop economically. In some cases, Arctic coastal residents see climate change as opening new opportunities for their communities. Regulations developed under

OSPAR might serve as a model for development of Arctic offshore oil and gas resources.

At the Workshop, a fifth session included papers on marine biodiversity and fisheries issues. David VanderZwaag, Marine & Environmental Law Institute, Dalhousie University, Canada, and Erik Franckx, Department of International and European Law, Vrije Universiteit Brussel presented the joint paper on Canada, the EU and Regional Fisheries Management in the North Atlantic (with Koen van den Bossche, Centre for International Law, Vrije Universiteit Brussel).

Discussion following the fisheries presentations focussed on the role of science in fisheries management and comparisons between managing shipping and fisheries. With regard to science, it was suggested that fishers often mistrust the scientific advice provided by fisheries managers, arguing that scientists use measurement tools inappropriately. It was noted that in The Netherlands, fishers are placed aboard marine research vessels, enhancing the fishers' acceptance of the data. NAFO has adopted an interim exploratory fisheries protocol that involves the fishing industry in the identification process of vulnerable marine ecosystems, e.g., corals. Other collaborative processes between fishers and managers include among others the Eastern Scotian Shelf Integrated Management Process (ESSIM) and other large ocean management area processes in Canada.

In comparing the shipping and fisheries management regimes it was noted that the outcome based management regime (shipping) was generally more successful than the input/output model used for fisheries management. The fisheries management regime reflected the primacy that social and economic pressures place on managers in the international (FAO), national and regional (RFMOs) spheres. An exhaustible resource (unlike shipping), fishers will shift practices (e.g., opting for flags of convenience) in order to maintain fishing effort despite measures put in place by national governments (flag state measures). Unlike shipping, there are no enforcement measures against fishing vessels (e.g., liens on vessels), only measures directed to managing the fishing activity. Measures such as the FAO Compliance Agreement are directed to the flag state, but states are not joining, thus it is seen as ineffective.

Technologies for monitoring ships on the high seas (e.g., long range satellite tracking systems) are difficult to translate into monitoring of fishing activity as the mere presence of a fishing vessel is not sufficient information for managing fishing activity. Generally much more frequent reporting would be required to determine fishing activity patterns, particularly on the high seas. Such technologies often do not work well in the poor sea and weather conditions that fishing vessels regularly work in. Private/public air surveillance programmes such as those in place in Canada might be a cost effective

alternative for fisheries, shipping and environmental surveillance patrols. Both NAFO and NEAFC have cooperated in enforcement and compliance initiatives, and the tuna RFMOs have had some success in managing their stocks. A black listing system (i.e., IUU vessels as well as transshipment and resupply vessels) has been efficient in closing ports to flag states that do not respond to RFMO management initiatives. FAO has identified criteria against flag states that do not enforce their flag duties. Some states, e.g., Norway, have developed their own black lists for “non-cooperating” states; the EU is expected to adopt such a measure in the future.

Finally, the EU and the RFMO review processes were discussed with the complication of needing Member State agreement on fisheries policy being noted. The EU fisheries policy will be reviewed in 2009.

Erik Molenaar, Netherlands Institute for the Law of the Sea, Utrecht University, and Phillip Saunders, Marine & Environmental Law Institute, Dalhousie University, made a joint presentation on governance of marine biodiversity in areas beyond national jurisdiction.

Following the presentations, G ael de Rotalier, DG Maritime Affairs and Fisheries, European Commission, spoke on the work the EU is undertaking in the framework of the Convention on Biological Diversity (CBD) and the UN General Assembly Biodiversity in Areas Beyond National Jurisdiction Working Group. Credible measures need to be put in place to protect high seas biodiversity and planning, governance and legal issues need to be settled. The EU is calling for a new international agreement to operationalise biodiversity conservation and sustainable use in areas beyond national jurisdiction using the ecosystem and precautionary principles as default mechanisms. With regard to marine protected areas, criteria for the identification of areas that need to be protected have to be developed as must the applicable measures to be taken by competent organisations (e.g., IMO, RFMOs). The EU proposal has not been well received by many states, suggesting that high seas biodiversity is best protected through measures adopted through RFMOs (regarding fisheries) and the IMO (regarding shipping). Developing countries are particularly interested in genetic resources in areas beyond national jurisdiction, regarding them as part of the common heritage of humankind. Canada and the EU have had limited discussions on this matter. The EU has called for immediate action to promote an integrated approach in existing agreements and within the CBD.

Discussion following the presentations and commentary focussed on opportunities for further regime building, particularly outcome-based approaches useful for areas beyond national jurisdiction (e.g., targets for marine protected areas). Compliance must also be considered in any new regime, particularly the control of extractive industries, as well as the integration of new science findings into any new legal instrument in a timely manner.

The opportunity for managing biodiversity through regulation of companies under national laws was seen as being limited to intellectual property aspects. It was suggested, however, that challenges remain in determining the boundaries between the international law of the sea (i.e., UN Law of the Sea Convention) and the international law relating to patents and intellectual property. Determining why companies would be interested in working in areas beyond national jurisdiction was also raised as opportunities in the area are generally considered to be speculative although they are perceived as being economically valuable. Any new integrated ocean management regime must deal with bioprospecting for marine genetic resources. Given the lack of a responsible international organization, there was general discussion about prospects for moving the issue under an existing organization (e.g., International Seabed Authority). However many states (e.g., the United States) are not interested in new institutions; regional management organizations might be a more appropriate mechanism (e.g., CCAMLR or UNEP Regional Seas models). Despite the perceived need for sectoral implementation of measures, it was suggested that there is a need for an overarching international instrument that was negotiated with the full participation of developing states.

Part III

Maritime Security Issues

Chapter 11

The Challenge of Maritime Security against Terrorism: A Dialogue Between the European Union and Canada

Kamrul Hossain, Hugh M. Kindred, and Mary R. Brooks

11.1. Introduction

For centuries the principal threat to maritime security has been piracy at sea. Its suppression has been the object of customary international law throughout the history of maritime navigation. The law against piracy was eventually codified first in the 1958 Convention on the High Seas,¹ and subsequently in the United Nations Convention on the Law of the Sea in 1982 (LOS Convention).² However, the concept of piracy was narrowly defined³—in general as attacks on ships at sea from other vessels for the private gain of the pirates—despite the fact that it was declared a universal crime under both conventions.

Today, maritime security involves a broader concept of piracy at sea as well as many other threats to marine navigation. Maritime security risks now also include drug smuggling, human trafficking and threats to marine bio-security, such as the introduction of alien diseases and organisms. Amongst the wide range of threats, terrorism against shipping has become a primary concern, especially since 11 September 2001. Unlike traditional pirates (who are still an active security risk), the perpetrators of terrorist attacks on shipping do not necessarily operate from vessels other than the ships they are attacking. Indeed, their attacks may be to use the targeted ship as the means to deliver a bomb to their selected destination or to employ the ship itself as a weapon. Most important, the perpetrators may not necessarily act with a view to any personal gain for themselves.

The expanded range of security threats poses serious risks to the safety of the ships, the ports they sail to, and the persons aboard them, as well as added danger to the cargoes they are carrying. After the terrorist attacks of

¹ *Convention on the High Seas*, 450 U.N.T.S. 82, Articles 15–22.

² *United Nations Convention on the Law of the Sea*, U.N. Doc. A/CONF.62/122, (1982) 2 *I.L.M.* 1261 [hereinafter LOS Convention], Articles 100–107.

³ See Z. Keyuan, “Implementing the United Nations Convention on the Law of the Sea in East Asia: Issues and Trends,” *Singapore Year Book of International Law* 9 (2005):1–17, p. 8.

11 September 2001, the global perception of these threats led the international community to consider ways to combat them. As a result, new instruments and rules have been developed, not necessarily to replace the existing law but rather to supplement it and make it more suitable and effective in the new circumstances. These developments at the international level are ongoing and, moreover, require action at a national level to implement them. In this process, at both the multilateral and the regional/national levels, the European Union (EU) and Canada have been active. Their participation internationally and their law and policy making individually are the subject of this contribution, in which a comparative analysis will be made of their attempts to address the common problems of maritime terrorism.

The current regulatory response to the worldwide threat of maritime terrorism is a multilateral platform developed primarily from 2001 through 2005 by the complementary efforts of several international organisations operating in different global sectors. The backbone of this platform is the International Ship and Port Facility Security (ISPS) Code⁴ promulgated by the International Maritime Organisation (IMO). The preventive measures of this Code are backed up by new penal proscriptions and penalties that IMO added to an amended convention to suppress criminal acts against world shipping. The ISPS Code to promote the security of ships and ports is also supported by a variety of protective measures taken by the World Customs Organization (WCO) towards cargoes, the International Labour Organization (ILO) regarding seafarers and the International Organization for Standardization (ISO) respecting freight containers.

In addition to these multilateral initiatives, some countries have taken significant unilateral steps to protect their trade and shipping through national legislation and regulations. One of these is the United States (US), which has legislated a number of regulatory requirements with both domestic and international effect. Some of these measures, especially those mandated by the *Maritime Transportation Security Act 2002*⁵ (MTSA) and the *Security and Accountability for Every Port Act 2006*⁶ (SAFE Port Act), exceed the

⁴ International Maritime Organization (IMO), Amendments to the Annex to the International Convention for the Safety of Life at Sea, 1974 [SOLAS] made by the Conference of Contracting Governments in Resolution 1, Annex Art.7 which inserted a new Chapter XI-2 on Special Measures to Enhance Maritime Security [SOLAS Annex XI-2], which, in turn, imported the ISPS Code adopted by Resolution 2, 12 December 2002 (in force 1 July 2004), SOLAS/CONF.5/31.

⁵ *Maritime Transportation Security Act*, 2002, Pub. L. No. 107-295, 116 Stat. 2064 (codified at 46 USC§2101) [hereinafter MTSA].

⁶ *Security and Accountability for Every Port Act*, 2006, Pub. L. No. 109-347, 120 Stat. 1884 (codified at 46 USC§901) [hereinafter SAFE Port Act].

regulatory demands of the multilateral platform. Given the major role the United States plays in world trade and shipping, the extra-territorial effects of its national security regulations add another dimension to the international regime.

Both the EU and Canada have had to respond to these maritime security developments. Each, in fact, participated in the preparation and implementation of the multilateral platform of maritime security, although by differing means and extent of application. In addition, both have had to react to the extra demands of American authorities in pursuit of their national requirements on any trade to US destinations. Hence, this chapter will first briefly explore the current international maritime security regime before, second, examining the extent of its implementation by EU and Canada. Third, the chapter will investigate how the EU and Canada are individually pursuing port and shipping security beyond the present multilateral platform, taking into account their cooperative arrangements with the United States. Finally, the chapter will engage in a dialogue comparing the similarities and differences in the approaches of the EU and Canada in order to understand if there are opportunities for strengthening maritime security.

11.2. Current Maritime Security Regime

11.2.1. The Multilateral Platform

The centrepiece of the multilateral regime of maritime security is the ISPS Code, which was promulgated by IMO in 2002 and brought into force nearly universally on 1 July 2004. Although this Code provides a highly comprehensive platform for the security of merchant ships and the marine facilities at which they call, it does not operate as a complete regime for lack of attention to the seafarers who work them, the freight containers they move and to the cargoes they carry in international trade. Other international organisations with sectoral responsibilities for these activities have also taken steps to bolster security measures. Thus the multilateral platform of marine security currently comprises rules and guidelines established by IMO, WCO, ILO and ISO, as will now be explored.

11.2.1.1. ISPS Code for Ships and Ports

The tragic events of 11 September 2001 transformed the international security situation into a much more comprehensive set of problems. In respect of maritime security, it was quickly realised that a ship itself can be used as an instrument or a threat of terrorist activities; the mere prevention of potential attacks against ships, persons and property at sea is, therefore, not sufficient. In effect, the international community recognised that terrorism at sea, from whatever motives, poses a serious threat not only to the international trade and transport system but also to the security of international society as a whole. Hence, the Maritime Safety Committee of IMO gave urgent consideration to the need for new practical measures to safeguard the world's ships, ports, offshore terminals, and other marine facilities against threats from terrorist attacks. The Committee determined that the risks to shipping required a regulatory regime covering both ships and the ports they visit.⁷ As a result, the ISPS Code was developed, and given international legal force by incorporation in the International Convention on the Safety of Life at Sea, 1974 (SOLAS) under Chapter XI.⁸ As Chapter XI previously covered ship safety and security, it was split by the introduction of these amendments into two new chapters—Chapter XI-1 and Chapter XI-2—the former including special measures to enhance maritime safety while the latter provides special measures to enhance maritime security. The ISPS Code itself is found in Chapter XI-2.

There are two parts in the ISPS Code. Part A covers mandatory requirements for maritime security measures while Part B provides guidelines on how those requirements could be met. Although Part B is not mandatory, some national governments have chosen to make it compulsory.⁹

In addition to addressing international maritime security concerns about terrorism, the Code establishes clear and identifiable roles and responsibilities, and provides a platform for the collection and exchange of security intelligence. Overall, the Code is designed to improve security as it recognises that the ship/port interface is a vulnerable node in the transport system. The Code

⁷ See T. A. Mensah, "The Place of the ISPS Code in the Legal International Regime for the Security of International Shipping," *WMU Journal of Maritime Affairs* 3 (2003): 17–30, p. 24.

⁸ IMO, n. 4 above. See also: International Maritime Organization (IMO), "IMO Adopts Comprehensive Maritime Security Measures," (2002), available: <http://www.imo.org/Newsroom/mainframe.asp?topic_id=583&doc_id=2689> (retrieved 3 December 2008), "International Ship & Port Facility Code (ISPS) What it is exactly – and what is it meant to do," available: <<http://www.iaasp.net/2003%20PDF's/ISPS%20Code.pdf>> (retrieved 4 December 2008) and "ISPS Code for ITIC Members," available: <http://www.itic-insure.com/downloads/publications/isps_code/ISPS_background_info.doc> (retrieved 4 December 2008).

⁹ See "ISPS Code for ITIC Members," n. 8 above.

provides both “identity” and “transparency” to the players in the international shipping network.¹⁰ Contracting governments, as part of their overall maritime security risk management programmes, establish designated authorities within government to fulfil their security responsibilities under the Code but may also delegate the undertaking of certain of the responsibilities to non-governmental Recognised Security Organisations.

Under the ISPS Code, there are three designated levels of security—Normal (Level 1), Increased (Level 2), and High (Level 3). Level 1 assumes a normal situation and requires the implementation of minimum security measures. Level 2 indicates that there is a heightened risk of a security incident requiring enhanced security measures, and Level 3 signals that there is a probable or imminent risk of a security incident. The contracting government has the right to decide the extent and application of Part A of the Code to a port facility within its territory that is only occasionally required to serve ships arriving or departing on an international voyage.¹¹ Paragraph 5 of Part B of the Code requires a Declaration of Security (DOS) to be issued when the contracting government of the port facility or the ship deems it necessary. It is expected that a DOS will be necessary when an arriving ship has a different security level (for example 3) than the port at which it will call (which may have a 2).¹²

The Code applies to ships engaged on international voyages and all port facilities that serve the ship for such voyages. Ships subject to the ISPS Code are passenger ships (including high speed passenger craft); cargo ships (including high speed craft) of 500 gross tonnes or more; and mobile offshore drilling units. By 1 July 2004, the date on which the ISPS Code became operative, every shipping company had to obtain an International Ship Security Certificate (ISSC) from an authorised shipping society. A ship lacking a valid ISSC would, by definition, be in violation of ISPS Code requirements.¹³ Furthermore, every ship subject to the ISPS Code must have installed a Ship Security Alert System, which is a covert alarm that alerts authorities ashore.

By itself, a legal regime cannot physically prevent acts of terrorism against ships or port facilities.¹⁴ Co-operative action is necessary and that, it was recognised, must involve not only governments and shipowners but also all

¹⁰ Mensah, n. 7 above, p. 26.

¹¹ SOLAS Annex XI-w, n. 4 above, Part A, paragraph 3.2.

¹² Mensah, n. 7 above, p. 26.

¹³ See “Establishment of U.S. Antiterrorism Maritime Transportation System,” *American Journal of International Law* 98 (2004): 588–590, p. 589. See also Germanischer Lloyd AG, “Information on ISPS Code Certification,” (2004), available: <<http://www.tis-gdv.de/tis/tagungen/workshop/2004/egggers2.pdf>> (retrieved 5 December 2008), p. 5.

¹⁴ Mensah, n. 7 above, p. 29.

other persons and entities that play a role in trade by sea. The ISPS Code mandates such cooperation. The Code provides an integrated mechanism for promoting and enhancing overall maritime security, which, in turn, ensures the effective implementation of the SOLAS Convention as well as other international and national rules and regulations for preventing unlawful acts against or involving ships.¹⁵

11.2.1.2. SUA Convention against Maritime Terrorists

As a complement to the prevention of terrorism against ships and ports under the ISPS Code, the IMO also addressed the prohibition of maritime terrorism. In 1985, after the *Achille Lauro* incident,¹⁶ both IMO and the General Assembly of the United Nations adopted resolutions calling for measures against acts that threaten the safety of ships and the security of the ships' crew and passengers.¹⁷ In response, the IMO took the initiative to prepare and conclude the 1988 Convention for the Suppression of Unlawful Acts against the Safety of Maritime Navigation (SUA Convention).¹⁸ At the same time it adopted a similar set of provisions in a Protocol for the protection of fixed platforms located on the continental shelf.¹⁹

The primary purpose of the SUA Convention is to ensure that appropriate action is taken against persons committing unlawful acts against shipping, whether for private or political gain.²⁰ The proscribed acts include seizure of the vessel by force; violence against persons on board; and the placing of shipboard devices likely to damage or destroy the vessel.²¹ The Convention also obliges

¹⁵ Id.

¹⁶ On 3 October 1985, a group of Palestinian guerrillas hijacked the Italian cruise ship, *Achille Lauro*, in Egyptian territorial waters; it was considered a milestone event in modern vessel security concerns. See Keyuan, n. 3 above, p. 8, note 30. See also Mensah, n. 7 above, pp. 18–19.

¹⁷ International Maritime Organization (IMO), Assembly Resolution 544 (14) adopted on 20 November 1985 and UNGA Res. 40/61 adopted on 9 December 1985 respectively.

¹⁸ *Convention for the Suppression of Unlawful Acts against the Safety of Maritime Navigation*, done 10 March 1988 (in force 1 March 1992), 1678 U.N.T.S. 221 (1992), 27 I.L.M. 627 (1988), available: <www.imo.org/home.asp?topic_id=910> (retrieved 4 December 2008) [hereinafter Convention for Suppression of Unlawful Acts].

¹⁹ *Protocol for the Protection of Fixed Platforms Located on the Continental Shelf*, 27 I.L.M. 685 (1988).

²⁰ Keyuan, n. 3 above, p. 10.

²¹ Convention for Suppression of Unlawful Acts, n. 18 above, Article 3(1).

contracting governments either to prosecute or extradite alleged offenders.²² The most important aspect of this Convention is that even if terrorist acts cannot be suppressed under the LOS Convention, they may now be punished under the SUA Convention.

While the 1988 SUA Convention overcame many of the limitations of the law of the sea against piracy, more recent incidents, especially the attacks of 11 September 2001, have demonstrated that it was still too restricted in scope to deal with modern maritime terrorism. Hence, in 2005, IMO concluded an amending Protocol to the SUA Convention²³ that enlarged the bans on criminal acts and terrorist attacks on shipping.²⁴ The Protocol prohibits the carriage of persons known to have committed an offence under the SUA Convention.²⁵ It also strengthens the international response to the proliferation of weapons of mass destruction by criminalising their illicit shipment by sea. The Protocol additionally provides ship-boarding provisions to enhance the collective ability to take action against such traffic.²⁶

11.2.1.3. WCO Guidelines for Cargoes

In light of the development of integrated supply chains in the delivery of international trade, the World Customs Organization²⁷ has moved to simplify the customs procedures that impede the flow of goods across national frontiers by means of the International Convention on the Simplification and

²² Id., Article 10. And see *Protocol for the Suppression of Unlawful Acts Against the Safety of Fixed Platforms Located on the Continental Shelf, 1988 to the Convention for the Suppression of Unlawful Acts Against the Safety of Maritime Navigation, 1988*, available: <http://www.imo.org/Conventions/mainframe.asp?topic_id=259&doc_id=686> (retrieved 3 December 2008).

²³ *Protocol of 2005 to the Protocol for the Suppression of Unlawful Acts Against the Safety of Fixed Platforms Located on the Continental Shelf*, IMO/LEG/CONF/15/22, 1 November 2005, available: <<http://www.state.gov/documents/organization/58425.pdf>> (retrieved 3 December 2008). Similar amendments were made simultaneously to the 1988 Protocol concerning attacks against fixed platforms.

²⁴ The Protocol particularly criminalises the use of explosives, radioactive material and biological, chemical and nuclear weapons on or against shipping in a manner that is likely to cause serious injury or death when the purpose of the act, by its nature or context, is to intimidate a population or to compel a government or international organisation to act in a desired way. Id., Article 2(bis).

²⁵ Id., Article 3(bis).

²⁶ Protocol of 2005, n. 23 above.

²⁷ Formally called the Customs Co-operation Council.

Harmonization of Customs Procedures (as amended by Protocol),²⁸ ordinarily known as the Revised Kyoto Convention of 1999. Building on this foundation, the WCO has since taken steps on several regulatory levels to enhance the efficiency and security of international trade. It began with the 2002 Resolution of the Customs Co-operation Council on Security and Facilitation of the International Trade Supply Chain,²⁹ which set out a programme of action for both the organisation and individual member states.

Pursuant to this action plan, the WCO subsequently elaborated a number of guidelines and frameworks for specific trade facilitation and security tasks, of which the most significant ones are mentioned here. First, the High Level Guidelines for Co-operative Arrangements between Members and Private Industry to Increase Supply Chain Security and Facilitate the Flow of International Trade, promulgated in 2003,³⁰ supply directions for the enhancement of co-operation between traders and national customs authorities. Then in June 2004, the WCO published a companion set of Customs Guidelines on Integrated Supply Chain Management,³¹ which mandated an integrated and secure control chain between national customs based on the best practices of risk management, and recommended requirements for a Unique Consignment Reference for Customs Purposes³²; the latter is intended to provide continuity of the audit trail of a shipment from origin to destination.³³

²⁸ *International Convention on the Simplification and Harmonization of Customs Procedures*, Brussels, 26 June 1999 (in force 3 February 2006), available: <<http://www.wcoomd.org/kybodycontent.htm>> (retrieved 4 December 2008).

²⁹ Resolution of the Customs Co-operation Council on Security and Facilitation of the International Trade Supply Chain, 2002, available: <http://www.wcoomd.org/files/1.%20Public%20files/PDFandDocuments/Resolutions/Security_Facilitation_Int_Trade_Supply_Chair.pdf> (retrieved 4 December 2008).

³⁰ See n. 28 above, Annex VII to Doc. SP0122E1, Doc. No. TF0004E3 (2003). See also the *International Convention on Mutual Administrative Assistance in Customs Matters*, Brussels, 27 June 2003 [hereinafter the Johannesburg Convention], available: <<http://www.wcoomd.org/files/1.%20Public%20files/PDFandDocuments/Conventions/Internconvmutualadmineng2003.pdf>> (retrieved 3 December 2008).

³¹ World Customs Organization website at <<http://www.wcoomd.org>> (retrieved 3 December 2008).

³² Recommendation of WCO Concerning a Unique Consignment Reference (UCR) for Customs Purposes, and accompanying Guidelines, 26 June 2004, available: <<http://www.wcoomd.org/pftoolsuchrecomm.htm>> (retrieved 3 December 2008).

³³ WCO also sought to encourage the widest use of electronic transmissions of customs data, appropriately protected by security technology, by the adoption of a revised Recommendation Concerning the Electronic Transmission and Authentication of Customs and Other Regulatory Information, 24 June 2005, available: <http://www.wcoomd.org/files/1.%20Public%20files/PDFandDocuments/Recommendations/RecommendationsIT_16_June_1981_eng.pdf> (retrieved 3 December 2008).

In June 2005, a WCO Resolution adopted these guidelines in the Framework of Standards to Secure and Facilitate Global Trade (SAFE Framework).³⁴ This Framework is built on the concept of customs-to-customs networking and customs-to-business partnering. It emphasizes harmonisation of electronic customs information, consistent use of a risk management approach to security, and operation of non-intrusive detection equipment. When these principles of customs operations are coupled with a Seal Integrity Programme for Secure Container Shipments, the security of the supply chain for cargo movement across borders is assured.³⁵ Incorporated into the SAFE Framework is the idea that any business operator that is party to an international supply chain in any way, and is approved by its national customs organisation as complying with WCO or equivalent security standards, may be designated an authorised economic operator (AEO) and thus receive faster processing and less attention from customs. Pursuant to this concept, the AEO Guidelines were prepared and adopted by WCO Resolution in June 2006 as an additional appendix to the SAFE Framework.³⁶ It should be noted that there is often no link between those operating with authority under the ISPS Code and those acting under authority granted by a country's adoption of WCO guidelines.

11.2.1.4. ILO Convention for Seafarers

Commensurate with the work of the IMO on ship security, the International Labour Organization recognised the need to review the security status of ships' crews both for their own safety and that of the ports they may visit. Hence, the ILO undertook a revision of its existing principles on seafarers' credentials and prescribed a new model document in the Seafarers' Identity Documents Convention (Revised), 2003.³⁷ The security of this document is assured, so far

³⁴ Framework of Standards to Secure and Facilitate Global Trade [hereinafter SAFE Framework], available: <<http://www.wcoomd.org/files/1.%20Public%20files/PDFandDocuments/Conventions/Framework%20of%20Standards%20to%20Secure%20and%20Facilitate%20Global%20Trade.pdf>> (retrieved 4 December 2008). And see speech of Michael Schmitz, Director of Compliance and Facilitation, WCO, to the United Nations Security Council, 23 February 2007, available: <<http://www.wcoomd.org/speeches/default.aspx?lid=1&id=57>> (retrieved 3 December 2008).

³⁵ SAFE Framework, id., Appendix to Annex 1.

³⁶ Resolution of the Customs Co-operation Council on the Framework of Standards to Secure and Facilitate Global Trade, June 2006, available: <[http://www.wcoomd.org/files/1.%20Public%20files/PDFandDocuments/Resolutions/Framework_of_Standards_to_Secure_and_Facilitate_Global_Trade_\(june_2006\).pdf](http://www.wcoomd.org/files/1.%20Public%20files/PDFandDocuments/Resolutions/Framework_of_Standards_to_Secure_and_Facilitate_Global_Trade_(june_2006).pdf)> (retrieved 4 December 2008), para. 3.3.

³⁷ *International Labour Organization (ILO) Convention No. C185, Seafarers' Identity Documents Convention (Revised), 2003*, Geneva, 19 June 2003 (in force 9 February 2005),

as possible, by the use of durable materials and security features that inhibit tampering or falsification and a machine readable zone of information. The identity of the holder is established by a photograph and customary personal data together with a biometric template based on a fingerprint inscribed as a bar code.³⁸

11.2.1.5. ISO Standards for Secure Freight Containers

A crucial component in the security of cargo stuffed in a container is the integrity of the seal on its lock. The International Organization for Standardization has taken steps to ensure such integrity by setting standards for high security container seals. Its published standard establishes uniform procedures for the classification and acceptance or withdrawal of mechanical freight container seals.³⁹ Further, the ISO is working towards the introduction of a standard for electronic container seals. This project includes work on the transmission and identification of a seal and a system for verifying the accuracy of its use, along with data protection and authentication of the electronic device.⁴⁰

11.2.2. United States' National Initiatives

On 25 November 2002, the United States implemented the ISPS Code by passing the *Maritime Transportation Security Act of 2002* (MTSA),⁴¹ with effect on 1 July 2004, the same day the ISPS Code came into force. In addition to the base requirements of the ISPS Code noted previously, the MTSA instituted additional ones aimed at further reducing the vulnerability of US marine container supply chains. Since its implementation, there have been

available: <<http://www.ilo.org/ilolex/cgi-lex/convoke.pl?C185>> (retrieved 4 December 2008), Annex 1.

³⁸ Two fingerprints are used to create a biometric template, which is then loaded into a chip in the Seafarer's Identity Document and may be read as an international barcode: see DDCOM, "Seafarers identity becomes clearer: New international labour Convention for seafarers' ID documents comes into force," *World of Work Magazine* 53 (2005), p. 35.

³⁹ ISO/PAS 177712:2006 in ISO, *ISO Standards Handbook: Freight Containers*, 4th ed. (2006).

⁴⁰ Freight containers – Mechanical seals, ISO/PAS 17712:2006, available: <<http://www.iso.org/iso/en/CatalogueDetailPage.CatalogueDetail?CSNUMBER=42791&ICS1=55&ICS2=180&ICS3=10>> (retrieved 4 December 2008).

⁴¹ See MTSA, n. 5 above.

a number of refinements to the initial requirements,⁴² and coverage has been expanded under the SAFE Port Act 2006,⁴³ discussed later. However, complete implementation of the US maritime security regime is highly unlikely as the US Coast Guard is hard pressed to recruit and train an adequate number of inspectors, let alone meet other requirements of the SAFE Port Act 2006.⁴⁴

One addition to the base regime is the 96-hour rule, which requires all vessels that will call at a US port to provide the US government with a detailed notice of arrival 96 hours in advance of their arrival at their first US port of call. This information enables the US government to determine if the vessel poses a threat to US interests and to allocate its security resources to those vessels it deems warrant closer scrutiny.

A second addition, the 24-hour rule, requires both liner companies and non-vessel operating common carriers to provide the US government with a notice about each cargo container and its contents 24 hours in advance of its loading in a foreign port. This rule enables the US government to identify marine containers that are suspicious prior to being loaded and to target them for additional inspection. These two rules form a part of the programme known as the Container Security Initiative (CSI); the CSI places US customs officers in foreign ports and enables US Customs and Border Protection to optimise the advantages offered by the Department of Homeland Security's risk assessment tool—the Automated Targeting System.

The extraterritorial nature of this second rule in particular is quite wide-ranging. As of 5 October 2007, 58 CSI ports accounted for 85 percent of all traffic bound for the United States.⁴⁵ A majority of the largest container ports in the world are members of the Container Security Initiative, including 23 EU ports and three Canadian ports.⁴⁶ Exceptions, however, include some of the largest container ports in the world—Dalian, Guangzhou, Ningbo-Zhoushan, Qingdao, Tianjin and Xiamen in China as well as other large container ports in Egypt (Port Said), India (Jawaharlal Nehru), Indonesia (Tanjung Priok), Japan

⁴² Government Accountability Office, *Cargo Security: Partnership Program Grants Importers Reduced Scrutiny with Limited Assurance of Improved Security*, D-05-404 (Washington, DC: Government Accountability Office, 2005).

⁴³ See SAFE Port Act, n. 6 above.

⁴⁴ Government Accountability Office, *Maritime Security: Observations on Selected Aspects of the SAFE Port Act* (GAO-07-754T) (Washington, DC: Government Accountability Office, 2007).

⁴⁵ US Customs and Border Protection, *Container Security Initiative Ports*, available: <http://www.dhs.gov/xprevprot/programs/gc_1165872287564.shtm> (retrieved 4 December 2008).

⁴⁶ The official US CSI web site indicates the three Canadian ports are Vancouver, Montreal and Halifax, while the Canadian Department of International Trade web site reports four, including Saint John.

(Osaka), the Philippines (Manila), Saudi Arabia (Jeddah) and Vietnam (Ho Chi Minh).⁴⁷

In addition to the M TSA and the CSI, the United States has more recently initiated the Secure Freight Initiative (SFI) under the umbrella provided by the SAFE Port Act of 2006. This programme, established by the Department of Homeland Security in December 2006, focuses on freight screening in foreign ports. SFI programme funding is from the US budget and its initial phase deployed nuclear detection devices to six foreign ports, some deemed high risk—Port Qasim (Pakistan), Puerto Cortes (Honduras), and Port Salalah (Oman)—and others in significant trade originating markets—Southampton (United Kingdom), the Gamman Terminal at the Port of Busan (Korea), and Singapore.⁴⁸ Marine containers at these ports are scanned for radiation before being loaded for the United States. Unlike the Automated Targeting System, in the case where an alarm is sounded, both host country officials and the Department of Homeland Security are simultaneously notified. Again security of cargo (and by implication vessel) are addressed outside the United States and before the vessel sails.

The United States has also implemented a number of other programmes to ensure better management of cargo security. They are not specifically directed at shipping but they are mentioned here as they may have impacts indirectly on vessels when cargo is laden on board. One initiative often discussed in the security literature is C-TPAT, the Customs-Trade Partnership Against Terrorism. Only American companies can belong (the sole exception being some Mexican *maquiladoras* and, recently, foreign manufacturers who are invited), but it has extraterritorial application by implicating the shipping on which cargoes bound for the United States are carried. C-TPAT membership is supposed to increase the probability of faster processing at borders for the cargo of members. This implies that non-members face greater likelihood that their marine containers will be stopped and inspected.⁴⁹ What C-TPAT has done, however, is encourage US multinational companies to ensure that the security efforts of their supply chain partners are better than those of non-partners.

⁴⁷ See US Customs and Border Protection, n. 45 above.

⁴⁸ US Department of Homeland Security, “DHS and DOE Launch Secure Freight Initiative,” *Press Release* (7 December 2006), available: <http://www.dhs.gov/xnews/releases/pr_1165520867989.shtm> (retrieved 4 December 2008).

⁴⁹ According to US Customs and Border Protection (website at <<http://www.cbp.gov>> (retrieved 4 December 2008)), more than 8,200 businesses were members as of 27 March 2005. The website content indicating membership has not been updated.

Given its US-centric approach, several countries, including Canada, have adopted their own programmes that mirror the C-TPAT requirements.⁵⁰

A second initiative aims to interdict shipments of weapons of mass destruction (WMD). Known as the Proliferation Security Initiative, it operates cooperatively through inter-state partnership arrangements to establish best practices and to coordinate readiness and action in response to an apprehended security incident. A Statement of Interdiction Principles was adopted in Paris on 4 September 2003, one of which urges participating states “to seriously consider providing consent ... to the boarding and searching of its own flag vessels by other states” when they are reasonably suspected of moving WMD cargoes.⁵¹

11.3. Maritime Security in the EU and Canada

11.3.1. EU Practices and Policies

11.3.1.1. Introduction

The EU has a great interest in maritime affairs. According to the EU Commission, there is a clear case for an integrated European maritime policy.⁵² Twenty out of 25 constituent states are coastal states, and the total coastline of the EU is over 65,000 km in length. Of note, the offshore marine area of the EU—encompassing territorial seas, exclusive economic zones, and continental shelves of its Member States—is larger than the land territory of the EU. European maritime areas account for over 40 percent of the gross national product of the EU.⁵³ Oceans, therefore, play a vital role in the EU’s economic and social life, and this maritime dimension has increased especially after the 2004 enlargement. On the one hand, this maritime orientation creates

⁵⁰ The Canadian programme, Partners in Protection, was developed at about the same time as C-TPAT.

⁵¹ See US Department of State, *International Information Programs*, available: <<http://usinfo.state.gov/products/pubs/proliferation>> (retrieved 4 December 2008).

⁵² See Commission of the European Communities, *Towards a Future Maritime Policy for the Union: A European Vision for the Oceans and Seas*, Green Paper, COM (2006) 275 final, available: <http://ec.europa.eu/maritimeaffairs/pdf/com_2006_0275_en_part2.pdf> (retrieved 4 December 2008), Volume II-Annex.

⁵³ L. Juda, “The European Union and Ocean Use Management: the Marine Strategy and the Maritime Policy,” *Ocean Development & International Law* 38 (2007): 259–282, p. 260.

opportunities but, on the other hand, incurs significant challenges. It is argued that the scale of these challenges, and the types of action needed to address them, is better tackled at the supranational level than by individual member states. However, the EU has certain constitutional limitations. Individual Member States exercise sovereign rights. Article 5 of the Treaty Establishing the European Community requires the Community to act within the limits of the powers conferred upon it by the treaty and the objectives assigned to it in the treaty. In areas that do not fall within its exclusive jurisdiction, the Community may take action only if and in so far as the objectives of the proposed action cannot be sufficiently achieved by the Member States. Any action by the Community also shall not go beyond what is necessary to achieve the objectives of the treaty.⁵⁴ This means that the Community action must conform to the principles of both subsidiarity and proportionality. An integrated European maritime policy therefore has to align with these principles.⁵⁵

The Commission needed to develop the overall framework for a marine strategy for the European Union in collaboration with the existing regional conventions. In order to draw up the strategy, the Commission established a consultation process open to participation from all relevant stakeholders (e.g., Member States and candidate countries, key non-EU neighbouring countries, international commissions and conventions, industry and non-governmental organisations). On 24 October 2005, after two years of intensive stakeholder consultations, the Commission presented the European Marine Strategy (EMS).⁵⁶ The Strategy suggests the need for a comprehensive and integrated Community policy on oceans and seas by putting an end to sector-by-sector approaches to maritime affairs. The Strategy resulted in the adoption of a proposed Maritime Strategy Directive (MSD). While most of the Member States recognised the need for a co-ordinated marine strategy, some of them were not ready to accept additional binding commitments.⁵⁷ The need for “an all embracing Maritime Policy,” however, has become one of the strategic objectives of the Commission for 2005–2009.⁵⁸ The proposed MSD defines common objectives and principles, but leaves Member States free to plan and implement measures at national and regional levels taking into account the

⁵⁴ See Article 5 of the *Treaty on the European Union*, Maastricht, 7 February 1992, available: <<http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:C:2008:115:0001:01:EN:HTML>> (retrieved 4 December 2008).

⁵⁵ See V. Frank, *European Community Marine Environmental Protection in the International Law of the Sea Implementing Global Obligations at the Regional Level* (The Hague: Martinus Nijhoff, 2007), pp. 102–103.

⁵⁶ *Id.*, p. 96.

⁵⁷ *Id.*, p. 98.

⁵⁸ *Id.*, p. 101.

diverse regional conditions. The proposed MSD highlights the development of strategies for the integrated management of all human activities in marine regions. Member States are encouraged, amongst themselves and with third countries sharing the same marine region, when appropriate, to act within the framework of existing regional seas conventions.⁵⁹ Finally, on 14 May 2008, the European Community adopted the Marine Strategy Framework Directive.⁶⁰

In March 2005, the European Commission began work towards the adoption of a Green Paper on Maritime Policy. The proposals were outlined in the communication “Towards a Future Maritime Policy for the Union: A European Vision for the Oceans and Seas.”⁶¹ This was actually the first step towards a coherent and integrated oceans policy in Europe along the lines of other countries, such as Australia, Canada, Portugal, and the United States. The EU, thus, has attempted to develop a comprehensive integrated, coherent and holistic ocean management system. On 7 June 2006, the EU Commission adopted its Green Paper on Maritime Policy with the intention of generating wide-scale discussion on the need for and formation of a EU approach to maritime policy.⁶² Subsequently, on 10 October 2007, the Commission adopted “An Integrated Maritime Policy for the European Union,”⁶³ the so-called Blue Book, with an accompanying document containing an action plan for the integrated maritime policy.⁶⁴

⁵⁹ Id., p. 99.

⁶⁰ Directive 2008/56/EC of the European Parliament and of the Council of 17 June 2008 establishing a framework for community action in the field of marine environmental policy (Marine Strategy Framework Directive) *Official Journal* L 164/19 (25 June 2008), available: <<http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2008:164:0019:0040:EN:PDF>> (retrieved 4 December 2008). Member States must transpose MSFD into national law by 15 July 2010 at the latest. The main aim of MSFD is to ensure the “good environmental status” of Europe’s seas by 2020. The Directive is also seen as an environmental pillar of the European Union.

⁶¹ See Commission of the European Communities, n. 52 above.

⁶² Id.

⁶³ Commission of the European Communities, *An Integrated Maritime Policy for the European Union*, Communication from the Commission to the European Parliament, the Council, The EESC and the COR, COM(2007) 575 final (Brussels, 10 October 2007), available: <<http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=COM:2007:0575:FIN:EN:PDF>> (retrieved 4 December 2008).

⁶⁴ Commission of the European Communities, Commission Staff Working Document, SEC(2007) 1278 (Brussels, 10 October 2007), available: <http://ec.europa.eu/maritimeaffairs/pdf/ActionPaper/action_plan_en.pdf> (retrieved 4 December 2008).

11.3.1.2. EU Legislation on Maritime Security

Maritime security related legislation at the Community level began after the amendments to the SOLAS Convention were adopted in 2002. Since the objectives of the IMO amendments, which introduced the ISPS Code, cannot be realised by the Member States individually, the EU adopted Regulation No. 725/2004 to incorporate the provisions of the SOLAS amendments and the ISPS Code. The Regulation defines maritime security as “the combination of preventive measures intended to protect shipping and port facilities against threats of international unlawful acts.”⁶⁵

There are two objectives in Regulation No. 725/2004. First, it is aimed at introducing and implementing Community measures to enhance the security of ships used in international trade and of associated port facilities in the face of threats of intentional unlawful acts. Second, the Regulation provides a basis for the harmonised interpretation, implementation and Community monitoring of the special measures to enhance maritime security in accordance with the SOLAS amendments and the ISPS Code.⁶⁶ However, unlike IMO rules, the Regulation also applies to some domestic shipping, i.e., between ports within the same Member State.⁶⁷ According to Article 3 of the Regulation, Member States had to apply Part A of the ISPS Code in full for international shipping by 1 July 2004 and to Class A domestic passenger shipping by 1 July 2005.⁶⁸ The Member States, based on a mandatory security risk assessment, were required to decide by 1 July 2007 how to apply the provisions of the regulations to other categories of ships operating domestic services. While the ISPS Code applies to ships, companies and port facilities, according to Article 7, Regulation 725/2004 does not apply to ships of war and troop ships, cargo ships of less than 500 gross registered tonnes, ships not propelled by mechanical means, wooden ships of primitive build, fishing vessels, or vessels not engaged in commercial activities. Moreover, in the implementation of the ISPS Code, the EU has taken a more stringent position than IMO requires. For example, in Article 3(5), the EU made much of Part B of the ISPS Code mandatory; as the IMO does not make these provisions mandatory, some argue that

⁶⁵ See EU Regulation No. 725/2004 of the European Parliament and of the Council of 31 March 2004 on Enhancing Ship and Port Facility Security, *Official Journal* L 129/6 (29 April 2004).

⁶⁶ *Id.*, Article 1.

⁶⁷ Background Paper (to Green Paper) No. 6 on Maritime Safety and Security, available: <[http://ec.europa.eu/maritimeaffairs/pdf/SEC\(2006\)_689%20_6.pdf](http://ec.europa.eu/maritimeaffairs/pdf/SEC(2006)_689%20_6.pdf)> (retrieved 4 December 2008), p. 23.

⁶⁸ By Article 4 of Council Directive 98/18/EC of 17 March 1998, a Class A passenger ship is a vessel that carries more than 12 passengers.

implementation of the ISPS Code in European ports is impressive and that all players concerned are doing their best to make it a success.⁶⁹

Regulation 725/2004 is complemented by Directive 2005/65/EC,⁷⁰ which goes beyond port facility boundaries in laying down security measures that shall be observed in ports. Member States must ensure that the port security measures introduced by the Directive are closely coordinated with measures taken pursuant to Regulation 725/2004.⁷¹ In addition, Member States shall ensure that when port security assessments are carried out, they take into account, as a minimum, the detailed requirements listed in Annex I of the Directive.⁷² Member States are required to introduce a system of security levels for ports or parts of ports as defined in Regulation 725/2004.⁷³ Enhancement of port security measures and clearance are delineated in Directive 2005/65/EC, which in Annexes I (port security assessment) and II (port security plan) provides detailed requirements about control mechanisms, clearance systems, luggage and cargo controls, background checks for personnel, and so on. Moreover, Regulation 725/2004 implements IMO's SOLAS regulation on Ship Security Alert System in EU law.

For the EU, violations are penalised by the respective Member States. Article 14 of Regulation 725/2004 states that Member States decide the penalties for violations of its provisions. Thus, according to EU laws, although enforcement of legislation lies with the Member States, the Commission retains the right and the duty to inspect whether proper implementation of Regulation 725/2004 within the Member States is observed.⁷⁴ Member States of the EU are expected to ensure cooperation with the Commission's inspectors. The "Member State shall ensure that, upon request, Commission inspectors have access to all relevant security related documentation," which includes the national programme for implementation of Regulation 725/2004 and its associated data and monitoring reports.⁷⁵ The European Maritime Safety

⁶⁹ See H. N. Psaraftis, "EU Port Policy: Where Do We Go from Here?" *Maritime Economics & Logistics* 7 (2005): 73–82, at p. 78. See also E. Anyanova, "The EC and Enhancing Ship and Port Facility Security," *Journal of International Commercial Law and Technology* 2, no. 1 (2007): 25–31, p. 30.

⁷⁰ Directive 2005/65/EC of the European Parliament and of the Council of 26 October 2005 on enhancing port security, *Official Journal* L 310/28 (25 November 2005), available: <http://eur-lex.europa.eu/LexUriServ/site/en/oj/2005/l_310/l_31020051125en00280039.pdf> (retrieved 4 December 2008).

⁷¹ *Id.*, Article 4.

⁷² *Id.*, Article 6.

⁷³ *Id.*, Article 8. These levels are consistent with the ISPS Code described above.

⁷⁴ See EC Regulation No 884/2005 of 10 June 2005, *Official Journal* L148/25, "laying down procedures for conducting Commission inspections in the field of maritime security."

⁷⁵ *Id.*, Article 4.

Agency, created by EC Regulation 1406/2002, provides technical assistance, making technical experts available to participate in the Commission's inspection programme.⁷⁶

Another step the EU has taken is the adoption of "security amendments" to the Community Customs Code⁷⁷ to protect the customs territory of the Community and to provide the EU with a common risk management system. The goal is a harmonised application of customs controls in order to minimise the risks to the Community and its citizens and to the Community's trading partners⁷⁸ via commonly agreed standards and risk criteria for the selection of goods and economic operators by the Member States.⁷⁹ The regulations cover entry, exit, transit, transfer and end-use of goods moved between the customs territory of the Community and third countries, as well as the presence of goods that do not have Community status. By international agreement, custom controls for the correct application of the Community legislation may be carried out in a third country as well.⁸⁰

11.3.1.3. EU Policy Development

The EU Commission has highlighted a clear need for future policy development in the field of maritime security. In 2006, the Commission planned to launch a wider debate on the concept of a "common European maritime area," one where both the ship and the goods could be reliably tracked throughout its journey, thereby reducing the need for individual state controls in purely intra-Community trade.⁸¹ As stated previously, in 2007, the EC published a Communication on an Integrated Maritime Policy for the European Union.⁸² The Communication, *inter alia*, placed importance on a maritime surveillance

⁷⁶ Id., Article 6.

⁷⁷ Regulation (EC) 648/2005 of 13 April 2005 amending Council Regulation (EEC) No 2913/92 establishing the Community Customs Code, *Official Journal* L 117/13 (4 May 2005).

⁷⁸ Id., Preamble, para. 2.

⁷⁹ In this context, it should be noted that the EU cooperates with the United States in the framework of the Container Security Initiative (through Agreement of 28 April 2004 between the European Community and the United States of America on intensifying and broadening the Agreement on customs cooperation and mutual assistance in customs matters to include cooperation on container security and related matters (L 304/30/09/2004)), which was launched after the 11 September 2001 terrorist attacks. See Background Paper, n. 67 above, p[. 23–24.

⁸⁰ See Regulation (EC) 648/2005, n. 77 above, Article 13.

⁸¹ See *Maritime Transport Policy Improving the Competitiveness, Safety and Security of European Shipping* (DG Transport, 2006), available: <http://ec.europa.eu/transport/maritime/doc/maritime_transport_policy_en.pdf> (retrieved 4 December 2008).

⁸² Commission of the European Communities, n. 63 above.

system, on maritime data and information infrastructure, and on the visibility of maritime Europe. All these efforts are intended to ensure overall security in European waters. An integrated approach, the Commission stated, is required “to meet the challenge of transnational security threats,” for which a higher degree of coordination is a necessary pre-requisite.⁸³

An example of such integration is the development of a network of vessel tracking and e-navigation systems for European coastal waters and the high seas, including satellite monitoring and long range identification and tracking (LRIT). The Marine Strategy Framework Directive, discussed previously, defined European marine regions and sub-regions.⁸⁴ It is argued that LRIT systems across the European marine regions using satellite communications will have highly beneficial effects on shipping in the European Community. This is particularly important for “motorways of the sea” traffic where a ship sails between two Member States.⁸⁵ To this end, the Commission has undertaken responsibility to promote cooperation between the coast guards and similar agencies of Member States, and to take steps towards greater interoperability of surveillance systems and the establishment of a European Marine Observation and Data Network⁸⁶ to enhance maritime safety and security.

In addition, the EU Green Paper on maritime policy strongly urges Member States to ratify, as soon as possible, existing international maritime conventions, including the 2005 Protocol to the SUA Convention, so as to provide a legal framework for the US-led Proliferation Security Initiative. As some Member States have concluded bilateral boarding agreements with the United States, coordinated action at the EU level towards such initiatives is highly desirable.⁸⁷

⁸³ Id. For example, normally, surveillance activities in Europe are carried out by the Member States even though most of the activities and threats are of a transnational nature. Within the Member States, the surveillance activities again fall under the responsibility of several different enforcement agencies operating independently. Therefore, the Commission advocates the need for a higher degree of coordination on maritime surveillance.

⁸⁴ See Directive 2008/56/EC, n. 60 above, Article 4 which sets out four regions: Baltic, North East Atlantic, Mediterranean and Black seas.

⁸⁵ See Maritime Transport Policy, n. 81 above.

⁸⁶ See Commission of the European Communities, n. 63 above.

⁸⁷ See Background Paper no. 6, n. 67 above, p. 30.

11.3.1.4. EU Cooperation with the United States

The EU has further designed its maritime security policy to enhance cooperation with third countries, especially with the United States, in the fight against terrorism. The US initiatives relating to maritime security measures were discussed above. The measures require bilateral and multilateral cooperation. For example, the US Coast Guard's International Port Security Program has worked closely with the European Union to establish a strong relationship to further improve practices in ports located both in the EU and in the United States.⁸⁸ There has been in place between the United States and the EU, since 1997, an Agreement on Customs Cooperation and Mutual Assistance in Custom Matters (CMAA). On 22 April 2004, the two parties signed a further Agreement that extended the scope of their 1997 Agreement by expanding customs cooperation to ensure that general customs control takes due account of security concerns.⁸⁹ The EU Council, by Decision 2004/634/EC, encouraged Member States to expand the CSI to all the Community ports through arrangements with the United States. As is the case elsewhere in the world, Community ports participating in the CSI station US customs officials at the port. These measures are, however, subject to conformity with the EU Treaty and compatibility with the CMAA as expanded by the 2004 Agreement.⁹⁰ By 2007, the CSI had been implemented in 23 EU ports, and no further ports have been added since, signalling that further interest on the part of the US government in expanding the initiative is unlikely.⁹¹

⁸⁸ See "For the Navies of the Mediterranean and Black Sea Countries," 6th Regional Sea Power Symposium, Venice, 10–13 October 2006, available: <<http://www.marina.difesa.it/rss/2006/petermaning.asp>> (retrieved 4 December 2008).

⁸⁹ *Agreement between the European Community and the United States of America on intensifying and broadening the Agreement on customs cooperation and mutual assistance in customs matters to include cooperation on container security and related matters*, *Official Journal* L 304/34 (30 September 2004), available: <http://eur-lex.europa.eu/LexUriServ/site/en/oj/2004/l_304/l_30420040930en00340037.pdf> (retrieved 4 December 2008).

⁹⁰ See the EU Council Decision of 30 March 2004 concerning the conclusion of the Agreement between the European Community and the United States of America on intensifying and broadening the Agreement on customs cooperation and mutual assistance in customs matters to include cooperation on container security and related matters, *Official Journal* L 304/32 (30 September 2004) available: <<http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2004:304:0032:0033:EN:PDF>> (retrieved 4 December 2008).

⁹¹ The 23 are: Rotterdam, The Netherlands; Bremerhaven and Hamburg, Germany; Antwerp and Zeebrugge, Belgium; Le Havre and Marseille, France; Gothenburg, Sweden; La Spezia, Genoa, Naples, Gioia Tauro, and Livorno, Italy; Felixstowe, Liverpool, Thamesport, Tilbury, and Southampton, United Kingdom; Piraeus, Greece; Algeciras, Barcelona, and Valencia, Spain; and Lisbon, Portugal. (US Customs and Border Protection, Container Security Initiative

While the EU remains committed to working closely with the United States in order to counter terrorism, concern remains that some of the import measures applied on security grounds may be used as a disguised form of protectionism or as a non-tariff barrier.⁹² The European Commission, Member States, and trading partners of the European Union are especially concerned about the US legislation. The CSI programme's stated intention of scanning 100 percent of inbound containers could incur trade-dampening costs. A detailed quantitative analysis of the benefits and drawbacks of 100 percent container scanning confirms that the impacts on costs, delays and security will be severe.⁹³ Furthermore, 100 percent scanning runs counter to a risk-based management perspective:

... some European customs officials have told us that the 100 percent scanning requirement is in contrast to the risk-based strategy behind CSI and C-TPAT, and the WCO has stated that implementation of 100 percent scanning would be 'tantamount to abandonment of risk management'.⁹⁴

In addition to the potential for major trade disruptions, the additional administrative burden for EU businesses and taxpayers, and the SAFE Port Act standards for container security and/or smart box technology are expected to negatively impact the competitiveness of EU suppliers.⁹⁵ In addition, the presence of naturally occurring radioactive materials is expected to be disruptive.⁹⁶ According to the EC Ambassador at the World Trade

Ports (n.d.), available: <http://www.dhs.gov/xprevprot/programs/gc_1165872287564.shtm> (retrieved 4 December 2008).

⁹² See E. Guth, "Trade Policy Review of United States," Statement by EC Ambassador at the WTO (Geneva, 9 & 11 June 2008), available: <http://ec.europa.eu/commission_barroso/mandelson/speeches_articles/spaw002_en.htm> (retrieved 4 December 2008).

⁹³ A. C. Bennett and Y. Z. Chin, "100% Container Scanning: Security Policy Implications for Global Supply Chains" (Masters of Engineering in Logistics, Cambridge MA: MIT, 2008).

⁹⁴ Government Accountability Office, *Supply Chain Security: Challenges to Scanning 100 Percent of U.S.-Bound Cargo Containers* (GAO-08-533T) (Washington, DC: Government Accountability Office, 2008), p. 18.

⁹⁵ "EU Issues, Annual Report on U.S. Barriers to Trade and Investment," *Online Bulletin Custom and International Trade News* (April 2008), available: <<http://hocnews.blogspot.com/2008/04/eu-issues-annual-report-on-us-barriers.html>> (retrieved 4 December 2008).

⁹⁶ See, for example, the findings at Southampton (UK) as part of the Secure Freight Initiative rollout, see SITPRO, *Evaluation of 100% Scanning and the Port of Southampton Trial* (n.d.), available: <<http://www.sitpro.org.uk/policy/security/position-100percent-0408.htm>> (retrieved 4 December 2008). This problem has also been documented in a number of other locations since the introduction of VACIS equipment based on gamma-ray technology, as is implemented in Canada at ports and some border crossings.

Organization, Eckart Guth, these measures will not necessarily increase security, but will increase transaction costs for exporters and customs services worldwide. They will affect the smooth circulation of trade.⁹⁷

11.3.2. Canadian Practices and Policies

11.3.2.1. Canadian Legislation on Maritime Security

As one of the G8 countries, Canada is a major trading nation. Much of its trade is carried by sea; indeed, of Canada's non-US trade in 2007, 64.4 percent was carried by the marine mode.⁹⁸ Although Canada only has a small number of ocean-going merchant vessels on its national shipping registry, its flag is flown by a significant number of bulk carriers operating in the St. Lawrence Seaway/Great Lakes system. These maritime interests add to Canada's concern for safe and secure shipping. It is no surprise, therefore, that Canada has long pursued a policy of engagement in the work of the IMO and its programmes for safer ships and cleaner seas, including participation in the IMO's work on maritime security.

Canadian marine policy is also strongly influenced by US intentions and practices. This influence results directly from Canada's close associations with its powerful neighbour to the south. Canada has multiple social and political relationships with the United States, which include a range of both competitive interests and co-operative regulatory arrangements in their coastal waters and over the resources of their marginal seas. Most significant, Canada has two trade agreements of relevance—the Canada-US Trade Agreement, signed in 1988, and the North American Free Trade Agreement, concluded five years later. Neither of these agreements includes maritime shipping within their remit, but both led to considerable increases in trading activity so that by 2005, in excess of 85 percent of Canada's international trade was with the United States. Added to the exchange of trade is very substantial foreign direct investment; in fact, in a number of sectors Canada and the United States make things together. As a result, after the attacks of 11 September 2001 in the United States, Canada reflected on its own security risks as well as negotiating with the United States about their joint continental concerns. The combination of these human, diplomatic and economic interests induced Canada to take

⁹⁷ See Guth, n. 92 above.

⁹⁸ Transport Canada, *Transportation in Canada 2007 Annual Report* (Ottawa: Transport Canada, 2008), Table EC7.

vigorous action against the threat of maritime insecurity, which included rapid implementation of the international ISPS Code and additional maritime regulations that closely match the national initiatives of the United States.

The provisions of the ISPS Code are applied in Canada by government regulations⁹⁹ made pursuant to the *Marine Transportation Security Act*.¹⁰⁰ Their application is fulsome; indeed the Canadian regulations exceed the implementation requirements of the Code in several respects. In particular, Canada enforces the ISPS Code more widely than required by imposing it not just against ships of the size or type designated by SOLAS, but also against “non-SOLAS” vessels. These are described as ships under the SOLAS minimum limit of 500 tons gross down to 100 tons gross, any vessel that carries more than 12 passengers regardless of tonnage, and all working barges that are carrying “certain dangerous cargoes”¹⁰¹ whenever they are engaged in international voyages.¹⁰² Thus Canada applies the ISPS Code’s standards to practically all foreign-going merchant ships, cruise ships, and ferries. Canada has also incorporated many elements of Part B of the ISPS Code, which are not mandatory, especially regarding restricted access to and around shipping, by imposing additional requirements on ferries, passenger vessels, cruise ships, certain dangerous cargoes facilities and barge fleeting stations, including provisions about personnel passes and keys.¹⁰³

Beyond ships, Canada also applies the ISPS Code to all marine facilities that interface with international shipping. These are defined in Canadian law as including “an area of land, water, ice or other supporting surface [together with any buildings, installations and equipment there] used, designed, prepared, equipped or set apart for use ... for the arrival, departure, movement or servicing of vessels.”¹⁰⁴ Canadian regulations apply the ISPS Code to all such marine facilities other than offshore drilling units and platforms.¹⁰⁵ All ports and harbours are clearly included in separate specific provisions.¹⁰⁶ The ISPS Code uses the phrase “port facility” which is defined by IMO resolution, rather than the Code itself, as “a location, as determined by the Contracting Government ... where the ship/port interface takes place.”¹⁰⁷ So it seems that

⁹⁹ *Maritime Transportation Security Regulations*, SOR/2004-144 as amended.

¹⁰⁰ *Marine Transportation Security Act*, S.C. 1994, c. 40 as amended.

¹⁰¹ *Maritime Transportation Security Regulations*, n. 99 above, s. 1.

¹⁰² *Id.*, s. 200(1).

¹⁰³ *Id.*, ss. 260–265, 347–350, 384.

¹⁰⁴ *Marine Transportation Security Act*, n. 100 above, s. 2(1).

¹⁰⁵ *Maritime Transportation Security Regulations*, n. 99 above, s. 301.

¹⁰⁶ *Id.*, ss. 361–375.

¹⁰⁷ See IMO, n. 4 above, Resolution 1, Annex art. 7, Regulation 1, s. 1.9.

Canada has chosen to give the ISPS Code its widest possible application to coastal facilities for ships.

In addition to the requirements of the ISPS Code, Canada has taken further regulatory steps in three other supportive directions, and has implemented administrative, in addition to criminal, penalties for violations. First, it has mandated the installation and use of security alert systems on vessels pursuant to IMO resolutions.¹⁰⁸ Secondly, it has established requirements for the background security clearance of a comprehensive range of personnel connected in any way to shipping activities, whether cargo vessels or cruise ships, in the restricted areas of 13 principal ports and the marine traffic centres of the St. Lawrence Seaway.¹⁰⁹ These requirements extend beyond on-site port and waterfront workers who service ships, handle cargoes or direct passengers to any person who could cause a failure in the security system by reason of advance access to ships' cargo or passenger documentation even, it seems, from a distant location.¹¹⁰ Security clearance is also voluntarily available to Canadian seafarers as a prerequisite to those who want a Canadian identity document. This document is not the same as the one prescribed under the ILO's revised Seafarers' Identity Documents Convention described above and it does not contain biometric data of the holder. However, Canada is taking steps towards applying the ILO convention; tendering of a contract to fulfil ILO criteria is anticipated with a view to operating a compliant system in 2009.¹¹¹

Third, Canada has replicated US demands for 96 hours notice in advance of entering national waters. Canadian pre-arrival notices must provide an extensive list of information about the ship and its cargo, including its International Ship Security Certificate, a statement of when its last ten declarations of security were completed, and details of any security threats suffered at, as well as information about, its last ten ports of call.¹¹² In addition, regulations made under the Canadian *Customs Act*¹¹³ reiterate the requirement of a 96-hour pre-arrival notice for liner shipping¹¹⁴ with the added demand that specified details about commercial goods stuffed in containers must be supplied

¹⁰⁸ *Regulations Amending the Marine Transportation Security Regulations*, SOR/2006-269, s. 5(F) pursuant to IMO Amendments to the Annex to the International Convention for the Safety of Life at Sea, 1974 [SOLAS] made by the Conference of Contracting Governments in Resolution 1, Annex art.7, Regulation 6 adopted 12 December 2002.

¹⁰⁹ *Maritime Transportation Security Regulations*, n. 99 above, Part 5 & Sched. 1.

¹¹⁰ *Id.*, s. 503.

¹¹¹ N. Nazha, Director of Seafarers' Identity, Transport Canada, pers. comm. (24 October 2008).

¹¹² *Maritime Transportation Security Regulations*, n. 99 above, s. 221.

¹¹³ *Customs Act*, R.S.C. 1985, c. 1 (2nd Supp.).

¹¹⁴ *Reporting of Imported Goods Regulations*, SOR/86-873, ss. 13.2, 13.3 & Sched. 1, Part 1.

to the Canada Border Services Agency (CBSA) at least 24 hours before loading at the foreign port of origin.¹¹⁵ This data is received and reviewed in Ottawa, where a risk assessment is made and a decision is reached about stopping, inspecting or interdicting the cargo upon arrival in Canada.

Finally, as a means of enforcing all the regulatory prescriptions that give effect to the ISPS Code in Canada, the usual penal processes for violation have been enhanced by a system of simplified administrative penalties.¹¹⁶ These penalties are of two forms. Under one, the offender may be served with a notice of violation and a demand for payment of a prescribed penalty, which must be paid within 30 days unless the offender requests a review by the Transportation Appeal Tribunal of Canada (TATC).¹¹⁷ Alternatively, the violator may be required to enter an assurance of voluntary compliance in future and to deposit a sum of money as security for performance; a right of review by the TATC is available, but failure to comply will incur double the penalty prescribed for the original violation and forfeiture of the security deposit.¹¹⁸

While the ISPS Code seeks to prevent maritime terrorism and minimise its effects, the SUA Convention and Protocols assert the prohibition of terrorist tactics. As a party to this convention, Canada has implemented its provisions in a couple of ways, twice over in fact. First, the proscriptions of the 1988 Convention and Protocol have been engraved directly in Canada's *Criminal Code*.¹¹⁹ Canada has not enacted the 2005 amendments to SUA but perhaps that is not so surprising since they are not yet in force internationally. Second, Canada has included the 1988 SUA offences in its own domestic anti-terrorism laws. In further additions to the *Criminal Code*, Canada has proscribed "terrorist activity" which is defined, in part, by reference to the offences under the SUA Convention and Protocol.¹²⁰ Moreover, the Criminal Code goes on to prohibit a wider range of criminal actions that support terrorism. These include providing, collecting, making available or using property for terrorist activity,¹²¹ all of which are capable of encompassing terrorist attacks against ships, engaging ships to deliver terrorist bombs or other materiel, and using ships as terrorist weapons.

¹¹⁵ Id., ss. 2.1, 13.5, 13.6 & Sched. 2, Part 1.

¹¹⁶ *Marine Transportation Security Act*, n. 100 above, ss. 2(1), 33–46, 49 & 50 and SOR/2004-144, Part 6.

¹¹⁷ Id., Act s. 33(1)(b) and SOR/2004-144, Part 6.

¹¹⁸ Id., Act ss. 33(1)(a) & 35 and SOR/2004-144, Part 6.

¹¹⁹ *Criminal Code*, R.S.C. 1985, c. C-46, s. 78.1

¹²⁰ Id., s. 83.01.

¹²¹ Id., ss. 83.02, 83.03, 83.04.

11.3.2.2. Canadian Policy Developments

Transport Canada has declared that its marine security vision is “a nationally and internationally recognised marine transportation system that is secure, efficient and respects Canadian values.”¹²² Within that vision, the government department has a continuing mission that will “with partners, increase the level of Canada’s Marine Transportation Security System against: 1. unlawful interference, 2. terrorism attack, and 3. terrorist exploitation of it as a conduit to attack our allies.”¹²³ The Interdepartmental Marine Security Working Group (IMSWG), formed by the Canadian government following the attacks of 11 September 2001, leads fulfilment of this mission. Chaired by Transport Canada, the IMSWG coordinates the marine security efforts of nine other departments: Canada Border Services Agency, Canadian Security and Intelligence Service, Department of Citizenship and Immigration, Department of Fisheries and Oceans, Department of Foreign Affairs and International Trade, Department of Justice, Department of National Defence, Royal Canadian Mounted Police, and Solicitor General of Canada.¹²⁴ Together, these departments have undertaken a variety of security enhancing initiatives (in addition to the administrative programmes to operate and enforce the regulatory schemes already discussed) of which the following are of particular note.

Scanning of cargo containers and their contents on arrival in Canada has been identified as an important security precaution. Two types of scanning equipment are operated. The Canada Border Services Agency employs a number of Vehicle and Cargo Inspection Systems or VACIS units for the purpose of scanning the contents of containers. These units are truck mounted, mobile, gamma ray scanning equipment that can generate an image of even densely loaded containers.¹²⁵ Whether a container is taken temporarily out of the supply chain for VACIS scanning depends on the risk it is assessed to present. This risk assessment is made by CBSA for every arriving container by screening the information supplied by carriers 24 hours before the container is loaded in the port of origin, as described previously.

A second scanning effort detects radioactive materials. By arrangement with the terminals, every container, as soon as it is offloaded from the ship by crane and placed on a terminal transporter, is driven through a radiation

¹²² Transport Canada, “Mission” (n.d.), available: <<http://www.tc.gc.ca/MarineSecurity/Strategic/mission.htm>> (retrieved 4 December 2008).

¹²³ Id.

¹²⁴ Transport Canada, “Government of Canada Announces up to \$172.5 million in New Marine Security Projects,” *News Release* (22 January 2003), available: <<http://www.tc.gc.ca/mediaroom/releases/nat/2003/03-gc001.htm>> (retrieved 4 December 2008).

¹²⁵ Id.

detection portal before being stacked in the yard or loaded for onward surface transport.¹²⁶ Any container that is shown to hold radioactive material is then isolated for further testing and investigation.¹²⁷

Domain awareness is another important aspect of Canada's marine security system. Canada operates an air surveillance programme that conducts patrols both within and without Canada's 200 nautical mile coastal zone for security purposes, fisheries enforcement, pollution detection, and sea ice coverage. The Department of National Defence is promoting an advanced radar system that can follow the curvature of the earth over the oceans. The Canadian Coast Guard is responsible for the shore-based components required to operate the automatic identification system (AIS) now required of ships by IMO.¹²⁸ Canada also fully supports the work of IMO to establish a global Long Range Identification and Tracking (LRIT) system for ships, which is now at the testing stage. The necessary regulations to implement Canada's participation in the system are being drafted under the *Canada Shipping Act, 2001* and should be in place during 2009. Canada is also committed to provide a national data centre for LRIT data exchange.¹²⁹

Cruise shipping in Canadian waters has grown greatly in recent years. Whether visiting port cities, cruising inland waters, or exploring the Canadian Arctic, these vessels pose a specific set of security risks beyond merchant shipping on account of the numbers of passengers on board. The requirements of the ISPS Code are enforced and security clearance is required of all personnel who service a cruise ship at sea or in port. In addition, everyone who goes on board or enters the restricted area around the dock is subjected to screening and search. Even so, Transport Canada is working towards a specific set of measures specially designed for cruise ships.¹³⁰

Separate consideration has been given to passenger vessels classed as "tall ships." These visiting (training and cruising) sailing ships are subject to special security arrangements in accordance with ISPS Code standards, which

¹²⁶ L. Kinney, Director General of Marine Security, Transport Canada, pers. comms. (17 October & 16 November 2008).

¹²⁷ See Transport Canada, n. 122 above.

¹²⁸ *Id.*

¹²⁹ Canadian Marine Advisory Council, Marine Security Standing Committee, *Minutes of meeting* (29 April 2008), available: <<http://www.tc.gc.ca/marinesafety/rsqa/cmac/pdf/2008-apr-committee-marine-security-min.pdf>> (retrieved 4 December 2008).

¹³⁰ See Transport Canada, n. 124 above.

will be reviewed in the context of an overall review of Canada's marine security regulations of 2004.¹³¹

Finally, domestic coastal shipping is also the subject of security consideration. A risk assessment of different types of domestic shipping, including ferries, small commercial vessels, fishing boats and pleasure craft, as well as the port facilities they use, is being undertaken with a view to developing an appropriate security strategy. The higher risk classes of vessels, such as the large and busy vehicle and passenger ferries operating in British Columbia, will be subject to security requirements akin to the ISPS Code in order of priority. In 2008, active consultation with industry was being undertaken. Eventually the strategy will cover all domestic shipping by regulatory provisions that demand security measures commensurate by type of vessel and marine activity with the risk presented.¹³²

11.3.2.3. Canadian Co-operation with the United States

As an immediate neighbour of the United States by land and sea, Canada has been co-operatively involved in North American security in all modes of transport. Perhaps more indicative than anything else, the response of Canada to the events of 11 September 2001 was immediate and supportive of its neighbour's concerns about security. In addition to Canadian authorities providing a safe haven for those air passengers en route to the United States that day and unable to enter the United States during the air space lock down, Canada moved quickly to open a dialogue with US authorities on how matching regulations might be adopted so as to expedite security procedures while maintaining trade relationships. On 12 December 2001, Tom Ridge (responsible for US security) and John Manley (Canada's Minister of Foreign Affairs) agreed on a common security approach, and signed a 30-Point Smart Border Declaration and Action Plan. The Smart Border list of projects included many that could be incorporated into a North American "perimeter clearance" process, including the agreement to station customs inspectors at each other's seaports for targeted maritime container inspections. Subsequent execution of this initiative, however, now means that US Customs may inspect marine containers at Canadian seaports, and then again at land border crossings, in

¹³¹ See Kinney, n. 126 above. See also Transport Canada, *Transportation in Canada 2005* (2005), available: <http://www.tc.gc.ca/pol/en/Report/anre2005/4B_e.htm> (retrieved 4 December 2008).

¹³² See Kinney, n. 126 above. See also Canadian Marine Advisory Council, n. 129 above.

addition to the inspection that might have been undertaken in advance of loading in the foreign port through the CSI.

A 2004 compendium of Canada-US government collaboration identified two bilateral institutional arrangements relevant to marine security issues—the Canada-US Transportation Security Co-operation Group (with the Transportation Security Administration), and the Bi-National Marine Security Compliance and Enforcement Working Group.¹³³ These administrative arrangements facilitate the operation of their respective national security officers and laws across their shared borders. In addition the Security and Prosperity Partnership signed between Canada, the United States, and Mexico at Waco, Texas, in 2005 set two relevant targets for North American security: (1) “Make compatible US-Canada requirements for participation in Customs-Trade Partnership Against Terrorism (C-TPAT) and Partnership in Protection (PIP) within 36 months” (June 2008), and (2) “Develop appropriate linkages, including officer exchanges among Canadian, Mexican and US customs agencies, to ensure analysis of cargo data and appropriate sharing of information on high-risk shipments.”¹³⁴ There is no evidence that the first target has been reached, and while the second was reported in 2006 as initiated,¹³⁵ it can be considered in development. A detailed report on the progress achieved at the 2008 Summit of the three partners was not published; all that was released was a brief joint ministerial declaration indicating continued emphasis on security issues. It is too soon to have a clear understanding of what might be achieved under the Obama Administration.¹³⁶

An example of the Canada-United States bilateral relationship in operation is the application of their separate marine security regulations. Having determined they provide equivalent levels of security, the two states reached an arrangement for the reciprocal recognition and acceptance of each other’s documentary approval of a vessel’s security plan. This arrangement was first established in June 2004 and has since been amended to accommodate alternative security arrangements for passenger vessels and ferries that operate

¹³³ D. Mouafo, N. P. Morales, and J. Heynen, *Building Cross-Border Links: A Compendium of Canada US Government Collaboration* (Ottawa: Canada School of Public Service, 2004), pp 147–152, available: <<http://dsp-psd.pwgsc.gc.ca/Collection/SC103-6-2004E.pdf>> (retrieved 4 December 2008).

¹³⁴ Security and Prosperity Partnership of North America, *Report to Leaders* (June 2005), available: <<http://www.spp.gov>> (retrieved 4 December 2008).

¹³⁵ Security and Prosperity Partnership of North America, *Report to Leaders II*, August 2006, available: <<http://www.spp.gov>> (retrieved 4 December 2008).

¹³⁶ Security and Prosperity Partnership of North America, “Joint Statement by Ministers Responsible for the Security and Prosperity Partnership of North America,” Press Release *Commerce News* (28 February 2008), available: <http://www.spp.gov/news/news_02282008.asp> (retrieved 4 December 2008).

on short fixed routes between the two countries on their Pacific and Atlantic coasts as well as across the rivers and lakes that separate them.¹³⁷ Subsequently a Canada-United States Maritime Security Working Group was created in February 2006 to enhance the facilitation of their respective marine security operations.¹³⁸ Topics of discussion between Canada and the United States have included joint vessel inspections of foreign flagged ships, reciprocal port visits to develop best practices, and seafarers' identity documents.¹³⁹

11.4. EU and Canadian Approaches to Maritime Security Compared

The approaches to maritime security of the EU and Canada display points both of convergence and divergence. Convergence in this context signifies similar or parallel implementation of security measures. Exactly the same tools are not necessarily used on both sides of the Atlantic Ocean; indeed maritime security regimes are typically works in progress, but both the EU and Canada can be seen as converging in their actions when they take steps for the same purpose towards the same goal.

A striking feature of the international maritime security regime at large is that its compulsory components—chiefly Part A of the ISPS Code—address the risk of terrorist threats to ships and ports but do not focus on that which gives purpose to their existence, that is to say, their cargoes. Cargo security has not been ignored, however; cargo protection is only advanced internationally by hortatory guidelines for supply chain management, such as those produced by WCO, and by whatever extra-territorial reach may be achieved by national initiatives, such as the US Cargo Security Initiative, the US Customs-Trade Partnership Against Terrorism initiative, and the Canadian Partners in Protection programme. Whatever the merits of the difference in attention paid to the elaboration and enforcement of security regimes for ships, ports and cargoes, the international character of the measures concerning ships and ports almost inevitably ensures a degree of uniformity in application that the

¹³⁷ Bilateral Arrangement between Transport Canada and the United States Coast Guard, available: <http://www.tc.gc.ca/Marine_Security/Relationships/USA/menu.htm> (retrieved 4 December 2008).

¹³⁸ Canadian Marine Advisory Council, *Minutes of meeting* (3 May 2006), available: <<http://www.tc.gc.ca/marinesafety/rsqa/cmac/minutes/2006-may-committee-marine-safety-report.htm>> (retrieved 4 December 2008).

¹³⁹ Canadian Marine Advisory Council, *Minutes of meeting* (7 November 2007), available: <<http://www.tc.gc.ca/marinesafety/rsqa/cmac/pdf/2007-nov-committee-marine-security.pdf>> (retrieved 4 December 2008).

essentially national development and proliferation of cargo initiatives cannot be expected to achieve. In light of these observations, the EU and Canada might be expected to converge in their actions to advance ship and port security but potentially to diverge in their approaches to trade and cargo security issues, especially as presented to them by US initiatives. The evidence drawn from the discussion above in this chapter confirms these expectations.

Given the multilateral uniformity of maritime security imposed by the ISPS Code of the IMO and related programmes of other intergovernmental organisations—the multilateral platform as it has been described here, it is not surprising to find a high degree of convergence in EU and Canadian marine security regulations. Only small differences appear in their practices around the edges of the multilateral platform.

In addition, both the EU and Canada have been faced with the need to respond to US security concerns. Their large and well-developed trading relations with the United States have encouraged broad cooperative arrangements bilaterally for the implementation of the ISPS Code. However, beyond the multilateral platform, and in response to the unilateral security initiatives of the United States concerning the cargo traffic carried by ships, the actions of the EU and Canada are more divergent. The different geographical, political and economic contexts of their relations with the United States presage a different outlook on the priorities for enhancing the cargo-related aspects of maritime security.

These general observations about EU and Canadian approaches are substantiated by the following dialogue about the specific measures that each has, or has not, undertaken or proposed. Convergence around the ISPS Code is nearly complete. In respect of ships, Part A of the Code is mandated and Part B is also applied or followed closely. In addition, although the ISPS Code does not apply to domestic shipping, the EU has already imposed it on vessels that carry more than 12 passengers and Canada is working on a comparable security strategy for its domestic ferries. In one respect Canada has gone further than the EU, and, indeed further than the ISPS Code demands, by applying the Code to ‘non-SOLAS’ ships, i.e. to classes of foreign-going vessels that are smaller than the ships regulated by SOLAS. Finally, in accordance with other IMO requirements under SOLAS, both the EU and Canada require ships to be equipped with an operable Ship Security Alert System.

Regarding ports and harbours, the EU and Canada require the security plans and measures of the ISPS Code in all marine facilities that serve ships on international voyages. They also both mandate restricted access and personnel security clearance in sensitive areas around ships in port. In addition the EU already does, and Canada will, apply measures at least complementary to the

ISPS Code to the facilities that service domestic shipping that is subjected to security requirements.

The prescriptions of the ISPS Code are the subject of criminal penalties in the event of violation in both the EU and Canada, but, in addition, Canada imposes two types of alternative, intentionally streamlined and quicker, administrative penalties. Instead of prosecution, an alleged perpetrator of an offence may be charged with a violation and fined unless a timely appeal is launched for a hearing about the incident, or a perpetrator may be invited to sign an assurance of voluntary compliance in future in addition to paying a fine for the past violation.

Concerning seafarers, convergence also marks the steps the EU and Canada are taking towards security clearance and identification. Neither yet applies the ILO's revised Convention on Seafarers' Identity Documents but the EU has requested Member States to ratify it and Canada is working towards its implementation. Respecting the 2005 Protocol, which increases the criminal offences under the SUA Convention, the EU has similarly urged its Member States to ratify it. Canada has not, as yet, ratified the Protocol but already has wider criminal proscriptions against terrorism than the SUA Convention.

Marine surveillance and domain awareness are important matters of current concern to both the EU and Canada. Both are working with IMO to establish its proposed LRIT and both operate multiple ship, air and radar surveillance systems over their marginal seas together with national databases. The EU is additionally seeking to unify and enhance the existing Member States' ship tracking systems by establishing a Europe-wide marine observation and data network.

Beyond these internal actions and policies, the EU and Canada also recognise cooperation with other states as an essential part of the struggle to suppress maritime terrorism. Canada believes its interests are best served by working with like-minded states in institutional capacity building, in harmonising operational guidelines and standards, and in sharing best practices over maritime security. It pursues these objectives by fostering global partnerships through, for example, the G8 Roma/Lyon Process, Asia-Pacific Economic Cooperation's Marine Security Experts Sub-Group and the Organization of American States.¹⁴⁰ The EU has similar external cooperative involvements in addition to its internal thrust to achieve a unified and integrated

¹⁴⁰ Remarks of L. Kinney, Director General of Marine Security, and Marc Mes, Director, Marine Security Operations, Transport Canada, at "Canada and the IMO: Maritime Symposium 2008," Halifax, Nova Scotia, 17 November 2008.

marine policy, including maritime security, over the common European maritime area.¹⁴¹

Of particular importance to both the EU and Canada are their relations with the United States. Both have established a variety of bilateral institutional relationships and administrative arrangements with the United States for the furtherance of maritime security. Specific cooperative activities as a result of these arrangements include the posting of US Customs and Border Protection agents in EU and Canadian ports, and reciprocal appointment of customs officers in US ports. These postings implement the US Container Security Initiative, although Canada's participation predates the formal establishment of that US programme. Canada and European Member States have also pursued with the United States a varying degree of bilateral discussion or agreement about boarding and inspecting each other's flagged vessels.

The US CSI 96-hour and 24-hour security programmes discussed above have heavy information requirements that have not been resisted by other states, probably as a result of their desire to maintain positive trade and economic relations with the United States. However, the cargo related data demanded by the United States continues to increase. For example, the latest addition at the time of writing was the so-called "10 + 2 Rule," which was submitted in November 2008 to the US Federal Register as an interim final rule with effect 60 days after publication. This Rule requires importers to submit 10 data elements about their cargo at least 24 hours before it is loaded in the port of origin and demands carriers supply two further data elements—the vessel's stowage plan and any container status messages—within 48 hours of departing from that port. It is anticipated that these greater informational demands by the United States in its pursuit of cargo security will be mutely accepted as the industry has adapted to the rising volume of similar requirements in the past.

Canada cooperates with the United States in maritime security further than the EU in two particular ways. Canada and the United States have a bilateral arrangement for the reciprocal recognition of each other's ship security documentation. Canada has also established a comparable cargo programme, Partners in Protection, to the US C-TPAT initiative that is supposed to fast-track containerised cargo at border crossings.

The present point of divergence in this otherwise cooperative spirit amongst the EU, Canada and the United States appears to be their policies about cargo scanning. The US *SAFE Port Act* sets the level of scanning of arriving containers at 100 percent. This target, already noted to be likely to fail

¹⁴¹ The EU also exercises unique supranational authority to impose a mandatory inspection and compliance regime over Member States. This power adds an extra layer of maritime security oversight to which Canada is not subject.

in implementation in the United States, is supposed to be achieved by 2012. At present, the EU and Canada only engage in scanning a small percentage of containers as a result of their risk assessments of cargo documentation. Neither seems intent on increasing the proportion of its own scanning. Moreover, while Canada has not spoken out, the EU has expressed strong objections to US plans to advance to 100 percent scanning of inbound containers, asserting that the costs and delays involved will be severe. For certain, the physical interruption in the movement of containers for the purpose of scanning their cargo contents is a very much greater interference in the free flow of the international supply chains than the heavy informational burden of advanced notification about those cargoes. As a result, it is argued, trade will be inhibited and competitiveness will be reduced. In any case, 100 percent cargo scanning would amount to abandonment of the risk management approach espoused throughout the multilateral platform of maritime security as well as the United States' own programmes, as the US Government Accountability Office itself has reported.¹⁴²

A quite separate aspect of maritime security that is worthy of consideration is the repetitive nature of security checks liable to be imposed even in a supposedly security fast-tracked supply chain, such as those of US C-TPAT participants, or of AEOs within the SAFE Framework guidelines of the WCO. A single container of cargo may pass through several frontiers from its inland origin, across the ocean, and on to its inland destination; to use the language of the ISPS Code, such a container will be involved in a number of ship, port and terminal interfaces. For example, a cargo from Germany bound for Chicago via Rotterdam and Halifax, Nova Scotia, might be interdicted for inspection at the German/Dutch frontier, in the port of Rotterdam, in the port of Halifax, and at the US/Canadian border. While each state is entitled to exercise its sovereign powers to inspect cargo arriving at its borders, the multiplicity of effort to apply the ISPS Code-mandated or similar measures at every stage of the movement seems excessively wasteful of resources and likely to create unnecessary delay in trade deliveries. One may legitimately wonder about the success of the risk management approach to maritime security when, as reported, a shipment can suffer 28 security documentation or inspection

¹⁴² Government Accountability Office, n. 94 above, p. 18. Perhaps changes are afoot. The latest indications, in April 2009, are the Obama Administration is moving away from its expectation of 100 percent inbound containerscanning. Attributed to Secretary Janet Napolitano by Ahern, Jayson (2009), Testimony before the House Appropriations Committee, Subcommittee on Homeland Security, on Cargo and Container Security, April 1, 2009, available: http://www.dhs.gov/ynews/testimony/testimony_1238603858577.shtm (retrieved 10 April 2008).

requirements in one 5-day voyage between Canada and the United States.¹⁴³ This unspoken problem of administration seems to beg the attention of the EU and Canada as well as other states that promote risk management of maritime security.

11.5. Conclusion

The EU and Canada have each put in place the ISPS Code and are moving towards fulfilment of the other elements of the multilateral platform of international maritime security. In these endeavours they have worked cooperatively with third countries, particularly the United States. Now they are addressing the security threats to their domestic shipping in apparently comparable ways. A very high level of convergence in the approaches of the EU and Canada to maritime security is evident. Divergence from the ISPS Code, in the form of unilateral action exceeding its requirements, only seems to occur in two respects: (1) the application by Canada of the ISPS Code to smaller, “non-SOLAS” ships, and (2) the use by Canada of administrative penalties as alternatives to the criminal prosecution of Code violators.

The most significant divergence between EU and Canadian perspectives arise over cooperation with the United States. Canada clearly has a closer operational relationship than the EU with the United States. Amongst cooperative practices, their reciprocal recognition of shipping security documents is clear evidence of that. By contrast, while Canada, like the EU, only engages in scanning a small percentage of cargo containers, the EU has spoken strongly against the United States’ goal of 100 percent scanning. This difference of opinions over the cost effectiveness and risk management of different degrees of cargo scanning is likely to present on-going problems in the administration of cargo security programmes on the ground and to require continuous negotiations at the policy level between the EU and the United States as well. Canada has not made public its views on the issue but, given its shared landmass and borders with the United States, it is obviously more difficult for Canada to resist its neighbour’s initiative even if it wishes to.

Yet the potential tension over this difference in plans and perspectives may, perhaps, be relieved ultimately by the inability of the United States to reach its goal of 100 percent scanning as a result of the practical problems it presents, and the difficulty, as the US Government Accountability Office has

¹⁴³ As recounted by J. Greenway, Vice-President Operations, Seaway Marine Transportation, at “Canada and the IMO: Maritime Symposium 2008,” Halifax, Nova Scotia, 17 November 2008.

reported, that the United States is having in fulfilling the mandate of the SAFE Port Act. A more pressing problem that seems not to have been engaged by the EU, Canada or the United States in promoting maritime security is the expense, wasted effort and delay, along with the resulting costs incurred by commercial parties, consumers and taxpayers, that may be occasioned by multiple cargo scans and documentary checks. The EU and Canada, along with the United States, appear to need to extend their dialogue about the administrative quality and efficiency of their risk management of maritime security.

Chapter 12

Illegal Immigration by Sea as a Challenge to the Maritime Border Security of the European Union with a Special Focus on Maritime Surveillance Systems

Henna Tervo, Kamrul Hossain, and Adam Stepien

12.1. Introduction

This contribution introduces illegal immigration across maritime borders as one of the most topical challenges to the maritime border security of the Member States of the European Union (EU). The study pays special attention to maritime border surveillance, which plays a crucial role in ensuring efficient border security and control, and tackles the problem of unlawful acts, such as unauthorised border crossings, terrorism, trafficking in human beings, drug smuggling, and illicit arms trafficking.

Prevention of illegal immigration is a top priority issue in the EU's agenda. The majority of illegal immigrants entering the EU by sea originate from African countries. They come across the Mediterranean Sea or the Atlantic Ocean between Africa and the Canary Islands. The sea crossing threatens the lives of many immigrants as they often travel by boats that are unseaworthy and overcrowded. Accidents occur and many unfortunate immigrants lose their lives at sea.

The immigrant pressure from Africa with its unfortunate consequences is expanding, and therefore the issue has become a subject of increasing attention in the EU. While illegal immigration was put under EU jurisdiction in 1999, external border control and surveillance continues to be responsibility of the Member States. Current border controls provide insufficient coverage, and parallel competences have proven to be inadequate to prevent immigration flows. In order to enhance surveillance, the EU has undertaken a series of initiatives—including enhanced integration of surveillance systems and cooperation between various agencies responsible for migration control and border surveillance, and the creation of the Frontex agency—and continues to aim at more effective border management at both the national and European level.

This contribution describes the problem of illegal immigration by sea and its extent in the European Union. It outlines the most relevant EU policies and regulations related to it. Rights and obligations provided by international legal

instruments are examined separately. Special attention is paid to the current surveillance systems of the Member States and the EU. Finally, the main EU proposals to enhance the control of the marine borders of the southern Member States, in particular the proposal to establish the European Border Surveillance System (EUROSUR), are outlined.

12.2. The Problem of Illegal Immigration Across the Maritime Borders of the EU Member States

Illegal immigration is defined here as an unauthorised entry of a third-country national to the territory of a Member State of the EU by land, sea or air. This definition also includes third-country nationals who arrive in EU with a valid visa but do not depart after their visa has expired and asylum seekers who refuse to leave after the rejection of their application for asylum. The focus here is merely on the aspects of illegal immigration by sea and does not cover immigrants who already are in a Member State seeking asylum, those who have overstayed their visa, or immigrants arriving in the EU through external borders other than maritime borders.

Illegal immigration is a major challenge for the EU; it is estimated that there are between 4.5 and 8 million illegal immigrants living in the Union at present and the figure increases by approximately 350,000–500,000 per year.¹ The majority of illegal immigrants trying to enter the EU by sea come across the western and central Mediterranean Sea and the Atlantic Ocean between Africa and the Canary Islands. The main immigrant flows depart from Libya, Morocco, Tunisia, and northern Mauritania aiming to reach either the mainland of Spain or Italy or their islands, such as the Canary Islands and Sicily, or the island state of Malta. Most immigrants originate from sub-Saharan and other parts of Africa and have first travelled long distances to reach the departure countries.² Another route, used mostly by Middle Eastern and Central Asian migrants, goes across the eastern Mediterranean Sea.³

¹ Commission of the European Communities, “Towards a comprehensive European Migration Policy: Cracking down on employment of illegal immigrants and fostering circular migration and mobility partnerships,” *Press releases RAPID* (IP/07/678, 16 May 2007), available: <<http://europa.eu/rapid/pressReleasesAction.do?reference=IP/07/678&format=HTML&aged=0&language=EN&guiLanguage=en>> (retrieved 20 January 2007).

² “Key facts: Africa to Europe migration,” *BBC News* (2 July 2007), available: <<http://news.bbc.co.uk/2/hi/europe/6228236.stm>> (retrieved 10 July 2008).

³ Frontex, “Joint MTM Map on Irregular Mediterranean and African Migration Routes, Mediterranean Transit Migration,” *Press releases of FRONTEX* (22 January 2007), available:

The crossing is highly risky as the boats and vessels used are often unseaworthy and/or overcrowded. Accidents are common and many lives are lost at sea. During the past few years, thousands of Africans are believed to have died at sea in their attempts to reach Europe.⁴ The use of cargo vessels, fishing boats and pleasure crafts as a way to transfer illegal immigrants is also widespread and problematic for the EU although not as life-threatening for the immigrants themselves.⁵ In addition, illegal immigration may have other serious consequences to the security of the EU such as trafficking in human beings, smuggling of drugs and weapons, and terrorism.⁶

The southern Member States of the EU, in particular Spain, Italy and Malta, are under great pressure as they are at the frontline receiving illegal immigrants. The figure of over 22,000 immigrants arriving to Italy by boat in 2006 demonstrates the magnitude of the problem.⁷ It is expected that the migration pressure from Africa will further increase due to, *inter alia*, the continent's rapidly growing population rate.⁸

12.2.1. Legal and Policy Framework

The legal and policy framework for illegal immigration by sea and maritime surveillance consists of policy making at the EU and national levels, as well as the provisions and principles of international law, Community law, and national legislation. The national policies and laws of the EU Member States are not

<http://www.frontex.europa.eu/newsroom/news_releases/art11.html> (retrieved 7 August 2008).

⁴ For instance, in July 2008, fourteen African immigrants were reported to have died from heat exposure during the passage and fourteen were believed to have drowned in another accident. See "Fourteen Africans die on boat to Spain," *Reuters* (10 July 2008), available: <<http://uk.reuters.com/article/worldNews/idUKL1011279720080710>> (retrieved 10 July 2008).

⁵ Programme of measures to combat illegal immigration across the maritime borders of the Member States of the European Union adopted by the Council 27 November 2003, Council doc. 15445/03, available: <<http://register.consilium.europa.eu/pdf/en/03/st15/st15445.en03.pdf>> (retrieved 14 July 2008).

⁶ Commission of the European Communities, "A Common Immigration Policy for Europe," *Press releases RAPID* (MEMO/08/402, 17 June 2008), available: <<http://europa.eu/rapid/pressReleasesAction.do?reference=MEMO/08/402&format=HTML&aged=0&language=EN&guiLanguage=en>> (retrieved 4 August 2008).

⁷ See "Key facts," n. 2 above.

⁸ "Visit to Ceuta and Melilla—Mission Report, Technical Mission to Morocco on Illegal Immigration 7th October – 11th October 2005," *Press Release* (MEMO/05/380, Brussels, 19 October 2005), available: <<http://europa.eu/rapid/pressReleasesAction.do?reference=MEMO/05/380&format=HTML&aged=1&language=EN&guiLanguage=en>> (retrieved 10 July 2008).

dealt with extensively here. The Member States are mainly examined in the context of surveillance systems as the control of the external borders of the EU continues to be their responsibility. However, there are also some surveillance measures taken by the EU that are mainly coordinative and supportive in nature. The legal basis of EU action regarding border control is provided in Article 62 (2a) of the Treaty Establishing the European Community.⁹

12.2.1.1. Background: Towards Common Immigration Policy

In contrast to border surveillance, which continues to be in Member States' control, illegal immigration came under EU jurisdiction in 1999 by the Treaty of Amsterdam.¹⁰ Since that time, the EU has sought to formulate a common migration policy, including all aspects of illegal immigration, and has taken a series of initiatives to reach the goal.¹¹ It is worth noting, however, that while

⁹ Article 62(2a) reads: "The Council [...] shall, within a period of five year after the entry into force of the Treaty of Amsterdam, adopt [...] measures on the crossing of the external borders of the Member States which shall establish: (a) standards and procedures to be followed by Member States in carrying out checks on persons at such borders." *Consolidated version of the Treaty Establishing the European Community* (consolidated text), published in *Official Journal C 325* of 24 December 2002, available: <http://eur-lex.europa.eu/en/treaties/dat/12002E/pdf/12002E_EN.pdf> (retrieved 22 August 2008). Further regulation on external border control is provided in the Schengen Borders Code, of which Article 12 deals with border surveillance in general terms, Regulation (EC) No 562/2006 of the European Parliament and of the Council of 15 March 2006 establishing a Community Code on the rules governing the movement of persons across borders [hereinafter Schengen Borders Code], available: <http://eur-lex.europa.eu/smartapi/cgi/sga_doc?smartapi!celexplus!prod!DocNumber&lg=en&type_doc=R egulation&an_doc=2006&nu_doc=562> (retrieved 22 August 2008).

¹⁰ In particular, paragraph 3(b) of Article 63 put immigration under the competence of the EU; *Treaty of Amsterdam amending the Treaty on European Union, the Treaties establishing the European Communities and related acts*, adopted by the European Council on 16 and 17 June 1997, signed on 2 October 1997 by the Foreign Ministers of the fifteen Member States and entered into force on 1 May 1999, *Official Journal C 340* (10 November 1997), available: <<http://eur-lex.europa.eu/en/treaties/dat/11997D/htm/11997D.html>> (retrieved 9 July 2008).

¹¹ The first real call for common policy on immigration and asylum was made in the European Council Meeting in Tampere in 1999. For an overview of the early years' progress towards a common immigration policy, see Committee of the Regions, *Local and Regional Authorities and the Immigration Challenge* (Luxembourg: Office for Official Publications of the European Communities, 2005), pp. 15–24; see also, Commission of the European Communities, *Common policy on illegal immigration*, Communication from the Commission, COM(2001) 672 (Brussels, 15 November 2001) available: <http://eur-lex.europa.eu/smartapi/cgi/sga_doc?smartapi!celexplus!prod!DocNumber&lg=en&type_doc=COMfinal&an_doc=2001&nu_doc=672> (retrieved 15 August 2008) [European Commission's Communications cited hereinafter by the main title]. Of special importance among the EU initiatives to promote a common migration policy are the three Council action plans on illegal immigration, external border control and

several legislative instruments have been adopted, e.g., in asylum, relatively few binding regulations and directives have been adopted on illegal immigration, aside from several binding decisions of the Council of the European Union.¹²

Despite the progress so far, the EU continues to strive for further integration on illegal immigration, asylum, and other migration issues.¹³ The goal of the EU's migration policy is two tiered: preventing illegal immigration on one hand, and encouraging legal migration on the other, in order to ensure the sustainability of the labour market of the EU.¹⁴ The main tools of the first goal are, *inter alia*, reinforcing external border security, strengthening cooperation with third countries, fighting against trafficking of human beings, preventing illegal employment, and improving return policies.¹⁵

Of special concern for the EU are immigrants in a genuine need of asylum whose access to the EU is given priority.¹⁶ However, EU policy has

return policy, namely Council doc. 6621/1/02: Proposal for a comprehensive plan to combat illegal immigration and trafficking of human beings in the European Union, available: <<http://register.consilium.europa.eu/pdf/en/02/st06/06621-r1en2.pdf>> (retrieved 14 July 2008); Plan for management of the external borders of the Member States of the European Union, Council doc. 10019/02, available: <<http://register.consilium.europa.eu/pdf/en/02/st10/10019en2.pdf>> (retrieved 1 August 2008); and Proposal for a Return Action Programme, Council doc. 14673/02, available: <<http://register.consilium.europa.eu/pdf/en/02/st14/14673en2.pdf>> (retrieved 15 July 2008).

¹² A list of EU legislation, Community acts, and main proposals regarding illegal immigration is available on the website for Justice, Freedom and Security of the European Commission at <http://ec.europa.eu/justice_home/doc_centre/immigration/illegal/doc_immigration_illegal_en.htm> (retrieved 14 July 2008).

¹³ E.g., Commission of the European Communities, *A Common Immigration Policy for Europe: Principles, actions and tools*, Communication from the Commission, COM(2008) 359, available: <<http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=COM:2008:0359:FIN:EN:PDF>> (retrieved 4 August 2008); for an evaluation of the EU immigration policy, see, e.g., P. Bendel, "Immigration Policy in the European Union: Still bringing up the walls for fortress Europe?" *Migration Letters* 2 (April 2005), pp. 20–31.

¹⁴ Unambiguous encouragement for legal migration was given, for example, in the COM(2006) 735, which states that "the EU will need migrants to ensure the sustainability of its labour markets given its demographic developments." The main aspect of the demographic change is the ageing European population resulting in the lack of workforce, see Committee of the Regions, *Local and regional authorities and the immigration challenge* (Luxembourg: Office for Official Publications of the European Communities, 2005), p. 13.

¹⁵ Commission of the European Communities, *Policy priorities in the fight against illegal immigration of third-country nationals*, Communication from the Commission, COM(2006) 402 (Brussels, 19 July 2006), available: <http://eur-lex.europa.eu/smartapi/cgi/sga_doc?smartapi!celexplus!prod!DocNumber&lg=en&type_doc=COMfinal&an_doc=2006&nu_doc=402> (retrieved 11 July 2008).

¹⁶ E.g., Commission of the European Communities, *Policy plan on asylum – An integrated approach to protection across the EU*, Communication from the Commission, COM(2008) 360

been criticised as “sealing of the borders of European States” and not providing adequate refugee protection.¹⁷

12.2.1.2. Increasing Attention on Illegal Immigration by Sea

In recent years, illegal immigration through maritime borders has attracted rapidly increasing attention in the EU. The expanding immigrant pressure from Africa and its consequences, in particular the high death toll of unsuccessful sea crossings, have been the focus of this attention.

In September 2003, the Commission presented a report of a study conducted by CIVIPOL regarding the control of the EU’s maritime borders.¹⁸ The extensive report revealed loopholes of the maritime borders. It identified five priority areas to enhance control, namely, identification of illegal immigration routes, cooperation with third countries of origin and transit, introduction of effective operational structures for coordination between Member States, identification of the best technologies available, and the legal aspects of maritime border controls. Furthermore, the report laid the foundation for a programme of measures to combat illegal immigration across the maritime borders of the EU Member States, which was adopted in 2003.¹⁹ The 16-paged programme proposed a number of measures, mostly operational, to enhance border control. It highlighted the importance of relations with the third countries from which illegal migration flows originate or through which they pass, as well as the importance of strengthened cooperation between the Member States. In 2004, the Council conducted an assessment of the implementation of the programme of measures. The assessment recognised the progress already made but also called for further operational and legislative measures to meet the requirements of the programme.²⁰ Additionally,

(Brussels, 17 June 2008), available: <<http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:52008DC0360:EN:HTML>> (retrieved 4 August 2008).

¹⁷ M-T. Gil-Bazo, “The practice of Mediterranean States in the Context of the European Union’s Justice and Home Affairs external dimension. The safe third country concept revisited,” *International Journal of Refugee Law* 18(3–4) (September/December, 2006), pp. 571–600.

¹⁸ Council of the European Union, *Feasibility study on the control of the European Union’s maritime borders – Final report*, Council doc. 11490/1/03 (Brussels, 19 September 2003) available: <http://ec.europa.eu/justice_home/news/information_dossiers/external_border/feasibility_study_en.pdf> (retrieved 28 July 2008).

¹⁹ *Programme of measures...*, n. 5 above.

²⁰ Council of the European Union, *Draft Council conclusions evaluating the progress made with regard to the implementation of the Programme of measures to combat illegal immigration across the maritime borders of the Member States of the European Union*, Council doc.

the Council invited the Commission to conduct an in-depth study on existing international instruments in regard to illegal immigration.

In 2005, the European Union Council adopted a Global Approach to Migration.²¹ A more integrated and global approach was called for to balance diverse objectives, in particular preventing illegal immigration and benefiting from legal migration, in a way that would be beneficial to all the countries involved. Africa and the Mediterranean region were considered priority areas. The need for a global approach, especially in issues concerning both the Mediterranean and certain African countries, such as safety at sea, was highlighted. Special attention was paid to the need for further operational cooperation between Member States on maritime border control and enhanced dialogue and cooperation with all countries of the region.

The EU has also undertaken financial initiatives to prevent unwanted immigration flows. It has provided significant financial support to Member States to deal with illegal immigration through the Mediterranean Sea, e.g., by developing specific programmes such as Odysseus and ARGO.²² The support and grants awarded have been considerable. For example, under the ARGO programme in 2006, the Commission co-financed six projects in Spain, Italy, and Malta totalling more than €3 million.²³ The EU financial support to third countries has likewise been notable; this will be discussed further below.

15087/04 (Brussels, 22 November 2004), available: <<http://register.consilium.europa.eu/pdf/en/04/st15/st15087.en04.pdf>> (retrieved 14 July 2008).

²¹ Council of the European Union, Annex I to the Presidency Conclusions on the European Council meeting in Brussels 15 and 16 December 2005, *Global approach to migration: priority actions focusing on Africa and the Mediterranean*, Council doc. 15914/1/05, REV 1, CONCL 3 (Brussels, 30 January 2006) available: <http://www.consilium.europa.eu/ueDocs/cms_Data/docs/pressData/en/ec/87642.pdf> (retrieved 30 July 2008). The Global Approach to Migration built on *Priority actions for responding to the challenges of migration – First follow-up to Hampton Court, Communication from the Commission to the Council and the European Parliament*, COM(2005) 621 (Brussels, 30 November 2005), available: <<http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:52005DC0621:EN:HTML>> (retrieved 16 July 2008).

²² For further information on the ARGO programme, see Commission of the European Communities, “Argo – external borders, asylum, visas and immigration,” available: <http://ec.europa.eu/justice_home/funding/2004_2007/argo/funding_argo_en.htm> (retrieved 6 July 2008); for further information on the Odysseus programme, see “Odysseus – to help strengthen EU-wide cooperation in the field of asylum, immigration and external borders,” available: <http://ec.europa.eu/justice_home/funding/expired/odysseus/funding_odysseus_en.htm> (retrieved 6 July 2008).

²³ “Commission offers support to Spain, Italy and Malta for the reception of illegal immigrants,” *Press Releases RAPID*, IP/06/1208 (Brussels, 19 September 2006), available: <<http://europa.eu/rapid/pressReleasesAction.do?reference=IP/06/1208&format=HTML&aged=1&language=EN&guiLanguage=en>> (retrieved 5 August 2008).

12.2.1.3. International Law

Several international law instruments are relevant when considering illegal immigration across maritime borders and maritime surveillance, in particular of the United Nations Convention on the Law of the Sea (LOS Convention).²⁴ At all times, states are also obliged to respect human rights and the rights of refugees that are protected by international and regional agreements.²⁵

Surveillance measures of maritime areas are limited by a diverse set of rules in different maritime zones. As a rule, coastal states have sovereignty over their territorial sea. Despite the universally applicable right of innocent passage, coastal states have the right to prevent the passage of ships transporting illegal immigrants through their territorial waters.²⁶ To a large extent, this also applies to contiguous waters.²⁷ On high seas, due to the basic principles of the freedom of navigation and the extensive jurisdiction of the flag state, other states cannot, in principle, intervene against ships carrying illegal immigrants.²⁸ Exceptions to the rule of flag state jurisdiction are made in cases of piracy, transport of slaves, and non-authorized radio emissions, but no exception is made for the transport of illegal immigrants.²⁹ Flagless ships, often used by illegal immigrants trying to enter the EU, do not invoke freedom of navigation on the high seas and can be intercepted by any state.³⁰

²⁴ *United Nations Convention on the Law of the Sea*, 10 December 1982, available: <http://www.un.org/depts/los/convention_agreements/texts/unclos/UNCLOS-TOC.htm>, (retrieved 30 July 2008) [hereinafter LOS Convention].

²⁵ E.g., *International Covenant on Civil and Political Rights* of December 1966; *European Convention on Human Rights and Fundamental Freedoms* of 1950; *Convention relating to the Status of Refugees* of 28 July 1951; *Protocol relating to the Status of Refugees* of 31 January 1967.

²⁶ LOS Convention, n. 24 above, Article 25(1): “The coastal State may take the necessary steps in its territorial sea to prevent passage which is not innocent”; Id., Article 19(1): “Passage is innocent so long as it is not prejudicial to the peace, good order or security of the coastal State ...”; Id., Article 19(2g): “Passage of a foreign ship shall be considered to be prejudicial to the peace, good order or security of the coastal State if in the territorial sea it engages in ... the loading or unloading of any commodity, currency or person contrary to the customs, fiscal, immigration or sanitary laws and regulations of the coastal State.”

²⁷ Id., Article 33(1a): “In a zone contiguous to its territorial sea, described as the contiguous zone, the coastal State may exercise the control necessary to ... prevent infringement of its customs, fiscal, immigration or sanitary laws and regulations within its territory or territorial sea.”

²⁸ Id., Article 87, freedom of the high seas; Id., Article 92(1): “Ships shall sail under the flag of one State only and ... shall be subject to its exclusive jurisdiction on the high seas.”

²⁹ Id., Articles 99–110.

³⁰ Id., Article 110(1d).

Ships are bound by the obligation to rescue and render assistance to any person or ship in distress at sea.³¹ This applies in all cases, including the transport of illegal immigrants, and can be abused if immigrants are intentionally left in distress. Such transport usually takes place in worn-out large ships that fly under a flag of convenience and are run by criminal organisations.³²

Illegal immigration by sea is often related to smuggling. The Protocol Against the Smuggling of Migrants by Land, Air and Sea, supplementing the United Nations Convention against Transnational Organised Crime, addresses this issue.³³ The Protocol promotes cooperation among state parties and urges them to take legislative and other measures to prevent smuggling.³⁴ It proposes specific measures against smuggling of migrants by sea, which are mainly aimed at enhancing cooperation between the states “to the fullest extent possible.”³⁵ To support the Protocol, the Council of the European Union adopted a Decision to further promote cooperation and information sharing among the EU Member States that are parties to the Protocol.³⁶

³¹ Id., Article 98(1b); *International Convention on Maritime Search and Rescue*, Hamburg, 27 April 1979, entered into force 22 June 1985 and amended in 1998 and 2004, available: <http://www.imo.org/conventions/contents.asp?doc_id=653&topic_id=257> (retrieved 20 August 2008).

³² Commission of the European Communities, *Examining the creation of a European border surveillance system (EUROSUR) – Impact assessment*, Accompanying document to the Communication from the Commission, Commission staff working document, SEC(2008) 151 (Brussels, 13 February 2008), available: <<http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:52008SC0151:EN:HTML>> (retrieved 20 August 2008).

³³ *Protocol against the smuggling of migrants by land, air and sea, supplementing the United Nations Convention against Transnational Organized Crime*, adopted by UN General Assembly Resolution 55/25 of 15 November 2000 and entered into force on 28 January 2004, available: <<http://www.unodc.org/documents/treaties/UNTOC/Publications/TOC%20Convention/TOCebook-e.pdf>>. On 13 August 2008, 114 states were parties to the protocol, for a comprehensive list of signatories and parties see <<http://www.unodc.org/unodc/en/treaties/CTOC/countrylist-migrantsmugglingprotocol.html>> (retrieved 20 August 2008).

³⁴ Article 3(a) of the Protocol defines “smuggling of migrants shall mean the procurement, in order to obtain, directly or indirectly, a financial or other material benefit, of the illegal entry of a person into a State Party of which the person is not a national or a permanent resident.”

³⁵ *Inter alia*, Article 8(1) obligates state parties to give assistance on request in certain cases, e.g. when a state party suspects that a vessel flying its flag is used for smuggling of migrants. According to Article 8(2), if such a vessel flies a flag of another state party, the flag state may be notified and request authorisation to board, search or/and take measures against the vessel by other state parties. Article 8(4) obligates state parties to respond to such requests without delay. Finally, Article 8(5) gives the flag state the power to decide on which conditions and to what extent authorisation is given, and forbids states to exceed it.

³⁶ Council Decision of 24 July 2006 on the conclusion, on behalf of the European Community of the *Protocol Against the Smuggling of Migrants by Land, Sea and Air*, supplementing the

In 2007, the Commission completed a study on international instruments in relation to illegal immigration by sea.³⁷ The study examined the role and the gaps of international treaties. The study proposed clarifications and adjustments to many of the treaties it reviewed. It suggested, *inter alia*, amending the exceptions in the LOS Convention regarding the flag state's extensive jurisdiction on the high seas to include transport of illegal immigrants.

12.2.2. Current Surveillance Systems

Presently, border surveillance has become the most emphasised element of the border management policy as described by Tampere JHA Council. The Schengen Border Code defines "border surveillance" as "the surveillance of borders between border crossing points and the surveillance of border crossing points outside the fixed opening hours, in order to prevent persons from circumventing border checks."³⁸

12.2.2.1. Maritime Surveillance on the National Level

A number of separate areas of maritime surveillance can be distinguished: fisheries, vessel traffic management, and border security surveillance.³⁹ Systems not designed for border protection may also prove to be an important

United Nations *Convention Against Transnational Organised Crime* concerning the provisions of the Protocol, in so far as the provisions of this Protocol fall within the scope of Articles 179 and 181(a) of the *Treaty establishing the European Community*, 2006/616/EC; the Decision is not binding on the United Kingdom, Ireland or Denmark; available: <http://eur-lex.europa.eu/smartapi/cgi/sga_doc?smartapi!celexplus!prod!DocNumber&lg=en&type_doc=Decision&an_doc=2006&nu_doc=616> (retrieved 20 August 2008).

³⁷ Commission of the European Communities, *Study on the international law instruments in relation to illegal immigration by sea*, Commission staff working document, SEC(2007) 691 (Brussels, 15 May 2007), available: <http://ec.europa.eu/justice_home/doc_centre/immigration/illegal/doc/sec_2007_691_en.pdf> (retrieved 11 July 2008).

³⁸ Council Regulation EC/562/2006 establishing a Community Code on the rights governing the movement of persons across borders (Schengen Borders Code), 15 March 2006, *Official Journal* L 105/1, 13 April 2006, Art. 2.11.

³⁹ S. Ruzittu, "The new roles of European navies: the maritime and air surveillance. National experience and coordination among administrations" (Lisbon, 18 September 2007); Commission of the European Communities/Joint Research Centre Ispra, *Working Document III on Maritime Surveillance Systems* (Italy, 14 June 2008), available: <http://ec.europa.eu/maritimeaffairs/pdf/maritime_policy_action/maritime-surveillance_en.pdf> (retrieved 7 August 2008) [hereinafter Ispra], pp. 2, 6.

element of action against irregular migration. It is possible, owing to fisheries or maritime traffic surveillance, not only to supervise ship movements but also to easily distinguish (e.g., on the satellite or radar picture) vessels lawfully performing their business from those possibly carrying illegal immigrants or used for drug trafficking or smuggling. In the light of the loss of so many migrants' lives, distress and safety systems may also become useful. In general, the more systems that are being used at the same time reduce the possibility of overlooking a threat or unwanted vessel.⁴⁰

It is worth mentioning several important national and International Maritime Organization (IMO) systems of non-border security surveillance operating in European waters:

- a) The vessel monitoring system (VMS) used for monitoring fisheries.⁴¹
- b) The automatic identification system (AIS) designed for maritime safety and collision avoidance. EU Member States are obliged to prepare on-shore installations for receiving and utilising the AIS information.⁴²
- c) The vessel traffic services (VTS) designed for areas of dense shipping.⁴³
- d) The long range identification and tracking (LITR) regulated system under SOLAS for monitoring vessels located farther from the shore. It is mandatory, e.g., for passenger vessels and larger cargo ships. In 2007, EU Member States agreed to create the EU LITR Data Centre managed by the European Maritime Safety Agency (EMSA).⁴⁴

Additionally, there are other reporting regimes and maritime safety systems.⁴⁵

Each Member State has its own border surveillance system, procedures and agencies responsible for border protection. According to the BORTEC study, there are about 50 authorities from 30 institutions involved in border surveillance in the Mediterranean and Central Atlantic states (Portugal, Spain,

⁴⁰ Commission of the European Communities, "Background Paper No. 4B on improving European integration in maritime reporting, monitoring and surveillance" (to the Green Paper on European Integrated Maritime Policy, 2006), available: <[http://ec.europa.eu/maritimeaffairs/pdf/SEC\(2006\)_689%20_4b.pdf](http://ec.europa.eu/maritimeaffairs/pdf/SEC(2006)_689%20_4b.pdf)> (retrieved 5 August 2008), p. 6; Ispra, id., p. 18.

⁴¹ Commission Regulation (EC) No 2244/2003, 18 December 2003; Ispra, id., p. 8; Commission of the European Communities, id., pp. 8–9.

⁴² Ispra, id., pp. 8, 14; Commission of the European Communities, id., p. 8; see also, *International Convention for the Safety of Life at Sea (SOLAS)*, IMO, 1974; Directive 2002/59/EC of the European Parliament and of the Council of 27 June 2002 establishing a Community vessel traffic monitoring and information system and repealing Council Directive 93/75/EEC, *Official Journal L* 208, 05/08/2002.

⁴³ Ispra, id., pp. 8–9; Commission of the European Communities, id., pp. 6–7.

⁴⁴ Ispra, id., pp. 11, 16; Commission of the European Communities, id., pp. 9–10.

⁴⁵ Ispra, id., pp. 9–12.

France, Italy, Malta, Greece, Slovenia, Cyprus), sometimes with parallel competencies and systems. Moreover, integrated national border surveillance systems cover only a few selected parts of the EU external border owing to technical and financial limitations.⁴⁶

In spite of this diversity, it is possible to observe some common trends. Militarisation of surveillance forces is visible. This is especially true in the changing modes of organisation as well as in equipping forces originally responsible for customs or patrolling territorial waters with military-style hardware and increasingly specialised surveillance equipment. Furthermore, the States' spending on border surveillance systems has increased significantly, together with rising employment in relevant supporting state agencies. The Spanish Guardia Civil and Italian Guardia di Finanza are fine examples.⁴⁷ The participation of the national navies in the prevention of the irregular immigration has been also increasing (e.g., in 2002, one-quarter of the Italian Navy's working hours were devoted to immigration control). Since 2002, several joint operations have been conducted by national naval forces, including *Amarante* (France), *Ulysses* (Strait of Gibraltar, several navies), and *Active Endeavour* (NATO).⁴⁸

EU Mediterranean States are presently developing more advanced and integrated surveillance systems. The Spanish SIVE (*Sistema Integrado de Vigilancia del Estrecho*) system is one of the most costly, sophisticated, and successful. SIVE is composed of various military-style technologies, including fixed and mobile radars, infrared sensors, and patrolling equipment. This, together with satellite images and the data from maritime surveillance systems, allows SIVE to detect objects that "barely stick out from the water surface." SIVE was initially established in the area of the Strait of Gibraltar. It is being expanded to other crucial areas, such as the Canary Islands (where the migration routes have shifted mostly as an effect of SIVE). Other European states are considering following Spanish example (e.g., Portugal and Estonia).⁴⁹

⁴⁶ Commission of the European Communities, *Examining the creation of a European Border Surveillance System (EUROSUR)*, Communication from the Commission, COM(2008) 68 final (Brussels, 13 February 2008), available: <<http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=COM:2008:0068:FIN:EN:PDF>> (retrieved 8 August 2008).

⁴⁷ See in greater detail: D. Lutterbeck, "Policing Migration in the Mediterranean," *Mediterranean Politics* 11(1) (Routledge, March 2006), 59–82, especially pp. 68–69.

⁴⁸ Lutterbeck, id., pp. 67–68; Ruzittu, n. 39 above.

⁴⁹ Lutterbeck, id., p. 66; "Spain's Border Surveillance System Remains Controversial," *Deutsche Welle* (29 October 2007), available: <www.dw-world.de/dw/article/0,2144,2835465,00.html> (retrieved 13 August 2008); Ispra, n. 39 above, pp. 18–19.

12.2.2.2. EU Efforts Towards Integrated Maritime Surveillance

Major EU documents such as the Integrated Maritime Policy Blue Book characterise national and local maritime surveillance systems as “sub-optimal” and therefore ineffective.⁵⁰ Consequently, the need for integration of surveillance systems is seen as a necessity.

The possible integration of maritime surveillance systems was an object of research in various studies, e.g., the BORTEC report (confidential apart from the public excerpt).⁵¹ These systems, originally not designed for border surveillance, provide vital data for immigration officers. Within the framework of Directive 2002/59/EC, the Community vessel traffic monitoring and information system (VTMIS) is being built up under the auspices of EMSA.⁵² The system is based on several components:

- a) SafeSeaNet (SSN) Version 1 is a constantly developed system of information exchange between Member States’ authorities to help prevent pollution and accidents at sea.
- b) The short range identification and tracking (SRIT) system is to eventually collect AIS data at the EU level (EMSA) and create an EU AIS-based real-time traffic image integrated into SSN (pilot project should be completed by the end of 2008).
- c) The Shore-based Traffic Monitoring and Information Database (STMID) gathers descriptive information on the Member States’ shore-based vessel monitoring and reporting infrastructure at a central level (the database is under constant development).⁵³

To address exclusively border surveillance, in 2004 the European Agency for the Management of Operation Cooperation at the External Borders of the Member States of the European Union (hereinafter FRONTEX) was established.⁵⁴ FRONTEX, which became fully operation in October 2005,⁵⁵ is

⁵⁰ Commission of the European Communities, *An Integrated Maritime Policy for the European Union*, Communication from the Commission, COM(2007)575 final (Brussels, 10 October 2007), p. 5.

⁵¹ *Ispira*, n. 39 above.

⁵² *Ispira*, n. 39 above, pp. 14–16; Commission of the European Communities, n. 40 above, pp. 7–8; EMSA website available: <<http://www.emsa.eu.int/end806d008.html>>, <<http://www.emsa.eu.int/end806.html>> (retrieved 13 August 2008).

⁵³ *Ispira*, n. 39 above, pp. 14–15.

⁵⁴ Council Regulation EC No. 2007/2004 establishing a European Agency for the Management of Operational Cooperation at the External Borders of the Member States of the European Union, 26 October 2004, *Official Journal* L 349/1, 25 November 2004.

an intelligence-based and depoliticised body of the Community. Its main task is to coordinate cost-effective, systematically-managed joint operations based on thorough risk analysis. The resources at the agency's disposal also position it as a key institution in the consolidation, implementation, and expansion of the EU Integrated Border Management System.⁵⁶ FRONTEX tasks also include providing assistance to Member States in the training of national border guards, including the establishment of common training standards⁵⁷; conducting risk analyses; undertaking research relevant for the control and surveillance of external borders; providing assistance to Member States in circumstances requiring increased technical and operational assistance at external borders; and providing Member States with the necessary support in organising joint return operations.⁵⁸

Joint operations conducted by FRONTEX can take form of, for example, expert assistance (e.g., HERA I) or joint operations at sea (e.g., NAUTILUS, HERA II).⁵⁹ The results of the joint operations, apart from operational outcomes (e.g., a significant number of apprehended illegal immigrants and immigration facilitators) include exchanging best practices and information between Member States and enhancing cooperation between national border guard authorities.⁶⁰ Despite its success, there is also criticism of FRONTEX activities, e.g., refugee protection violations.⁶¹

⁵⁵ Council Regulation (EC) 2007/2004 FRONTEX. The FRONTEX legal base also includes: Regulation (EC) No. 863/2007 of the European Parliament and of the Council of 11 July 2007 establishing a mechanism for the creation of Rapid Border Intervention Teams and amending Council Regulation (EC) No. 2007/2004 as regards that mechanism and regulating the tasks and powers of guest officers; 2005/358/EC: Council Decision of 26 April 2005 designating the seat of the European Agency for the Management of Operational Cooperation at the External Borders of the Member States of the European Union and Treaty establishing the European Community.

⁵⁶ S. Carrera, *The EU Border Management Strategy: FRONTEX and the Challenges of Irregular Immigration in the Canary Islands*, CEPS Working Document No. 261 (Brussels: Centre for European Policy Studies, March 2007), pp. 1, 8–9; “More about FRONTEX” (n.d.), FRONTEX Agency website at: <http://www.frontex.europa.eu/more_about_frontex/> (retrieved 6 August 2008).

⁵⁷ The Common Core Curriculum for border guards was presented in March 2008, see “Common Training Standards for the EU Border Guard Services,” *Press Release* (4 March 2008), available: <http://www.frontex.europa.eu/newsroom/news_releases/art33.html> (retrieved 18 August 2008).

⁵⁸ “More about FRONTEX,” n. 56 above.

⁵⁹ For more on particular joint operations, see Carrera, n. 56 above, pp. 20–22.

⁶⁰ Commission of the European Communities, *Report on the evaluation and future development of the FRONTEX Agency*, Communication from the Commission, SEC(2008) 149 (Brussels, 13 February 2008), para. II A.

⁶¹ See, e.g., M. Vella, “FRONTEX: Out of control?” *Malta Today* (20 July 2008), available: <<http://www.maltatoday.com.mt/2008/07/20/n6.html>> (retrieved 19 August 2008).

Another FRONTEX instrument is the European Border Patrols Network (EBPN). The first phase (preceded by the MEDSEA study) began in 2007 with seven patrolling areas.⁶² The main objective of EBPN is to “facilitate a closer and cost-effective operational cooperation between the national authorities responsible for patrolling the Member States’ Southern external maritime borders” as well as the synchronisation of national measures. This should not only prevent irregular immigration, but also help in detecting emergencies at sea and reducing loss of lives.⁶³

There are a number of additional FRONTEX instruments used for border surveillance. The most important among these are the Rapid Border Intervention Teams (RABIT, a pool of experts deployed in exceptional situations), the Centralised Record of Available Technical Equipment (CRATE, a database of border surveillance equipment), BorderTechNet (development of capacities and technologies), and Information and Coordination Network for Member States’ Migration Management Services (ICONET, a web-based platform for information exchange).⁶⁴

⁶² Council of the European Union, *FRONTEX Feasibility Study on Mediterranean Coastal Patrol Network – MEDSEA*, Council doc. 12049/06 (Brussels: Carrera, 2007), pp. 18–19.

⁶³ “Launching operations of the European Border Patrols Network: a new tool to tighten up control and management of the EU’s Southern maritime borders,” *Press Release*, IP/07/702 (Brussels, 24 May 2007), available: <<http://europa.eu/rapid/pressReleasesAction.do?reference=IP/07/702&format=HTML&a>> (retrieved 27 June 2008). See also, R. Liubajevs, “Situation at the EU’s Southern maritime borders,” Frontex, presentation at the Seminar on Europe’s Maritime Frontiers (Lisbon, 18 September 2007), available: <<http://www.assembly-weu.org/documents/Lisbon%20Speeches/Maritime%20frontiers%20-%20Liubajevs.pdf>> (retrieved 10 August 2008); “European Border Patrols Network to combat illegal immigration along the southern maritime borders of the European Union,” MEMO/07/203 (Brussels, 24 May 2007), available: <<http://europa.eu/rapid/pressReleasesAction.do?reference=MEMO/07/203&format=HTML>> (retrieved 15 August 2008).

⁶⁴ Liubajevs, id.; “Rapid Border Intervention Teams (RABITs) Exercise in Slovenia,” *Press Release* (10 April 2008), available: <http://www.frontex.europa.eu/newsroom/news_releases/art35.html> (retrieved 18 August 2008); “European Border Patrols Network,” n. 63 above; “Launching operations,” n. 63 above; “BorderTechNet,” (n.d.), available: <http://www.frontex.europa.eu/border_tech/> (retrieved 18 August 2008). Proposal for a comprehensive plan to combat illegal immigration and trafficking of human beings in the European Union of 28 February 2002, *Official Journal C* 142 (14 June 2002); Council Decision establishing a secure web-based Information and Coordination Network for Member States’ Migration Management Services of 16 March 2005, 2005/267/EC, *Official Journal L* 083 (1 April 2005). See also “Reinforcing the fight against illegal immigration – Secure web-based network for the coordination and exchange of information on irregular migration,” *Press Release*, IP/06/57 (Brussels, 20 January 2006), available: <<http://europa.eu/rapid/pressReleasesAction.do?reference=IP/06/57&format=HTM>> (retrieved 13 August 2006) and D. Naujoks, “ICONET – EU Commission launches network on irregular migration” (Portal

12.2.3. Proposed Surveillance Systems

Efficient border control is a prerequisite for preventing illegal immigrants entering the EU. Current external border control and surveillance measures have proven to be inadequate in preventing illegal immigration through the Mediterranean Sea and the Atlantic Ocean between Africa and the Canary Islands. The measures lack in scope coverage and are often fragmented. Furthermore, different border agencies are burdened with parallel competences. The EU has identified integrated and secure border management as one of its policy priorities.⁶⁵ It has taken initiatives to enhance the control but, so far, no effort has succeeded in stopping illegal immigrant flows. Thus, the EU has taken further steps to create a new, effective and EU-wide border management system.

Designed to support Member States in preventing illegal immigration, a common European Surveillance System for Borders (EUROSUR) was proposed in a Communication from the Commission to the Council on reinforcing the management of the European Union's southern maritime borders in 2006.⁶⁶ It was proposed that the EUROSUR system would first improve surveillance by creating more efficient cooperation between the existing national surveillance systems of the Member States but in the long term "it should gradually replace national surveillance systems at land and maritime borders, providing cost-effective solution, including e.g. a combination of radar and satellite surveillance at European level." A few weeks after the Commission adopted its Communication the European Council stressed the need to examine the creation of EUROSUR but did not assess the proposed system.⁶⁷ In February 2008, the Commission responded to the request by adopting the Communication Examining the Creation of a European Border Surveillance System (EUROSUR).⁶⁸ It stated that, if created, the EUROSUR system would prevent illegal immigration and cross-border crime as well as

Migrationsrecht.net, 13 January 2006), available: <http://www.migrationsrecht.net/index2.php?option=com_content&task=view&id=> (retrieved 13 August 2008).

⁶⁵ Commission of the European Communities, n. 15 above.

⁶⁶ Commission of the European Communities, *Reinforcing the management of the European Union's Southern Maritime Borders*, Communication from the Commission, COM(2006) 733 (Brussels, 30 November 2006), available: <http://eur-lex.europa.eu/smartapi/cgi/sga_doc?smartapi!celexplus!prod!DocNumber&lg=en&type_doc=COMfinal&an_doc=2006&nu_doc=733> (retrieved 11 July 2008).

⁶⁷ 16879/1/06 Brussels European Council 14/15 December 2006, *Press Release*, available: <http://www.consilium.europa.eu/ueDocs/cms_Data/docs/pressData/en/ec/92202.pdf> (retrieved 8 August 2008).

⁶⁸ "Examining the creation," n. 46 above.

enhance search and rescue capability thereby decreasing the number of unfortunate immigrants who die at sea. Interestingly, and contrary to its earlier Communication, the Commission stated that "... such a framework would be set up without affecting the respective areas of jurisdiction of Member States nor replace any existing systems." It was now indicated that, instead of being aimed at replacing the national systems, the EUROSUR system would support the Member States by enhancing their capacity to detect crossing boats and vessels and increasing their capacity to react in such situations. First, the EUROSUR would interconnect and rationalise the national systems, and secondly, it would improve the existing surveillance tools. Its final goal would be to create a common monitoring and information sharing environment for the EU maritime domain. The Commission suggested implementing EUROSUR in three phases starting in 2010.⁶⁹

In addition to the Communication on examining the creation of the EUROSUR system, the Commission presented other two Communications as a package of measures to enhance border security and to facilitate ease of travel for people who legally enter the EU.⁷⁰ The package included a Communication on preparing the next steps in border management in the European Union and a Communication on evaluation and future development of the FRONTEX Agency.⁷¹ Further information and analysis of the topics were provided in the staff working documents accompanying the Communications.⁷² The package of

⁶⁹ Id.

⁷⁰ Commission of the European Communities, Directorate General Justice, Freedom and Security, *Border package: Facilitating travel and securing Europe's borders*, Citizen's Summary, available: <http://ec.europa.eu/justice_home/news/summary/docs/border_package_en.pdf> (retrieved 13 August 2008).

⁷¹ Commission of the European Communities, *Preparing the next steps in border management in the European Union*, Communication from the Commission, COM(2008) 69 final (Brussels, 13 February 2008), available: <<http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=COM:2008:0069:FIN:EN:PDF>>; Commission of the European Communities, n. 60 above.

⁷² E.g., Commission of the European Communities, *Accompanying document to the Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions: Report on the evaluation and future development of the FRONTEX Agency – Impact assessment*, Commission staff working document, SEC(2008) 148 (Brussels, 13 February 2008), available: <<http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:52008SC0148:EN:HTML>>; "Accompanying document," n. 32 above; Commission of the European Communities, *Accompanying document to the Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions – Preparing the next steps in border management in the European Union – Impact assessment*, Commission staff working document, SEC(2008) 153 (Brussels, 13 February 2008), available: <<http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:52008SC0153:EN:HTML>> (retrieved 14 August 2008).

measures was aimed at enhancing all aspects of border control and surveillance, and at the same time it was aimed at improving smooth passenger flows of bona fide travellers. Measures proposed were wide-ranging and included, *inter alia*, the use of new technology, creating the EUROSUR system, reinforcing the capacity of FRONTEX, establishing a system for simplified and automated border checks for low-risk travellers from third countries, as well as a system to register third country nationals on entry and exit.

Once again, in June 2008, the EU reconfirmed integrated external border management as its goal in a Commission communication on a common immigration policy for Europe.⁷³ The existing border control tools, including FRONTEX, the use of latest technologies and well-coordinated cooperation with third countries are considered important but there continues to be a need of EU-wide surveillance system. The Commission requires Member States to continue building the EUROSUR concept. The EU's efforts towards further integration of surveillance systems, and border management in general, are in line with the overall Integrated Maritime Policy of the EU, which aims to create common sea-related policies for the EU Member States.⁷⁴

The last but not least aspect of the future development of maritime surveillance is cooperation with third countries. The EU has emphasised that cooperation with countries of origin and transit is a prerequisite for effective external border control and thus, for the prevention of illegal immigrant flows.⁷⁵ Cooperation has been named as one of the policy priorities of the EU in the

⁷³ Commission of the European Communities, *A Common Immigration Policy for Europe: Principles, actions and tools*, Communication from the Commission, COM(2008) 359 (Brussels, 17 June 2008), available: <<http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=COM:2008:0359:FIN:EN:PDF>> (retrieved 4 August 2008).

⁷⁴ In fact the Commission put emphasis on the importance of developing a European network for maritime surveillance and, in particular, has emphasised the need for better coordination within and among the Member States' surveillance agencies and the need for interlinking the existing monitoring and tracking systems of the Member States, see European Commission, *Integrated Maritime Policy for the European Union, Communication to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions*, COM(2007) 575 final (Brussels, 10 October 2007), available: <<http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=COM:2007:0575:FIN:EN:PDF>> (retrieved 8 August 2008); and in an accompanying document, the Action Plan, which proposed practical measures to reach these goals, see Commission of the European Communities, *Accompanying document to the Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions: An Integrated Maritime Policy for the European Union*, Commission Staff Working Document, SEC(2007) 1278 (Brussels, 10 October 2007), available: <http://ec.europa.eu/maritimeaffairs/pdf/ActionPaper/action_plan_en.pdf> (retrieved 8 August 2008).

⁷⁵ "Reinforcing the management," n. 66 above.

fight against illegal immigration.⁷⁶ The EU has taken concrete actions to establish or strengthen relations with several countries: agreements have been made and cooperative measures undertaken between the EU and third countries such as Morocco and Algeria.⁷⁷ Among other measures, the EU has provided a substantial amount of funding to third countries to improve their management of migrant flows.⁷⁸ The arrangements are not only targeted at enhancing relations between the EU and North African countries, but also to support the capacity of the North African countries, which are often used as countries of transit, to prevent illegal immigration and to provide necessary protection on their own as well as to support relationship-building between the countries of origin and transit. It seems clear, however, that all arrangements share the same ultimate goal: they all aim at preventing illegal immigration to the EU.⁷⁹

12.3. Conclusion

Illegal immigration by sea is a problem of great magnitude and has attracted a great deal of attention in the EU. Immigration pressure from Africa is expanding, and many immigrants continue to die at sea on their unfortunate journey across the Mediterranean or the Atlantic Ocean between Africa and the Canary Islands trying to reach Europe. The efforts taken at national and EU levels have been unable to stop the immigration flows so far. One reason behind this is inadequate and fragmented external maritime border control,

⁷⁶ “Communication from the Commission on Policy priorities,” n. 65 above.

⁷⁷ The *Euro-Mediterranean Agreement establishing an association between the European Communities and their Member States, of the one part, and the Kingdom of Morocco, of the other part*, signed on 26 February 1996 and entered into force on 1 March 2000, available: <http://europa.eu/eur-lex/pri/en/oj/dat/2000/l_070/l_07020000318en00020190.pdf>; *Euro-Mediterranean Agreement establishing an Association between the European Community and its Member States, of the one part, and the People’s Democratic Republic of Algeria, of other part*, signed on 22 April 2002 and entered into force 1 September 2005, available: <<http://ec.europa.eu/world/agreements/prepareCreateTreatiesWorkspace/treatiesGeneralData.do?step=0&redirect=true&treatyId=821>>. For further information on the Euro-Mediterranean Partnership, see the European Commission’s External Relations website: <http://ec.europa.eu/external_relations/euromed/index_en.htm> (retrieved 27 August 2008).

⁷⁸ E.g., a budget line B7-667, established in 2001, provided grants totalling €57 million between 2001 and 2003, “Executive Summary of the final report on Evaluation of Preparatory Actions B7-667 – Cooperation with Third Countries in the Area of Migration,” available: <http://ec.europa.eu/justice_home/funding/2004_2007/cooperation/funding_cooperation_en.htm> (retrieved 6 August 2008).

⁷⁹ For a review of EU relations with Morocco and Libya, see, e.g., Gil-Bazo, n. 17 above, at p. 584.

which remains under the national jurisdiction of the Member States and results in a great diversity of surveillance systems and agencies. In order to enhance surveillance, numerous cooperation measures have been set up between the Member States and initiatives, mostly cooperative or coordinative, have been taken by the EU. A particularly significant proposal of the EU is the proposed European Surveillance System for Borders (EUROSUR), which is designed to interconnect and rationalise the national systems, and in the long term, to create a common monitoring and information sharing network.

In contrast to external maritime border control being under Member States control, illegal immigration has been part of the EU competence since 1999. From the beginning, the EU has attempted to integrate immigration and asylum policy and further integration continues to be its goal. The EU has undertaken a series of initiatives, e.g., established specific programs, built relations with third countries of origin and transit, and provided funding both to Member States and third countries. It is worth noting, however, that the EU has adopted few legally-binding regulations and directives.

There are also several international law instruments that are relevant to immigration policies and maritime surveillance. Of special importance is the LOS Convention that lays out the basic rules and limitations on surveillance measures in various maritime zones. Furthermore, the states are obliged to respect the human rights and the rights of refugees protected by many international and regional agreements.

Chapter 13

Illegal Immigration to Canada by Sea: An Integrated Marine Security Response

Hugh R. Williamson

13.1. Introduction

One problem with illegal immigration is that there is not a precise definition of the term, nor is there an agreed set of classifications for those persons who arrive or stay “improperly” in another country. The person might be a refugee fleeing a well founded fear of persecution, an economic migrant seeking employment, or a criminal or terrorist with anti-social motives. The terms illegal immigration, irregular migration,¹ improperly documented arrival² (IDA) all mean substantially the same thing. For the purpose of this contribution, illegal immigration will be the most commonly used term.

It should be stated from the outset that illegal immigration by sea is not the highest priority problem for Canada, both in terms of government activity and in the total number of persons and incidents that have occurred. That being said, the situation is analogous to marine pollution incidents. While the major source of marine pollution comes from land-based sources, a tanker accident will attract major attention from government and the media since it is a single, obvious and concentrated incident. Similarly, as will be discussed below, while the majority of illegal immigrants enter Canada by land or air, this usually occurs singly or in small groups. However, a small percentage of illegal immigrant ships³ have garnered considerable attention and press comment. As a result, Canada has taken steps to deal with the problem, though as will be discussed, these are usually included as components of initiatives intended to deal with higher priority problems such as drug smuggling or anti-terrorism.

¹ F. Crepeau and D. Nakache, “Controlling Irregular Migration in Canada,” *IRPP Choices* 12, no. 1 (February 2006), available: <<http://www.irpp.org/choices/archive/vol12no1.pdf>> (retrieved 4 December 2008).

² A term used by the Canada Border Services Agency (CBSA) and Citizenship and Immigration Canada (CIC).

³ Probably less than ten ships in the past 20 years. Although the number of small boats illegally crossing between Canada and the United States is unknown, it is quite large.

Canada receives approximately 90 to 100 million travellers per year across its borders.⁴ The majority of these are American tourists who drive across the border and do not require visas or passports. Only two percent of entrants arrive by sea, most of these being tourists on ferries or visiting cruise ships. Canada issues approximately 800,000 visas per year for students, visitors, and temporary workers. Canada, like the United States and Australia, has a long history of actively encouraging immigration, and historically has one of the largest annual intakes, averaging 200,000 persons per year over the last ten years.⁵ Canada also has approximately 40,000 refugee claimants per year.

Some of those who enter Canada do so illegally, and others violate the terms of their legal entry. It is estimated that there are approximately 200,000 illegal immigrants in Canada at any time.⁶ Some of these make refugee claims in Canada, others work illegal, and others are intending to use Canada as an entry point into the United States. It is the latter two groups that are the main focus of Canada's efforts to suppress irregular migration.

13.2. Canada's Maritime Borders

Canada has two borders: One with the United States, and one with the surrounding oceans. Canada and the United States share a 5,500 km land border and a 11,400 km water border, including the Great Lakes-St. Lawrence Seaway system (3,500 km) and maritime frontiers on the Atlantic, Pacific, and Arctic ocean coasts. Canada also has one of the world's longest coastlines at 243,042

⁴ In 2001–2002, a total of 102,217,849 travellers came to Canada, of which 80,889,680 (78%) arrived by land, 19,000,000 (19%) arrived by air and 2,200,000 (2%) arrived by sea. Of this total, 50,809,257 (58%) went to the province of Ontario, which has no direct sea access. See Office of the Auditor General of Canada, *Report of the Auditor General of Canada to the House of Commons* (Ottawa: Minister of Public Works and Government Services Canada, 2003), Chapter 5, available: <http://www.oag-bvg.gc.ca/internet/English/att_20030405xe03_e_12706.html> (retrieved 4 December 2008). Since 11 September 2001, the number of arrivals has decreased slightly. In fiscal year 2006–2007, the CBSA processed more than 95 million travellers arriving by highway, air, sea and rail, with 260,300 travellers entering Canada per day.

⁵ E. Simck, "Canada's Immigration Policy," *CFR Background* (2 July 2006), available: <<http://www.cfr.org/publication/11047>> (retrieved 4 December 2008).

⁶ It is estimated that 95 percent of illegal immigrants to Canada arrive by air. See K. J. Torrance and K. Steel, "A Country for the Taking. Canada could stop the migrant onslaught but chooses not to," *B.C. Report Magazine* (1999), available: <<http://www.axionet.com/bcreport/web/990927f.html>> (retrieved 4 December 2008).

km. In addition to its high seas boundaries, Canada has ocean boundaries with Denmark (Greenland) and France (St. Pierre and Miquelon).

In 1996 Canada passed the *Oceans Act*, consolidating its maritime claims in accordance with the United Nations Convention on the Law of the Sea (LOS Convention). More controversially, Canada has also established straight baselines around much of the country, including the Arctic archipelago, claiming as internal waters Hudson's Bay, the Bay of Fundy, the Gulf of St. Lawrence, and the High Arctic waters of the Northwest Passage. The latter claim is not accepted by the United States among others. Nonetheless, Canada has extended its legal jurisdiction to cover these areas.

The Great Lakes and St. Lawrence Seaway system are shared by Canada and the United States, with numerous bilateral agreements covering aspects of security, environmental protection, safety, transportation, and commerce.

13.3. Types of Illegal Immigration

For the purpose of this contribution, we can classify maritime illegal immigration into three categories depending on the nature of the transport and the terms of entry into Canada:

1. *Legitimate documentation – Legal means of transport:* This category includes those persons who possess the necessary documentation and arrive by a regular vessel in compliance with Canadian law as passenger or crew. However, once in the country, they violate the terms of their entry. This would include either crew or passengers who leave the vessel (ship jumpers) or visitors who change their minds about leaving, possibly making a refugee claim. This is a matter of internal immigration control, since it is difficult to identify the intention prior to the legal entry into the country.
2. *False documentation – Legal means of transportation:* This category includes those persons who obtain passage on a vessel under a false identity, or with forged or improperly issued visas or passports. This would include passengers or crew who enter the country under false pretences. It also includes, from a maritime perspective, persons who enter the country posing as seamen or crew ostensibly to join a foreign-flag vessel in a Canadian port. This is a matter of security and

intelligence involving documentary validation or the identification of the undesirable persons.

3. *False/no documentation – Illegal means of transportation*: This category includes those persons who have no valid documentation or visa for entry, and those who attempt to smuggle themselves into the country. This would include stowaways and illegal immigrant ships. This is both a maritime security issue, requiring identification of the ship at sea, and a port/ship security issue, dealing with the prevention and detection of stowaways.

This contribution focuses on the second and third categories of migrants.

13.4. Illegal Immigration by Sea into Canada

Part of Canada's attitude toward illegal immigration probably stems from two incidents in the first half of the 20th century that are at serious odds with Canada's present self-opinion as modern liberal and moral state. In 1914, the *Komagata Maru* incident occurred.⁷ This was a ship carrying 376 Indian passengers, including 240 Sikhs, and all of whom were British subjects. The *Komagata Maru* arrived at the port of Vancouver and was held in the harbour for two months before being forced to return to India with all the passengers aboard.

The more infamous "Voyage of the Damned" incident occurred in 1939. The MV *St. Louis*, a German ship carrying 907 Jewish refugees from Nazi Germany, was denied entry into Canada⁸ after both Cuba and the United States

⁷ The ship was eventually escorted out of Canadian waters by HMCS *Rainbow*, one of two naval vessels possessed by Canada at the time, and the only one on the West Coast. "Komagata Maru incident," *Wikipedia* entry, available: <http://en.wikipedia.org/wiki/Komagata_Maru_incident> (retrieved 4 December 2008)

⁸ The passengers on the *St. Louis* had originally sailed for Cuba, however the Cuban government changed the visa requirements after public pressure, and the passengers were refused entry. Attempts to get sanctuary from the both the United States and Canada failed. The ship eventually returned to Germany, where many of the passengers eventually perished during the Holocaust. See J. Rosenberg, "The Tragedy of the S.S. *St. Louis*," Jewish Virtual Library (1998), available: <<http://www.jewishvirtuallibrary.org/jsource/Holocaust/stlouis.html>> (retrieved 4 December 2008). In 2000, Canadian clergy members held a ceremony of public apology in Ottawa for 25 survivors. See "Canadian clergy apologize to 'Voyage of the Damned' survivors," *CBC News* (6 November 2000), available: <<http://www.cbc.ca/canada/story/2000/11/06/holocaust001106.html>> (retrieved 4 December 2008).

had denied entry. Both these incidents had serious racial overtones, which still play out in Canadian immigration and refugee debates.

Over the last twenty years, Canada has experienced a series of maritime incidents involving economic migrants entering Canadian ports and waters. While the number of migrants involved was relatively small, the nature of the entries raised considerable public and political interest.

First, there were a series of illegal immigrant ship incidents. In July 1986, 155 Tamils were found drifting in a lifeboat off the coast of Newfoundland, claiming to be refugees from Sri Lanka. It was later discovered that they had been dropped off by a German-owned but Honduran-registered vessel, *Aurigae*, and that they had boarded in West Germany.

In July 1987, 173 Sikhs appeared one morning in a small Nova Scotia fishing village claiming to be fleeing India and seeking refugee status. It later transpired that they had boarded a small freighter in Rotterdam after arriving in the European Union (EU), probably by air through West Berlin.

In June 1999, four small freighters were discovered off Vancouver Island with several hundred Chinese immigrants from Fujin province. A fifth boat was discovered empty in the same region.⁹ This was believed to be part of a criminal “snake head” human smuggling ring bound for the United States.¹⁰

During the 1990s, a more common occurrence on the East Coast was for small groups of stowaways, mostly Romanians, to smuggle themselves into Canada in freight containers.¹¹ These stowaways generally originated in ports in the Mediterranean. In 1996, several Romanian stowaways were forced over the side of the Taiwanese-flagged *Maersk Dubai*, bound from Spain to Halifax. This was reported by the Filipino crew, who successfully hid another stowaway until the vessel reached Halifax. This incident resulted in a criminal enquiry and charges being brought against the Taiwanese officers.¹² In 2000 and 2001, several Chinese stowaways were found in shipping containers at the Port of

⁹ Many of the immigrants from the first vessel disappeared shortly after their release from immigration custody, probably making their way into the United States. After this, the remaining migrants were kept in custody until their hearings and subsequent deportation. This practice seemed to discourage subsequent immigrant vessels since the criminal ring leaders are only repaid for the cost of the journey once the migrants start working in the United States. Unattributable pers. comm. (15 November 2008).

¹⁰ Unattributable pers. comm. (15 November 2008).

¹¹ Between 1991 and 1995, 742 stowaways are known to have entered Canada.

¹² The charges were stayed in Canada after a finding that Canada had no jurisdiction over the incident. The evidence was sent to Taiwan, as the flag state, but charges were never pursued. See B. Carty, “The cost of witness. Murder and the *Maersk Dubai*,” CBC Radio Canada, a broadcast from CBC, available: <<http://www.savintage.com/magellen/Maersk9.html>> (retrieved 4 December 2008).

Vancouver.¹³ In March 2008, four Algerian stowaways were caught attempting to board a train 100 km from Halifax after hiding in a double-decker bus being transported in an ACL container ship from Liverpool.

In September 2005, 17 Chinese nationals travelling as passengers on a cruise ship and using forged South Korean passports left the ship in Halifax posing as day tourists and boarded a train for central Canada. Four others were caught on board before they could leave. The voyage had originated in Le Havre.

The significant pattern in these cases is that on Canada's west coast most of the illegal migrants came from China, generally Fujin province, as part of organised criminal activity. On Canada's east coast, however, most of the illegal immigrants were eastern European, primarily Romanian, and boarded the vessels in EU ports.¹⁴ While the total number of incidents is relatively small, it still raises concerns, especially when the situation exposes weakness in the maritime and port security systems.

13.5. Changes to Maritime Security Post 9/11

After 11 September 2001, Canada's position, like much of the rest of the world, changed markedly. In Canada's case, this was exacerbated by its close proximity to the United States, and the overwhelming concern with maintaining both security and trade relationships with the United States. Three key factors influenced subsequent policy decisions. First, the United States and Canada are each other's largest trading partner, with large quantities of cargo,¹⁵ much of it transhipped, crossing the border every day. Second, large numbers of people cross the border every day. Until recently, Canadians and Americans did not require visitor's visas or passports to cross the border. Third, there was an early perception that some of the 9/11 hijackers had entered the United States through Canada.¹⁶

¹³ Interestingly, the containers, and presumably the stowaways, were destined for Seattle but landed in Canada after Canadian customs officers uncovered them.

¹⁴ The decrease in Romanian stowaways may be the result of Romania's entry into the EU and the better employment prospects available there.

¹⁵ The majority of containers landed in the ports of Montreal and Halifax are transhipped to destinations in the United States. See Port of Halifax website at <<http://www.portofhalifax.ca/>> (retrieved 4 December 2008).

¹⁶ This was disproved but is still believed by some Americans. There have been, however, several other instances of suspected terrorists living in Canada, or entering the United States from Canada. See "Canada and Terrorism," Anti-Defamation League (January 2004), available: <http://www.adl.org/terror/tu/tu_0401_canada.asp> (retrieved 4 December 2008).

As a result, Canada needed to demonstrate to the United States that it was serious about keeping its part of “Fortress North America” safe, to ensure that marine security was sufficiently robust to prevent terrorists from entering Canada, and to keep weapons of mass destruction from being smuggled into the United States through Canadian ports. On its own behalf, Canada also needed to maintain its own marine security.

While Canada had developed its own plans for integrated maritime security, 9/11 brought an additional urgency. This resulted in a number of government initiatives to enhance national security in general, maritime security in particular, and as a consequence, to institute initiatives that directly or indirectly enhanced the programmes to prevent illegal maritime immigration.

Part of the response was to re-energise the process of cooperation and integration between government departments. This process had already been underway in some sectors, partially due to the government’s policy to consolidate some of its departmental functions, such as the separate fleets of ships operated by the Canadian Coast Guard, Canadian Hydrographic Services, and the Department of Fisheries and Oceans. There was also the growing awareness, even prior to 11 September 2001 that there was a need to share both resources and information, since decreasing departmental budgets meant that they could no longer afford to “go it alone.”

In 2004, Canada produced its first National Security Policy, “Securing an Open Society.” The policy focused on three core areas:

1. Protecting Canada and Canadians at home and abroad
2. Ensuring Canada is not a base for threats to our allies
3. Contributing to international security

It also included a \$308 million six-point plan to enhance marine security by

1. Clarifying and strengthening accountability
2. Establishing Marine Security Operations Centres
3. Increasing on-water presence and aerial surveillance activities
4. Securing fleet communications
5. Pursuing closer cooperation with the United States
6. Strengthening security at ports and other marine facilities¹⁷

¹⁷ Government of Canada, Public Safety Canada, *Securing an Open Society: Canada’s National Security Policy* (Public Safety Canada, n.d.), available: <<http://www.publicsafety.gc.ca/pol/ns/secpol04-eng.aspx>> (retrieved 4 December 2008).

13.5.1. Canadian Departments with Marine Security Mandates

As with most countries, Canada has several departments and agencies responsible for maintaining the security over maritime-related activities. Each one has a unique set of capabilities and legal authority to carry out its mission. Table 13.1 sets out the key departments and agencies with marine security mandates.

Table 13.1. Canadian government departments with marine security responsibilities

Department	Role	Platform	Weapons	Maritime Surveillance Capabilities	Intelligence	Enforcement Authority
DND	Sovereignty	Ships Aircraft	Heavy	Yes, but not on Canadians	Yes	No
CBSA	Customs Immigrations Food safety	None	Side arms	No	API/PNR FOSS	Yes
DFO	Fisheries Environmental protection	Aircraft	Side arms (in fisheries role)	Yes	Yes	Yes, fisheries officers
Coast Guard	Marine Safety	Ships Helicopters		AIS LRIT MCTS	Yes	No
RCMP	Policing	Coastal (limited) RHIB	Side arms MSERT	Yes, coastal watch	Yes	Yes
TC	Marine Security	Aircraft	None	1 aircraft	PAIR	Yes, ship safety
CSIS	Security	None	None	None	Yes	No

Key: AIS – Automatic Identification System; API – Advanced Passenger Information; CBSA – Canada Border Services Agency; CSIS – Canada Security and Intelligence Service; DFO – Department of Fisheries and Oceans; DND – Department of National Defence; FOSS –Field Operations Support System; LRIT – Long Range Identification and Tracking; MCTS – Maritime Communications and Traffic Services; MSERT – Marine Security Emergency Response Team; PAIR – Pre Arrival Information Report; PNR – Passenger Name Record; RCMP – Royal Canadian Mounted Police; RHIB – Ridge Hulled Inflatable Boat; TC – Transport Canada

13.5.1.1. Department of National Defence

The Department of National Defence (DND) and the Canadian Forces comprises Canada's military, including the Navy, Army and Air Force. The Navy maintains a fleet of warship and submarines, as well as surveillance and intelligence capabilities. Under Canadian law, the Canadian Forces do not have a law enforcement role, but may be called upon to assist other government departments either under standing memoranda of understanding (MOU) or on a contingency basis.

DND, and in this specific case, the maritime forces, collect and process a wide range of information concerning the presence of vessels and activities in Canadian maritime waters. Navy ships, including submarines, and maritime patrol aircraft routinely gather information on the identity and movements of foreign warships, as well as commercial and fishing vessels. This is augmented with additional information from satellite and other electronic means and used to compile the Recognised Maritime Picture (RMP), a critical component of Marine Domain Awareness (MDA).¹⁸ One of the key factors in gathering this information is the ability to maintain a real-time surveillance capability. Since both ships and aircraft cannot be continuously present on station, surveillance information is only as current as the last recorded observation. Several innovative programmes were undertaken post-9/11 to improve target tracking and identification ability. Two projects are elaborated on below.

¹⁸ See G. Reedel, *Comparative Study of Formal Knowledge Representation Enablers for the Collaborative Knowledge Exploitation Framework, Final Report* (MacDonald Dettwiler and Associates Ltd., 13 July 2007), available: <<http://pubs.drdc.gc.ca/PDFS/unc64/p527928.pdf>> (retrieved 4 December 2008), A-1, pp. 17–18:

Maritime Domain Awareness (MDA), or Maritime Situational Awareness (MSA), has to do with the effective understanding of any activity associated with the maritime environment that could impact security, safety, economy or environment. MDA comprises the contextualisation of positional and identification data with intelligence data. A NATO definition states that MDA is about all areas and things of, on, under, relating to, adjacent to, or bordering on a sea, ocean, or other navigable waterway; including all maritime related activities, infrastructure, people, cargo and vessels and other conveyances. In Canada, the MDA activity sphere includes Canada's surveillance and awareness efforts within marine zones as well as liaison and coordination with Canadian and international intelligence gathering bodies. Within this activity sphere, security efforts are guided by the principle that the greater the vulnerability, the more detailed the Government of Canada's information requirements. Key objectives include developing comprehensive knowledge of people, containers, goods and vessels from foreign points of origin to Canadian points of destination; and timely information collection and sharing among key departments through secure means. Collaboration is key to the effectiveness of domain awareness, responsiveness and safeguarding activities.

High-Frequency Surface Wave Radar (HFSWR) – This programme utilised a land-based fixed-array radar system that has the ability to track surface targets at a range of several hundred miles. The intention was to establish a series of sites along Canada’s coast to provide continuous radar coverage of the entire coastline and exclusive economic zone (EEZ). Two test sites were established in Newfoundland to track vessel fishing on the Grand Banks at the edge of Canada’s 200 nm EEZ. Technological problems led to the project being cancelled.

Atlantic Littoral ISR Experiment (ALIX) – This 2004 project involved the use of an unmanned aerial vehicle (UAV) or remotely-controlled pilotless aircraft (drones) and integrated intelligence surveillance and reconnaissance (ISR) architectures to conduct ocean and High Arctic patrols. The project made use of an Altair UAV equipped with radar and day/night photo imagery capabilities. The trials proved to be moderately successful, however, the system proved to have a limited capability to operate in poor weather or in the High Arctic.

13.5.1.2. Canadian Border Services Agency

The Canadian Border Services Agency (CBSA)¹⁹ was created in 2003, and combined the enforcement and intelligence arms of what was the Canada Customs and Revenue Agency (CCRA), Citizenship and Immigration Canada (CIC), and the Canadian Food Inspection Agency (CFIA). CBSA maintains 1,200 service locations across Canada, including all border crossings with the United States, and 39 offices in other countries. It maintains detention facilities in Toronto and Kingston, Ontario, and in the port cities of Montreal and Vancouver. It also has major seaport operations in the ports of Halifax, Montreal and Vancouver. CBSA is responsible for enforcing the *Customs Act* and *Immigration and Refugee Protection Act*, as well other legislation dealing with entry of goods or persons into Canada. CBSA has no maritime surveillance capability, but maintains a number of intelligence programmes targeting both customs and immigration issues. It has the primary mandate for detecting and suppressing illegal immigration by all means, including marine.

¹⁹ Canada Border Services Agency website at <<http://www.cbsa-asfc.gc.ca/menu-eng.html>> (retrieved 4 December 2008).

Marine Programmes and Units

1. Marine Passenger Analysis Unit (MPAU) – A follow on to the Passenger Analysis Units established at airports, these units target cruise ships and ferries, as well the crew of commercial vessels.
2. Marine Container Targeting Units (MCTU) – Established in 2004 in the ports of Montreal, Halifax, and Vancouver, their primary tasking is against contraband and weapons of mass destruction, however, they also target suspected stowaway containers.
3. Vessel Targeting Units (VTU) – These teams are located in smaller ports and target vessels suspected of holding contraband or illegal immigrants.
4. Integrated Primary Inspection Line (IPIL) – Established in 2005, these units are set up at airports, and cruise ship and ferry terminals to provide disembarkation screening of passengers.
5. National Risk Assessment Centre (NRAC) – Established in Ottawa, NRAC is a 24 hour a day/7 day a week focal point for national and international intelligence and enforcement liaison.

In addition, CBSA receives marine cargo import reports that must be sent in by any vessel 24 hours prior to loading cargo bound for Canada.

1.3.5.1.3. Public Safety Canada

Public Safety Canada (PSC) (formerly Public Safety and Emergency Preparedness Canada) was established in 2003 following a major departmental reorganisation which consolidated Canadian law enforcement and security activity under a single department. The functions of the Royal Canadian Mounted Police (RCMP), CBSA, Canadian Security and Intelligence Agency (CSIS), Corrections Services Canada (CSC), and the National Parole Board were brought together under PSC. This is not unlike the US Department of Homeland Security with the exception that PSC has no mandate for maritime sovereignty operations.

13.5.1.4. Royal Canadian Mounted Police

As Canada's national police force, the Royal Canadian Mounted Police (RCMP) have the major responsibility for the enforcement of Canadian law. They are the lead enforcement arm used for the majority of non-fishing illegal maritime activities. The RCMP have several smaller vessels, primarily used for patrol on the Great Lakes, and against contraband smuggling, primarily liquor from St. Pierre and Miquelon.

The Marine Security Enforcement Teams (MSET) are a joint RCMP/Canadian Coast Guard initiative to provide three co-manned vessels for patrol on the Great Lakes and the St. Lawrence Seaway. The RCMP also provide the Marine Security Emergency Response Teams (MSERTs), which are the highly mobile and heavily-armed policing units used whenever armed force may be needed against active opposition. They are generally present for any major maritime incident requiring the armed boarding of a vessel.

The RCMP Coastal Watch Programme is a community-based initiative intended to obtain information from local residents on suspicious activities taking place in and around coastal communities. Its major targets are drug offloads, however, it also identifies illegal immigration activities.

13.5.1.5. Canadian Coast Guard

The Canadian Coast Guard (CCG) is responsible for maritime safety, including navigational aids, search and rescue, and marine environmental protection. The CCG operate the Marine Communications and Traffic Services (MCTS), which includes vessel traffic management at major ports and on waterways. The CCG is the main recipient of pre-arrival information reports (PAIR) from commercial vessels entering Canadian waters.

After the reorganisation of the Canadian government fleets, the CCG was transferred from Transport Canada to the Department of Fisheries and Oceans where it also took over the operations of Canadian fisheries patrol vessels. Unlike the US Coast Guard, the CCG is not an enforcement body, and CCG vessels are not normally armed. Coast Guard officers are not fisheries enforcement officers or peace officers. However, their vessels provide the fleet support for marine enforcement activities and will carry enforcement officers from other government departments to carry out their marine mandates.

13.5.1.6. Department of Fisheries and Oceans

The main task of the Department of Fisheries and Ocean (DFO) is the monitoring of fishing activity, which it accomplishes through the use of fishing vessel reports, fisheries patrol vessels, and fisheries surveillance flights, a major contributor to MDA. Since 1989, DFO has utilised several light aircraft, owned and operated by Provincial Airways, a small commercial airline, for aerial fisheries patrols. These aircraft have been equipped with high capability surface search radar, originally developed for military long-range patrol aircraft, as well as day/night digital photographic cameras. The aircraft are operated by the airline, which also provides the flight crew and sensor operators. DFO provides a fisheries officer who provides tactical direction and serves as the on-board enforcement authority. Vessel tracking, environmental information, and other surveillance data from these flights are provided to other government departments.

13.5.1.7. Transport Canada

Transport Canada retained the Ship Safety branch after the reorganisation of Canadian government fleets. It also has responsibility for port and vessel security under the ISPS Code. As such, Transport Canada is the main recipient of the PAIR that must be sent by vessels 96 hours prior to arriving in Canadian waters.

13.5.1.8. Canadian Security Intelligence Service

The Canadian Security Intelligence Service (CSIS) is the government agency with the primary task of collecting, monitoring, and analysing intelligence on threats to Canada's national security and conducting covert and overt operations within Canada.²⁰ CSIS has no enforcement mandate. However, it provides intelligence to other government departments. CSIS also operates the Integrated Threat Assessment Centre, which has been operational since 2004 on a 24/7 basis. The Centre has representation from PSC, CSIS, CBSA, the Communications Security Establishment, DND, Foreign Affairs and International Trade Canada, the Privy Council Office, Transport Canada, CSC, the Financial Transactions and Reports Analysis Centre of Canada, the RCMP,

²⁰ Canadian Security Intelligence Service website at <<http://www.csis-scrs.gc.ca/index-eng.asp>> (retrieved 4 December 2008).

Ontario Provincial Police, and Sûreté du Québec. CSIS also links with international centres, including the Joint Terrorism Analysis Centre in Britain, the National Counterterrorism Center in the United States, the National Threat Assessment Centre in Australia, and the Combined Threat Assessment Group in New Zealand.

13.6. Integrated Responses and Planning

13.6.1. Planning Committees and Working Groups

The Canadian government has established several planning bodies to coordinate marine security activities.

13.6.1.1. Interdepartmental Programme Coordination and Review Committee

In 1991, in response to a Senate and Treasury Board recommendation calling for greater cooperation between government departments, the Interdepartmental Programme Coordination and Review Committee (IPCRC) was established with a marine security/enforcement mandate. IPCRC established regional operational sub-committees. The Atlantic Operations Sub-Committee oversaw development of CANMARNET, an intra-governmental web site for the sharing of information. IPCRC also established the Interdepartmental Concept of Operations (ICMO). IPCRC was the main federal government coordinating body for the 1995 “Turbot War” with the EU (Spain) and for the Swiss Air crash of 1998. IPCRC stood down in September 2001.

13.6.1.2. Interdepartmental Marine Security Working Group

Established in 2001, immediately after 11 September 2001, the Interdepartmental Marine Security Working Group (IMSWG) was set up under the chair of Transport Canada to coordinate the activities of 17 government departments, including DND, CBSA, and the RCMP among others. The IMSWG is charged with identifying and coordinating federal government actions and objectives for marine security. It ensures effectiveness in implementing marine security initiatives and provides strategic advice to

address marine security gaps. The IMSWG also supports several interdepartmental marine security initiatives through a dedicated Marine Security Coordination Fund.²¹

13.6.1.3. Eastern Canada Interdepartmental Marine Operations Committee

The Eastern Canada Interdepartmental Marine Operations Committee (ECIMOC) is the successor of the Atlantic Operations Sub-Committee. ECIMOC is made up of federal departments that either conduct, or have an interest in, operations in the maritime environment.²² A key aim of this committee is identifying and developing the most practical means of applying operational resources to facilitate their joint and effective employment. Principal members include Maritime Forces Atlantic (the current chair), DFO (representatives from both the CCG Maritimes and Newfoundland and Labrador regions, as well as from various sections of Fisheries and Oceans Management), CBSA (for both customs and immigration matters), Transport Canada, and Environment Canada. Health Canada was invited to participate as a result of the *Wadi Al Arab* anthrax incident.²³ ECIMOC generally meets four times a year.

13.6.2. Intelligence and Information Sharing

Individually, and collectively, the Canadian government departments tasked with marine security gather information and develop intelligence in their field

²¹ L. Kinney, “Marine Security in Canada, Current Status, Future Directions 2007” (presentation, Transport Canada, 24 May 2007), available: <http://www.portsecure.ca/2008/program/presentations/Laureen_Kinney.pdf> (retrieved 4 December 2008).

²² For a description of ECIMOC’s mandate see Senate Committee for National Security and Defence, *Background Brief – OGD Cooperation in Atlantic Region*, available: <<http://www.parl.gc.ca/37/2/parlbus/commbus/senate/Com-e/defe-e/witn-e/hickey3-e.htm>> (retrieved 4 December 2008).

²³ In April 2003, the MV *Wadi al Arab* was diverted to an offshore anchorage near Halifax, Nova Scotia, after a report that a crew member may have died of anthrax. The vessel was transporting bauxite from Brazil to an aluminium smelter in Saguenay, Quebec. The crewman had died in Brazil prior to sailing and was autopsied there. Brazilian police initially reported the suspicion of a terrorist connection. The vessel was boarded by police and health authorities in Canada, where medical and forensic investigations failed to turn up any evidence of anthrax or a terrorist connection. For further information, see <http://www.ctv.ca/servlet/ArticleNews/story/CTVNews/1051632607624_94/?hub=Canada> (retrieved 4 December 2008).

of responsibility. This intelligence may be shared under the appropriate circumstances, taking into account the legal and political constraints involved.

While the records and databases of the individual departments are accessible by the authorised agents of that department for the purpose collected, use for other purposes or sharing with other departments is subject to several considerations:

1. *The terms on which the information was collected:* Certain reports, such as customs declarations, while required under statute, can only be used for that purpose and by that department unless a legal authorisation is given for its disclosure. This is usually requires a court order or judicial warrant.
2. *Information of a personal nature:* Information on an individual may be covered by privacy, access to information, or Charter of Rights legislation.
3. *Property rights, proprietary and copyrighted information:* Information may be subject to commercial ownership, involving licensing agreements or royalties, and might not be sharable without permission or additional payment.
4. *Legal prohibitions on collection or surveillance of certain information:* There may be specific prohibitions on the collection of certain information by specific government agencies. For example, DND is not permitted to carry out intelligence gathering or surveillance on Canadians.
5. *Government policy with respect to the release and sharing of information.*²⁴

13.6.3. Information Collection for Marine Security

One of the major complaints of the maritime shipping community has been the number of times that they have to report to government authorities prior to

²⁴ Treasury Board of Canada Secretariat, *Government Security Policy* (1 February 2002), available <<http://www.tbs-sct.gc.ca/pol/doc-eng.aspx?id=12322§ion=text#cha3>> (retrieved 4 December 2008).

arriving in Canada. Much of the required information is identical and is sent to exactly the same recipient, often the CCG MCTS stations. Often the information is then sent on to other government departments for action.

In Canada, the following are some of the reports required concerning ships, crew, and passengers:

1. CBSA – Customs Advance Commercial Information (ACI) – 24 hours before loading
2. Transport Canada – ECAREG – Marine Pollution prevention report – 96 hours before entering Canadian waters
3. Transport Canada – Marine Security – Pre Arrival Information Report (PAIR) – 96 hours before arrival in Canadian waters
4. CBSA – Passenger and Crew Information – 7 days prior to arrival
5. CBSA Passenger Name report
6. CBSA – Before Arrival Information – Cruise ships
7. CBSA – Cruise Ship Pre-Arrival Notice – 96 hours before arrival²⁵

As noted above, while the information may be sent to the same recipient, the information is then passed on to the appropriate government authority. It can only be released or shared if it complies with the specified guidelines governing its handling, use, and distribution.

13.7. Integrated Marine Security Activity

13.7.1. Marine Security Operations Centres

One of the priorities under the National Security Policy and Marine Security Initiatives was the establishment of Marine Security Operations Centres (MSOCs). These were to be regional focal points where representatives of government authorities would be collocated and able to respond quickly on behalf of their department to any incident. Participants in the MSOC come from DND, the RCMP, CCG/DFO, Transport Canada, and CBSA. In addition,

²⁵ The CBSA's authority to obtain and collect such information is found under section 107.1 of the *Customs Act*, S.C. 1985, c. 1 (2nd Supp.) and the *Passenger Information (Customs) Regulations*, P.C. 2003-908, 12 June 2003, and in paragraph 148 (1)(d) of the *Immigration and Refugee Protection Act*, S.C. 2001, c. 27, and regulation 269 of the *Immigration and Refugee Protection Regulations*, S.O.R./2002-227.

liaison officers from the US Coast Guard are assigned to each MSOC, attending meetings several times a month, as required.

The plan called for three centres: one on the Atlantic coast, in Halifax, Nova Scotia; a second on the Pacific coast, in Victoria, British Columbia; and the third on the Great Lakes (GL-MSOC) in the Niagara, Ontario, region. DND is the lead agency for the coastal MSOCs, and they are collocated with the Naval Headquarters. The lead agency for the GL-MSOC is the RCMP.

The advantage of having personnel from the different departments at the MSOC is that they can work in a common environment and bring their department's expertise and capabilities to bear on any situation. They are also able to respond to queries from their departments for tactical information from other participating departments. At the MSOC, each staff member has access to their individual intelligence databases. These are appropriately secured and access controlled, and can determine whether or not information can be shared with other departments according to their own departmental policies and directives. Since only authorised members can access departmental databases, it is necessary to ensure that no-one looks on when certain functions are being utilised. This, however, is a matter of the physical layout of the MSOC, which is designed to ensure that data systems are properly safeguarded from accidental or intentional disclosure.

13.7.2. Canada-US Bilateral Initiatives

Canada and the United States have a long history of bilateral cooperation on regional security matters. This was demonstrated during and immediately after 11 September 2001 and continues to this day. Several programmes illustrate this cooperation. In December 2001, Canada and the United States issued a Joint Statement on Cooperation on Border Security and Regional Migration Issues. This called for, among other things, the establishment of Integrated Border Enforcement Teams (IBETs) to help combat cross-boarder criminal activity.

The IBET is comprised of RCMP, CBSA, US Customs and Border Protection /Office of Border Patrol, US Department of Homeland Security, US Immigration and Customs Enforcement (ICE), and US Coast Guard representatives. Teams were set up at the Detroit/Windsor and the Maine/New Brunswick borders, and on the west coast in the Lower Mainland of British Columbia. There have been a number of successful operations, including several illicit drug seizures and illegal immigrant arrests.

13.7.3. Integrated Maritime Security Operations – Ship Rider Agreement

The Ship Rider Agreement is a more controversial initiative because it involves not just cooperation, but actual reciprocal enforcement by the partner agencies. The Ship Rider Agreement involves officers from the US Coast Guard and the RCMP. So far, activity has been focused on the Great Lakes and Strait of Juan de Fuca. RCMP and US Coast Guard officers undertook several weeks of training in the law enforcement requirements of the partner country. Officers were then assigned to vessels of the other nation, where they were integrated into enforcement operations.

Several “proof of concept” trials were undertaken during 2005 and 2006 on the river between Detroit and Windsor during the Super Bowl football game, which was considered to be a potential terrorist target, and in 2007 at the Ontario-New York border near Cornwall, Ontario, and in British Columbia. In 39 separate incidents, ship rider teams contributed to 41 arrests, with six of these being made directly by the integrated marine teams.²⁶

In March 2008, the Canadian Minister of Public Safety announced that a formal, permanent agreement would be negotiated.

13.8. An Exercise in Integrated Marine Security Operations

13.8.1. Illegal Immigrant Planning and Response – Operation Heave To and the MV *Cala Puebla*

In April 2007, intelligence was received that up to 180 illegal migrants of eastern European or West African origin may be bound for Halifax on the container ship *MV Cala Puebla*. The Italian-owned and Cyprus-registered ship was en route from the Mediterranean to Halifax and due to arrive in four or five days.

It was Easter weekend, but a federal interagency meeting was called immediately. CBSA was designated as the lead agency; MSOC staff were notified, as well as their departments. In addition, because there was a potential

²⁶ Public Safety Canada, “Government of Canada takes action during Cross-Border Crime Forum to prevent crimes in shared waterways” (Quebec City, 19 March 2008), available: <<http://www.publicsafety.gc.ca/media/nr/2008/nr20080319-eng.aspx>> (retrieved 4 December 2008).

public health issue, Public Health Canada was also notified and included, although not at the beginning. United States' authorities were also notified.

The plan was to detect and interdict the vessel and process the persons on board. The intent was to

- a) interdict the vessel at sea
- b) ensure the safety and security of those on board
- c) ensure that no-one on board posed a safety or security risk to Canada, including a public health risk

The MSOC had the task of locating the vessel. The Navy, CCG, and RCMP had the task of preparing to interdict and board the vessel at sea. CBSA had to prepare to search the vessel. Regional health officials were notified in case there was a need for use of local hospital or health facilities.

Prior to the vessel's arrival, the story leaked to the local media and soon gained national attention. Officials decided to bring the vessel along side and search it in Halifax. No stowaways were detected. However, the operation served as a "live exercise" allowing for detailed post-action analysis and lessons learned.²⁷

13.9. Conclusion

Canada's marine security issues are not unique. Unlike Europe, geographical isolation from the rest of the world and close proximity to the United States bring a different set of priorities to security planning, especially as it involves illegal immigration. Canada has no close neighbours, other than the United States, from where illegal immigrants can easily come in smaller vessels. The nature of the North Atlantic and the distances involved require larger vessels. This makes the task of location and identification somewhat easier, provided, of course, that you know what you are looking for. This does not, however, mean that Canada can be complacent, since there is a strong incentive for criminal elements to exploit any weakness. If Canada is seen as the easy way to get into the United States, then smugglers will utilise it. If the United States does not consider that Canada is stopping the threat before it enters Canada, then the United States will take the necessary steps to stop the threat at the Canada-US border. The resulting effect on Canada's easy access to the United States would have serious financial, as well as social, repercussions.

²⁷ S. Kempton, Public Health Agency of Canada, pers. comm. (29 November 2008).

In terms of the EU experience, while the situation on Canada's Atlantic coast is quite different, the situation on the Great Lakes and Strait of Juan de Fuca may be somewhat analogous. With shorter distances across the St. Lawrence River boundary, there is a considerable amount of cross border smuggling in small boats. The success of the Integrated Border Enforcement Teams and the Ship Rider Agreement may be worth considering by the EU as a possible model.

Workshop Discussion Summary

Maritime Security Issues

Susan Rolston

Kamrul Hossain, Arctic Centre, University of Lapland, and Hugh Kindred, Marine & Environmental Law Institute, Dalhousie University (with Mary Brooks, Dalhousie University), and Adam Stepien, Arctic Centre, University of Lapland (with Henna Tervo and Kamrul Hossain, Arctic Centre, University of Lapland), and Hugh Williamson, Marine Affairs Programme, Dalhousie University, presented their papers on maritime security initiatives in the European Union and Canada and the issue of illegal immigration by sea to the EU and Canada respectively, focussing on maritime security response approaches.

Following the paper presentations, Louise Head, DG MARE B-1, European Commission, commented on initiatives of the European Commission regarding piracy off the coast of Somalia. In light of the recent increase in piracy attacks, the international community has increased its efforts through NATO, IMO, at the national level (e.g., The Netherlands protection of the World Food Programme (WFP) in Somalia under NAVCO), the EU (e.g., naval mission Atalanta under the European Security and Defence Policy), and the United Nations (e.g., recent resolutions on piracy and the 10–11 December 2008 conference on piracy in Nairobi). Operation Atalanta will be the first under the second pillar of the EU and will be launched on 15 December 2008. Under the command of the UK, ships and patrol aircraft will escort WFP shipments and contribute to preventing acts of piracy and attacking pirate vessels. Only four Member States have provisions to try pirates under national criminal law and they might not be willing to use it; neighbouring countries such as Kenya and Djibouti may request support to do so. Under the Instrument for Stability, which offers financial assistance to countries threatened or undergoing severe political instability or suffering from disasters, the EU is conducting an ongoing study on critical maritime routes in the Horn of African and Arabian Peninsula. A possible follow-up to this study might be a ReCAPP style operation focussing on coordination of information, documentation and control operations. The upcoming UN conference on piracy, comprised of a technical meeting and a ministerial meeting, is expected to lead to agreement on recommendations to control piracy, e.g., closing the land bases of pirates with the assistance of authorities in Puntland, increasing intelligence on local structures and re-engaging the Somali peace process.

Discussion following the presentations largely focussed on the issue of piracy. Fishing vessels are not being targeted by pirates despite the argument that illegal fishing is largely responsible for the economic situation encouraging pirate activity off Somalia. It was suggested that the international community could offer to provide fisheries surveillance capacity in the region, thereby reducing the threat of pirate activity. The problem of laying criminal charges against pirates was also raised. International law allows national laws to be put in place, but very few countries have chosen to do so. For example, Canada has broadened the definition of piracy in its law, but it is applicable only within waters over which it has national jurisdiction. The SUA Convention does not deal with piracy. There is no widely defined international crime of “piracy” and even if there were, it would need to be implemented nationally. Piracy on the high seas has resulted in significant changes in the availability of marine insurance and its cost; some ships are now going around the Cape of Good Hope despite the increased fuel costs and time delay in order to avoid the waters off Somalia.

Part IV

Management of Maritime Safety and Vessel-Source Pollution

Chapter 14

Responsive Ocean Governance: The Problem of Invasive Species and Ships' Ballast Water – A Canadian Study

Moira McConnell*

14.1. Introduction

The problem of terrestrial and aquatic alien invasive species as an environmental concern came to the forefront of international law and policy and public awareness in conjunction with the adoption of the 1992 Convention on Biological Diversity¹ (CBD) and the United Nations Conference on Environment and Development (UNCED). However this has been present both as a “real world” phenomenon and concern for a significantly longer period.² As pointed out in a recent interdisciplinary publication focusing on invasive seaweeds,

... the introduction of alien invasive species poses one of the most serious threats to both terrestrial and marine biodiversity. In fact, habitat loss, climate change, and alien invasive species are generally considered to top the list of biodiversity threats. Concern about invasions is not limited to biodiversity per se but extends to its broader socio-economic impacts on agriculture, forests, fisheries, aquaculture, and other human activities dependent on the stability of living resources in a particular

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¹ *Convention on Biological Diversity*, 31 *I.L.M.* 818 (1992), available: <<http://www.cbd.int>> (retrieved 4 December 2008) [hereinafter CBD]. In force December 1993. As at October 2008, 191 states are party. Canada ratified in December 1992.

² As recently pointed out by E. Mitropoulos, Secretary-General of the International Maritime Organization (IMO), “Scientists first recognized the signs of introduction of aquatic alien species after a mass occurrence of the Asian phytoplankton algae *Odontella* in the North Sea in 1903,” Foreword, in M. H. Fonseca de Souza Rolim, *The International Law on Ballast Water. Preventing Biopollution* (Leiden/Boston: Martinus Nijhoff/Brill, 2008). Some authors suggest even earlier dates: see O. Endresen, H. Lee Behrens, S. Brynestad, A. B. Andersen, and R. Skjong, “Challenges in ballast water management,” *Viewpoint*, in *Marine Pollution Bulletin* 48 (2004): 615, citing J. T. Carlton, *Introduced Species in US Coastal Waters: Environmental Impacts and Management Priorities* (Pew Oceans Commission, 2001).

ecosystem. As a result, invasive species pose almost incalculable economic, socio-cultural and human health security risks. Estimates of the cost of responding to this problem around the globe vary widely. One estimate of the cost to the US economy is USD137 billion per year (Murray et al. 2004). Although concern about the issue of introduction of alien species was evident in the late 1970s, the scope of the problem only gained widespread attention of law and policy makers in the 1990s.³

The last comment is, however, qualified by the fact that, for the most part, concern about invasive species and biodiversity protection per se focused, at least initially, on the introduction of *terrestrial* species and, in particular, *intentional* introductions. The reason for this focus probably relates to the institutional location of the CBD (the United Nations Environment Programme (UNEP)), and the fact that, at a national level, regulations could build upon existing practice in connection with agricultural health practices and border control inspections (e.g., quarantine) that were already in existence in most countries in relation to the introduction of species diseases and pests.

More recently, extensive attention, at all levels of regulatory activity, has been paid to the problem of intentional and unintentional introductions of marine or aquatic species. *Intentional* introductions, such as import of species for aquariums or aquaculture, largely fall under the same regime as terrestrial border control practices involving permits and licenses, etc.⁴ *Unintentional* introductions, primarily through ships operations, pose a different, and in many respects, a more complex problem. This problem is part of the overall concern for biosecurity and protection from what has been called “biopollution.”⁵ As discussed extensively in other studies,⁶ an important unintentional vector or

³ M. Doelle, M. L. McConnell, and D. L. VanderZwaag “Invasive seaweeds: global and regional law and policy responses,” *Botanica Marina* Vol. 50 (2007): 438–450, p. 438.

⁴ To secure biosafety, transfer of organisms that have been modified by biotechnology (Living Modified Organisms – LMOs) are the subject of the Cartagena Protocol on Biosafety to the CBD. It entered into force in 2003.

⁵ Rolim, see n. 2 above.

⁶ M. L. McConnell, “Ballast & Biosecurity: The Legal, Economic and Safety Implications of the Developing International Regime to Prevent the Spread of Harmful Aquatic Organisms and Pathogens in Ships’ Ballast Water,” *Ocean Yearbook* 17 (Chicago: U. of Chicago Press: 2003), p. 213. See also M. L. McConnell, *Globallast Legislative Review – Final Report*, Globallast Monograph Series I (London: IMO, 2002), available: <<http://globallast.imo.org>> (retrieved 4 December 2008). See also Endresen et al., n. 2 above and references cited therein or more recently, S. McGee, R. Piorkowski, and G. Ruiz, “Analysis of recent vessel arrivals and ballast water discharge in Alaska: Towards assessing ship-mediated invasion risk,” *Marine Pollution Bulletin* 52 (2006), p. 1634 and references cited therein.

path for the transfer of species between marine ecosystems is through ships' ballasting operations: organisms can "stow away"⁷ in the water taken on board ships in one port as ballast when cargo is discharged. This water is then carried in ships' tanks and discharged in another port or ports, when cargo is picked up. The potential enormity of the problem is revealed when one considers that:

Globally, it is estimated that about 10 billion tonnes of ballast water are transferred [between ports] each year. Each ship may carry from several hundred litres to more than 100,000 tons of ballast water, depending on the size and purpose of the ship.⁸

Thus the ordinary activities of shipping and transport, the foundation for international trade, are now also "vectors" or carriers of disease and harmful aquatic organisms. The problem is largely the result of increasingly seamless transport systems and larger ships moving more rapidly between ports on continuous routes. It is also, therefore, a by-product of the increased globalisation of trade. It means that shipowners now find themselves operators of vectors that form part of a transport corridor for species and organisms that may pose a danger to human and ecological security. Port and coastal authorities in this scenario are cast as either guardians or gaps in the biosecurity of the state. In both cases the reality of a world of biosecure ports is on the horizon.⁹ Indeed, the Global Ballast Water Exchange Management Programme (GloBallast),¹⁰ created by the Global Environment Facility, United Nations Development Programme, and the International Maritime Organization (IMO) in the spring of 2000, was established on the view that:

⁷ The imagery used in describing the problem is itself of interest, although not the subject of this chapter. For example the language has focused on the "foreignness" of the organisms as analogised to the human construct of citizen and immigration practices, e.g., "alien." Perhaps, more curious, the terms have also attributed a level of intentionality on the organisms involved in the process, e.g., "stowaways," "alien invaders," "hitchhikers," and "uninvited guests." Nature itself is cast as a hostile force, with ecosystems envisaged as essentially static and as constructed at the point of ratification of the CBD.

⁸ International Maritime Organization (IMO), "Alien invaders—putting a stop to the ballast water hitchhikers," *Focus on IMO* (London: IMO, 1998), available: <<http://www.imo.org>> (retrieved 4 December 2008), p. 1 [hereafter IMO].

⁹ M. Grey, "More muscle for port health," *Lloyd's List Maritime Asia* (May 2001), p. 10, comments on this point in the context of the foot-and-mouth disease restrictions. See also the recent Canadian approach, which cast the problem as one of protecting "ocean health"; see "Purpose of the Health of the Oceans Initiatives," available: <<http://www.dfo-mpo.gc.ca/oceans/management-gestion/healthyoceans-santedesoceans/initiatives-eng.htm>> (retrieved 4 December 2008).

¹⁰ *The Problem*, GloBallast Programme Website (London: IMO, 2000 and ongoing), available: <<http://globallast.imo.org/problem.htm>> (retrieved 4 December 2008).

The introduction of invasive marine species into new environments by ships' ballast water attached to ships' hulls and via other vectors has been identified as one of the four greatest threats to the world's oceans.¹¹

The present chapter is concerned specifically with providing an overview of the Canadian regulatory response to the issue. The study begins by providing a brief description of various dimensions and characterisations of "the problem" and is followed by an outline of international regulatory responses. The Canadian response is set out in section 14.4 and followed by observations in section 14.5. This study suggests that Canada has shown leadership internationally in raising awareness of the problem generally, as well as working effectively on a bilateral/regional basis to address it with respect to specific species. Concrete efforts have been made in Canada to find a way to bring together diverse governance institutions and interests, under the theme "Health of the Oceans." This is despite the fact that Canada has not yet ratified the relevant international convention. However, more attention still needs to be paid to regulatory design. In particular, efforts need to be devoted to risk assessment and baseline studies and monitoring in connection with the shift from discharging in ports to discharging in coastal water and to address the issue of the coasting trade. In addition, efforts need to be made to also prevent the export of species. Despite these concerns it is suggested that the Canadian experience to date demonstrates that an approach which explicitly focuses on regulatory design concerns provides a more effective means of addressing the multiple dimension of problems that cut across sectors and institutional and legal frameworks.

14.2. The Nature of the Problem¹²

This section considers, first, the nature of the problem posed by species movement. It then considers the specific problem of transport in ships' ballast water.

¹¹ Id.

¹² The discussion in this section is drawn from McConnell, *Ocean Yearbook*, n. 6 above.

14.2.1. The Problem of Species Movement

There has always been some natural movement of species through the medium of water; however, the combination of distance, weather, differing water temperatures, and salinity and food sources in the various marine ecosystems of the southern and northern waters has limited the scope and range of natural migration. Human assisted species transfer does not easily fit the traditional paradigm of human activity resulting in pollution. In the last two decades, particularly since 1992, environmental law and international environmental institutions have embraced a systemic view of the interaction between human activity and the physical environment. This system or ecosystem is understood to be dynamic and is not easily subject to the more usual point-in-time evaluations of cause, effect, and singular responsibility. The significance of the environment in the maintenance of human health and economic security is now also part of national security agendas. This acceptance of these ideas is evidenced by the nearly universal ratification level (190 states and the European Community as of October 2008) of the CBD.¹³

Emphasis has shifted from a narrow focus on preventing pollution to a broader approach aimed at supporting and maintaining the existing ecosystem and its chain of interdependence as intrinsically valuable. This view clearly encompasses the question of human intervention in the ecosystem through activities such as transport systems that transfer species. Despite this conceptual shift found in modern multilateral environmental agreements (MEAs), questions of enforcement and compliance are rendered somewhat more difficult by the more traditional pollutant/substance orientation of many international and domestic regulatory regimes. As alluded to in the introduction, this shift to the concept of biodiversity also has broader implications for international and domestic governance. The divide between land-based marine pollution and environmental protection (UNEP) and ocean activities (e.g., United Nations Division for Ocean Affairs and Law of the Sea; IMO; Food and Agriculture Organization of the United Nations Agency (FAO), UNESCO (Intergovernmental Oceanographic Commission)) is narrowed and perhaps even closed. At a national level, the former is usually dealt with by an environmental ministry, while maritime transport, for example, is usually dealt with by maritime transport administrations.

Leaving aside the situation of disease-carrying microbes or toxic dinoflagellates, the question of whether species migration is a “natural” event and whether an organism is invasive or harmful in an absolute sense is difficult, largely because its introduction and “harmfulness” is contingent on various

¹³ See CBD, n. 2 above.

factors. In many cases, a species may not be invasive or a pest in its home state, where it forms part of the ecosystem (which includes natural predators or other factors that limit its growth). However, it may become a pest in another welcoming host environment where there are no natural limits on its growth. In these cases, it may become a predator on indigenous species, or it may disrupt and even destroy the food chain or ecosystem to which it has emigrated. This can have a significant impact on indigenous species in the region, in particular, fisheries. The case of the American comb jellyfish that destroyed the entire anchovy fishery when it migrated to the Black Sea is infamous. That same species has now migrated, probably in ballast water, east to the Caspian Sea, endangering the seal and other species populations.¹⁴ This is only one case out of many.¹⁵ There are the obvious commercial consequences arising from the destruction of a marine capture fishery. In addition, this issue threatens coastal aquaculture species that are often more vulnerable. On a broader level, this poses a significant risk to the success of states working with international organisations such as FAO to encourage aquaculture/mariculture as a way to meet the escalating demand for protein and food security in the face of the loss of marine capture stocks as a result of environmental changes and overexploitation.¹⁶

Some aquatic organisms such as algae blooms or toxic dinoflagellates also pose a significant danger to human health when they enter the food chain. A summary published by the IMO regarding the Australian experience with “red tide” is a good illustration of challenges posed by the spread of some organisms:

Toxic dinoflagellates are a type of algae known to cause paralytic shellfish poisoning in humans. Evidence suggested that the toxic dinoflagellate *Gymnodium catenatum* became established in Australian waters after arriving in ballast water – the species was already present in waters of Argentina, Japan, Mexico, Portugal, Spain, Venezuela and in Mediterranean sea ports ... Dinoflagellates can reproduce simply by splitting in two, allowing multiplication wherever conditions are favourable. *Gymnodium catenatum* also has a type of reproduction in unfavourable conditions, which can result in a tough encased spore that

¹⁴ A. Morgan, and D. Harrison, “Invading jellyfish crisis for Caspian seals,” *Nature Watch, Sunday Telegraph* (London, 5 November 2000), p. 15.

¹⁵ S. Gollasch, *Removal of Barriers to the Effective Implementation of Ballast Water Control and Management Measures in Developing Countries* (London: GEF/UNDP/IMO, 1997), available: <<http://www.imo.org/imo/focus>> (retrieved 4 December 2008).

¹⁶ FAO, *The State of World Fisheries and Aquaculture 2000* (Rome: FAO, 2000), available: <<http://fao.org/DOCREP/003>> (retrieved 4 December 2008).

can survive different conditions by staying dormant in sediment. These spores remain viable for 20–30 years, germinating in the usual swimming form when conditions are suitable, and entering the food cycle of shellfish causing the shellfish to become toxic to humans.¹⁷

The same study also notes that similar problems resulting from dinoflagellates introduced through ballast water have been experienced in other countries, including China and India.¹⁸

The fact that many species and pathogens can survive in adverse conditions and remain undetected in a new environment for a long period of time after the transfer means that both their detection and eradication is difficult, perhaps even impossible, as is the attribution of specific blame or liability. The problem is compounded in the case of pathogens. A related problem is that most countries have very little scientific knowledge about the range of organisms in their waters to determine whether they have a problem organism in their coastal water that they may be exporting or whether their systems will have a problem with a species that might be imported. This means that the determination of the current level of biodiversity is itself an inexact process.¹⁹

At the same time it must be understood that the majority of species will not adapt to new environments, particularly if there is a great variation in temperature or salinity or other conditions between ecosystems. However, unlike oil and other pollutants, once an invasive organism is introduced it is virtually impossible to remediate the environment. There have been some instances of physical removal or introduction of predators, but they are relatively few and may pose their own problems.²⁰ Accordingly most responses have focused on containment strategies.²¹ Once a new species is introduced, the host ecosystem or environment is changed forever. This explains why

¹⁷ See IMO, n. 8 above.

¹⁸ Id.

¹⁹ Efforts have been underway now for several to encourage ports to conduct baseline port surveys. See S. Raaymakers, "Port Surveys Underway," *Ballast Water News* 4 (2001): 3–5; C. L. Hewitt, and R. B. Martin, *Revised Protocols for Baseline Port Surveys for Introduced Marine Species: Survey Design, Sampling Protocols and Specimen Handling*, Technical Report No. 22. Centre for Research on Introduced Marine Pests (Hobart, Australia: CSIRO, 2001), available: <<http://www.marine.csiro.au/CRIMP>> (retrieved 4 December 2008).

²⁰ F. McEnulty, N. Bax, B. Schaffelke, and M. Campbell, *A Rapid Response Toolbox: Strategies for the Control of ABWMAC Listed Species and Related Taxa in Australia*, Centre for Research on Introduced Marine Pests (Hobart, Australia: CSIRO, posted draft August 2000), available: <<http://www.marine.csiro/CRIMP/toolbox>> (retrieved 4 December 2008).

²¹ See *The Problem*, n. 10 above.

regulatory strategies should and indeed have focused on preventing the introduction of alien species and pathogens: there is no viable cure.

Although there is a great deal of recent interest in this problem, particularly in the last decade, it has a much longer history. Alien aquatic organism transfer has been dealt with in a number of international regulatory instruments since the 1970s. Although the International Convention for the Control and Management of Ships' Ballast Water and Sediments, 2004 (BWM Convention) is not likely to come into force the near future,²² the call to ratify it and bring it into force in order to establish obligations to address the issue is in fact a misunderstanding. International obligations regarding marine and other alien species transfer have existed since 1982. The development of a regulatory regime specific to the ballast water aspects of the pre-existing international obligations is simply a question of elaborating a response to existing obligations.

14.2.2. Ships' Ballasting Operations and Species Movement

In simple terms, ballast and the process of ballast discharge and intake (ballast management) keeps ships balanced or stable and mitigates the stresses that the ocean's movements place on the ship's superstructure. Ballast is functionally critical to ships' safety, particularly when a ship is not fully laden. Ballast in this sense is simply a concept or a function rather than any particular substance. Various materials have been used as ballast through the centuries. However, since the development of steel-hulled ships in the 19th century, seawater has been used for reasons of economy and efficiency.²³ Modern ships are equipped with various types of ballast tanks located at strategic points, relative to the cargo or passenger spaces, in the ship's hull. Depending on the ship's structure, many ballast tanks have extensive internal piping or other formations that facilitate the build-up of sludge or sediment in which organisms can thrive.²⁴ Depending on the voyage conditions, whether it has any cargo on board and the

²² The Convention will come into force on the ratification by 30 states whose combined merchant fleets constitute not less than thirty-five percent of the gross tonnage of the world's merchant shipping fleet. As of February 2009, 18 states have ratified, amounting to 15.36 percent of the world fleet: Albania, Antigua and Barbuda, Barbados, Egypt, France, Kenya, Kiribati, Liberia, Maldives, Mexico, Nigeria, Norway, Saint Kitts and Nevis, Sierra Leone, South Africa, Spain, Syrian Arab Republic, and Tuvalu.

²³ See IMO, n. 8 above.

²⁴ Tanks vary depending on ships' functions. Modern ships have segregated ballast tanks (SBT), i.e., tanks devoted only to the ballasting operation. Some older ships still operate with integrated systems, but these are being phased out.

size and function of the ship, e.g., bulk carrier, oil tanker, ferry, or fish factory, differing quantities of ballast water are taken on to maintain stability. It is a by-product of this core operational process, one that is intrinsically related to the operation of ships as carriers, that is causing the problem. Since the quantity of ballast required at any one time is directly related to the loading or unloading of cargo and the particular ship's stability requirements, the discharge or intake of ballast usually occurs either in or en route to and from port areas, or in sheltered waters close to the coastline of a country. The coastal and near coastal zones are replete with plant and animal organisms in various stages of their life cycles. They are also host to pathogens that may have entered port waters through municipal sewage outlets, discharge from other ships, or other land-based marine pollution sources. These organisms can live for long periods of time in the tanks. Estimates suggest they can survive up to three months or even longer in the water and sediment taken from coastal waters and pumped into the ballast tanks.

The microscopic size of many organisms and the point in their life cycles when they are taken on board also means that the ballast water filters currently in use are of limited utility. The extent of intake of organisms is exacerbated if the water is taken in very shallow or turbulent waters close to shore and at night, when many species move to the surface of the water. It is believed that at any one time "ballast water may be transporting 3000 species of animals and plants a day around the world."²⁵ With faster and larger ships going to more ports of call on each voyage the problems are magnified. While the operational activity causing the problem is reasonably simple to understand, given the key role of ballast in ships' operations and, ultimately, international trade, the solution is not equivalently simple.

The ballast water problem has come to international attention, particularly in the last two decades, as both ship speed and international trade have grown. This has been combined with the development of awareness of biodiversity maintenance as a core environmental and human security concern. However, concern about the transfer of species in ballast is not a new phenomenon. The problem, as it relates to transfer in ballast water, was documented as early as 1903 in the North Sea.²⁶ Regulatory controls of ballast discharge and dumping, not unlike those currently under discussion internationally, also existed well before the 20th century. Cohen and Foster comment on the experience in the United States as follows:

²⁵ See IMO, n. 8 above.

²⁶ Rolim, n. 2 above, and Gollasch, n. 15 above.

Ballast dumping came under regulatory control during the 19th century, as harbor masters barred ships from dumping rock, sand, mud and miscellaneous debris carried as ballast into harbors and channels, to prevent shoaling. In many areas, ballast dumping was banned by statute, both to protect channel depths, and in some cases, to prevent the fouling of waters. “Ballast grounds” were set up where ballast could be legally disposed of, and professional “ballast haulers” and guilds of “ballast heavers” serviced the merchant shipping industry. Even on America’s wild frontier, laws and regulations prohibited the dumping of ballast into harbors, although ... ships on the California coast frequently violated them.²⁷

Efforts are underway to develop and approve technology²⁸ to solve the problem of ships safety and ballasting operations. The most viable solution developed to date, aside from precautionary procedures to prevent or limit the initial intake of species in the water, is to exchange coastal ballast water for mid-ocean water that does not contain or support the coastal organisms. Open sea exchange does not totally eliminate the problem, but it can significantly reduce the risk of species transfer. However, mid-ocean or open sea exchange is anathema to most seafarers. It is seen as posing unacceptable safety risks to ships and seafarers’ and passengers’ lives, possibly in contravention of the annexes to the International Convention for the Safety of Life at Sea, 1974 and its Protocol of 1978 (SOLAS).²⁹

²⁷ A. Cohen and B. Foster, “The Regulation of Biological Pollution: Preventing Exotic Species Invasions from Ballast Water Discharged Into California Coastal Waters,” *Golden Gate University Law Review* 30 (Spring 2000): 787, p. 787. NB: Citations in the original text have been omitted. Interestingly reference to ballast dumping is still found in modern legislation. For example, a recent proposal (2008) to update Canada’s national fisheries law contained the following provision in connection with pollution prevention: “60. (1) No person shall (a) throw overboard ballast, stones or other substances that are detrimental to fish habitat in any waters frequented by fish.” See Bill C-32: An Act Respecting the Sustainable Development of Canada’s Seacoast and Inland Fisheries (the 39th Parliament ended on 7 September 2008 before the Bill was adopted), available: <<http://www2.parl.gc.ca/HousePublications/Publication.aspx?Docid=3153379&file=4>> (retrieved 4 December 2008).

²⁸ *International Convention for the Control and Management of Ships’ Ballast Water and Sediment, 2004*. Circulars: BWM.2/Circ.113 October 2007, available <<http://www.imo.org>> (retrieved 4 December 2008). List of ballast water management systems that make use of Active Substances which received Basic and Final Approval.

²⁹ *International Convention for the Safety of Life at Sea (SOLAS), 1974 (and its Protocol of 1978 (IMO, London))*. See IMO, *Harmful Aquatic Organisms in Ballast Water. Alternative ballast water treatment method*. Submission by Japan. 15 February 2001. MEPC 46/INF.19 (London: IMO).

Although species carried in ballast water is the focus of this study, from the point of view of ecological security, commercial efficiency and effective regulatory design, it is important to be aware that organisms are transferred between countries in other ways related to ships' operations. These include attaching to the ship's hull (a process called fouling), sea chest, the anchor and other parts of a ship, as well as cargo, cargo packaging and loading equipment. Of these, arguably ballast water operations pose the largest problem. Concerns have been expressed about these other maritime transport related vectors in various fora, but so far there is no specific international regulatory development.³⁰

14.3. The International Legal Response to the Problem of Aquatic Invasive Species and Harmful Organisms

International response to the problem aquatic invasive species and harmful organisms carried in ships' ballast water has occurred in various fora. This has led to conceptual complexity, problems of terminology and fragmented responses internationally and nationally. In part this relates to how the problem has been conceptualised and the related decisions on the appropriate institutional location for solving "the problem." However, it is one of the contemporary breed of cross cutting-issues that pose a challenge to existing international institutions and the related interaction at the national level. For example, it could be seen as purely a ship-source discharge problem and essentially addressed as a ship-source pollution issue. It could also be regarded

³⁰ Some states, such as Australia and New Zealand, also check for hull fouling. An electronic list serve posted a notice in early July 2001 of a proposed "Planning Meeting: Workshop on Ship Fouling and Biological Invasions in Aquatic Ecosystems" (notice on file). The workshop was proposed by a member of the US Navy, Naval Surface Warfare Centre, and a member of the US Coast Guard Environmental Standards Division. The proponents noted that:

Historically, hull fouling has been the most important means by which shipping has transported non-indigenous species ... impending limitations on the use of the most effective antifouling paint [organotin based] and on the conduct of hull cleanings, may result in increased fouling of ships and the subsequent transport of non-indigenous species.

The issue has also been raised in the meetings relating to the CBD. See, for example, SBSTTA/6/ paras 20–22, available: <<http://www.cbd.int>> (retrieved 4 December 2008). More recently, see R. Herwig, "Vessel fouling research," and I. Davidson, "Vessel biofouling," (Powerpoint presentations to the Pacific Ballast Water Group, A Regional Coordination Project, Meeting, 4–5 December 2007), available: <<http://www.psmfc.org/ballast/past-meetings/>> (retrieved 4 December 2008).

as a health security problem, or as an environmental protection/biodiversity problem, or all of these.

Like many of these other cross-cutting issues, such as climate change, the particular conceptualisation adopted and institutional placement affects the design of a regulatory approach and ideas about the best way to address the problem. Should the focus be on preventing the “export” with the source country responsible for preventing the uptake and spread, or is it purely a carriage problem with efforts directed toward the carrier? Is it an import/border control problem with the focus on the receiving country to prevent the inadvertent introduction/import of species? Or is it all three? The obvious answer is that efforts should be made in connection with all three points of potential response and responsibility. However, from an international regulatory perspective, this poses a challenge for achieving a comprehensive and integrated response. Initiatives first at the international level and then at the national level have generated differing terminology and with it potential differences in the scope of coverage and approaches. For example, the range of terms adopted includes “alien species,”³¹ “harmful aquatic organisms and pathogens,”³² “aquatic invasive species (AIS),”³³ and “non-indigenous aquatic organisms and pathogens,”³⁴ to name but a few.

This section provides a brief overview of the international regime concerning aquatic invasive species and harmful organisms. There are two primary sources for the international obligation to prevent the transfer and spread of species. The first and earliest source, the 1982 United Nations Convention on the Law of the Sea Convention (LOS Convention),³⁵ with its

³¹ *United Nations Convention on the Law of the Sea*, 10 December 1982, 1833 *U.N.T.S.* 397 [hereinafter LOS Convention], Article 196.

³² *International Convention for the Control and Management of Ships’ Ballast Water and Sediments*, 2004, IMO BWM/CONF/36 16 February 2004 [hereinafter BWM Convention]. Article 1(8), Harmful Aquatic Organisms and Pathogens, means aquatic organisms or pathogens which, if introduced into the sea including estuaries, or into fresh water courses, may create hazards to the environment, human health, property or resources, impair biological diversity or interfere with other legitimate uses of such areas. *Ballast Water Control and Management Regulations*, Canada (SOR/2006-129), section 1, “‘harmful aquatic organisms or pathogens’ means aquatic organisms or pathogens that, if introduced into the sea, including estuaries, or into fresh water courses, could create hazards to human health, harm organisms, damage amenities, impair biological diversity or interfere with legitimate uses of the waters.”

³³ The Canadian Action Plan to Address the Threat of Aquatic Invasive Species defined aquatic invasive species as “Fish, animal, and plant species that have been introduced into a new aquatic ecosystem and are having harmful consequences for the natural resources in the native aquatic ecosystem and/or the human use of the resource.”

³⁴ Transport Canada, *A Guide to Canada’s Ballast Water Control and Management Regulations* (TP 136117E 11/2007), p. 1.

³⁵ LOS Convention, n. 31 above.

careful delineation of flag, port and coastal state responsibilities and control over activities and actors, recognises a range of oceanic actors. Under this regime, matters relating to international standards for shipping as an ocean activity are primarily situated in the IMO, which has a well-developed regulatory model that it used for almost issues it has addressed. This model is focused on the ship and the flag state as the primary actors with port state inspections as the complementary mechanism for ensuring compliance on ships. Uniformity in approach among countries with the related minimisation of barriers to efficient and rapid movement of ships is an important value. In connection with this issue the IMO approach also involves some provisions relating to coastal state obligations to identify risky water and to warn ships regarding uptake³⁶ and an obligation to develop sediment reception facilities.³⁷

The later source, the CBD, has grown up within in the MEA system of UNEP and affiliated institutions and actors. In the marine context, the CBD primarily addresses coastal state responsibility to prevent loss of biodiversity and to avoid transboundary harm. Concern and practices such as environmental impact assessments, precaution, and valuing ecosystem diversity are important values in the CBD.

The regimes that have evolved in connection with these two conventions are consistent with each other in terms of their objectives, however, there are significant differences in their institutional and management cultures and frameworks. Although this contribution is not focused on the issue of integration of global governance per se, it does form part of the regulatory context because the tension that results from the difference in these two regimes is played out at the level of domestic institutional and legal implementation.

14.3.1. The Law of the Sea³⁸

The LOS Convention³⁹ was adopted in 1982, came into force in 1994 and, as of November 2008, is binding on 157 states.⁴⁰ The LOS Convention was one of the first attempts by the global community to provide a comprehensive regime for managing an international space. It also introduced an holistic framework for addressing environmental rights and responsibilities.⁴¹ Article 196 of the

³⁶ BWM Convention, n. 32 above, Regulation C-2.

³⁷ *Id.*, Article 5.

³⁸ The text in the section draws upon earlier studies, see McConnell, n. 6 above.

³⁹ BWM Convention, n. 32 above.

⁴⁰ See United Nations website at <<http://www.un.org/depts/los>> (retrieved 4 December 2008).

⁴¹ J. Charney, "The Marine Environment and the 1982 Law of the Sea Convention," *The International Lawyer* 28 (Washington: American Bar Association Press, 1994): 879–901.

LOS Convention specifically addresses the problem of alien species and state obligations.

Article 196

Use of technologies or introduction of alien or new species

1. States shall *take all measures necessary to prevent, reduce and control pollution of the marine environment resulting from the use of technologies under their jurisdiction or control, or the intentional or accidental introduction of species, alien or new, to a particular part of the marine environment, which may cause significant and harmful changes thereto.*
2. This article does not affect the application of this Convention regarding the prevention, reduction and control of pollution of the marine environment. (emphasis added)

This provision places an obligation on all states to prevent the intentional and the unintentional transfer of species that may be harmful to another marine environment. One of the difficulties that has arisen in connection with Article 196 relates to the distinction seemingly being drawn in subsection 2 between marine pollution, defined in Article 1 (4) of the LOS Convention:

1. For the purposes of this Convention:

...

(4) “pollution of the marine environment” means the introduction by man, directly or indirectly, of substances or energy into the marine environment, including estuaries, which results or is likely to result in such deleterious effects as harm to living resources and marine life, hazards to human health, hindrance to marine activities, including fishing and other legitimate uses of the sea, impairment of quality for use of sea water and reduction of amenities ...

This definition of marine pollution, which does not clearly cover the situation of species transfer, has been adopted in many national laws. The negotiating history of Article 196 indicates that, in the course of developing this text, there were two distinct duties in mind: preventing pollution, and closer to the more recent biodiversity concept, maintaining the natural state of the marine environment.⁴² Although it did not survive the final negotiations, it is also

⁴² M. Nordqvist, ed. in chief, *United Nations Convention on the Law of the Sea 1982. A Commentary*, Vol. IV (Dordrecht: Martinus Nijhoff, 1991), pp. 73–76.

interesting that one version of the text imposed a responsibility to restore affected environments to their pre-alien species transfer state.⁴³

Another related question arises as to what actions states can, or are obliged, to take to prevent the risk of a transfer of invasive species and pathogens, both coming into and leaving their jurisdictions. This question might itself comprise a paper. The LOS Convention does not specifically address this question, however, it is clear that a state has a sovereign right to determine the basis of entry into its internal waters (i.e., most ports), subject to the customary practice regarding situations where human lives are in danger.⁴⁴ The coastal state can also pass laws governing the innocent passage (defined in Article 19) of foreign ships through its territorial sea (out to 12 nautical miles) in order to, *inter alia*, preserve the environment of the coastal state (Article 22 (1)(f)), conserve living resources and prevent the infringement of fisheries regulations (Article 22(1)(d) & (e)), and prevent infringement of sanitary laws and regulations (Article 22(1)(h)). However, this legislative authority is subject to the important restriction in Article 21(2):

Such laws and regulations shall not apply to the design, construction, manning or equipment of foreign ships unless they are giving effect to generally accepted international rules and standards.

Coastal/port state marine pollution prevention and enforcement rights and obligations are primarily set out in Part XII of the LOS Convention. These rights are very complex and depend on a range of factors⁴⁵ including restrictions – safeguards – placed upon the right to inspect and detain ships (e.g., Article 226). There is a clear duty under Article 194 on states to prevent, control and reduce marine pollution caused by activities under their control and to prevent damage to other states, including the duty to prevent pollution from ships by, *inter alia*, “... preventing intentional and unintentional discharges and regulating the design, construction, equipment, operation and manning of ships.” Articles 194, 211 and 217 are the source of flag state responsibility for primary regulation of ships. The omission of the word operation from Article 21(2) appears to allow a coastal state to adopt national standards, subject perhaps to other agreements that may be been ratified, in the territorial sea with

⁴³ R. Platzöder, ed., *Third United Nations Conference on the Law of the Sea: Documents*, Vol. X (New York: Oceana Publications, 1986), p. 453.

⁴⁴ R. R. Churchill and A. V. Lowe, *The Law of the Sea* (Manchester: Juris Publishing, 1999), pp. 62–65, regarding the right to set conditions for access to the port as stated in *Nicaragua* [1986] ICJ Rep. 14, p. 111.

⁴⁵ For example, Articles 211, 217, 218 and 219 and 220, which all require a detailed consideration of the ship’s location and standard of proof.

respect to ships' operations without offending the right to innocent passage, although any national legislation will be subject to the requirement of non-discrimination (Article 24; Article 227). In the absence of an internationally-binding standard, this point is relevant to coastal states' choices regarding the method adopted to prevent the transfer of species in ballast water (equipment based or operational procedures).

The LOS Convention regime recognises that "problems of ocean space are closely interrelated and need to be considered as a whole" (Preamble). It is based on a careful balancing of rights and claims and remains a key source of state responsibility for protection of the marine environment and its living resources. However, since 1982, the evolution of global comprehension of the relationship between human activities and the environment and the concept of sustainable development has taken the next step to an even more holistic or integrated approach based on an ecosystemic view. It means that, aside from questions of interpreting national legislation and coastal state and port state enforcement rights, the later and even more broadly supported 1992 CBD have, arguably, subsumed or at least significantly altered the understanding and implications of the LOS Convention marine pollution provisions.

14.3.2. The Convention on Biological Diversity⁴⁶

The Convention on Biological Diversity⁴⁷ was adopted in 1992 at UNCED and came into force soon after, in late 1993. As noted earlier it has close to universal ratification.⁴⁸ The CBD also addresses state obligations regarding alien species. Article 8, In-Situ Conservation, of the CBD requires, *inter alia*, that:

Each Contracting Party shall, as far as possible and as appropriate:

(h) Prevent the introduction of, control or eradicate those alien species which threaten ecosystems, habitats or species;

These obligations apply not only to protecting biodiversity in the state's territory but also to the effects on biodiversity elsewhere. Article 4, Jurisdictional Scope, provides:

⁴⁶ The text in the section draws upon earlier studies, see McConnell, n. 6 above.

⁴⁷ CBD, n. 1 above.

⁴⁸ *Id.*

Subject to the rights of other States, and except as otherwise expressly provided in this Convention, the provisions of this Convention apply, in relation to each Contracting Party:

(b) In the case of processes and activities, *regardless of where their effects occur*, carried out under *its jurisdiction or control*, within the area of its national jurisdiction or *beyond the limits of national jurisdiction*. (emphasis added)

It is clear then, given the high level of ratification of both the LOS Convention and the CDB, that most states already have an international obligation to address the problem of alien species transfer, to the extent that it occurs within their jurisdiction or because of an activity under their control. This includes the role of flag states and the role of coastal/port states as “source” and “import” states. The CBD is clearly relevant to the question of a state’s international responsibility to prevent *both* the export and the import of alien species and pathogens in ships’ ballast water.

14.3.3. Ships’ Ballast Water: The International Regulatory Response⁴⁹

In addition to these two comprehensive conventions establishing general obligations regarding species transfer, efforts began as early as 1973, under the auspices of the IMO, to address the specific problem of species carried in ships’ ballast water. These efforts, which largely follow the approach taken by IMO Member States to dealing with ship source pollution, can also be understood as a step to implement the obligations in the LOS Convention. In 2004 these efforts, complemented by a programme for implementation, culminated in the adoption of the International Convention for the Control and Management of Ships’ Ballast Water and Sediments, 2004 (BWM).⁵⁰ The following briefly outlines the progress of the issue in the IMO.

In 1973, an International Conference on Marine Pollution organised by IMO passed Resolution 18, Research into the effect of discharge of ballast water containing bacteria of epidemic diseases.⁵¹ However no specific international regulatory action was taken with respect to species transfer until the late 1980s and early 1990s when a number of states presented research and argued for international rules on this issue in IMO’s Marine and Environmental Protection Committee (MEPC). Canada was one of the lead countries raising

⁴⁹ The text in the section draws upon earlier studies, see McConnell, n. 6 above.

⁵⁰ BWM Convention, n. 32 above.

⁵¹ IMO, n. 8 above, p. 15.

this concern, largely as a result of the economic and other impacts of invasive species in waters shared with the United States.⁵² In 1991, non-binding rules entitled Guidelines for Preventing the Introduction of Unwanted Organisms and Pathogens from Ships' Ballast Waters and Sediment Discharges, originally drafted by Canada and modified in a working group, were adopted by the MEPC.⁵³ These were further developed in light of more experience and adopted, in 1993, by the IMO General Assembly.⁵⁴ In 1994 a working group began to examine the possibility of legally binding regulations that also tried to address the ship safety issues. In 1997 the IMO General Assembly adopted Resolution A.868 (20)⁵⁵ that revised the earlier guidelines. One of the more significant features of the revision was the formal adoption of a risk minimisation and management approach to the problem, as reflected in the new title, Guidelines for the control and management of ships' ballast water to minimize the transfer of harmful aquatic organisms and pathogens.

The 1997 Guidelines differ from the more usual IMO regulatory strategy which emphasises flag state responsibility and control. The Guidelines apply to all ships and encourage adoption of uniform rather than unilateral state practices. However, they also state that,

11.2 Member States have the right to manage ballast water by national legislation. However, any ballast water discharge restrictions should be notified to the Organization.

The majority of the provisions in the Guidelines are directed either to port/coastal states or simply recommend that ships' have a Ballast Water Management Plan (BWMP) and keep a record of ballast water intake and discharge that can be reported to port authorities. Both port administrations and ships are to make use of a standardised Ballast Water Reporting Form. Governments are required to ensure training for ships' crews and masters to ensure proper implementation of the BWMP. The Guidelines also recommend that ships adopt precautionary approaches to try to prevent or reduce the risk of uptake or discharge of harmful organisms. Precautions include avoiding taking up ballast water at night; removing tank sediment regularly; avoiding uptake in

⁵² Canada and Australia were the first countries to pursue this issue at the international level as it relates to marine species transfer. In 1988, Canada presented a study, *The Presence and Implication of Foreign Organisms in Ship Ballast Water Discharged in the Great Lakes*, MEPC 26/4, IMO (4 July 1988).

⁵³ IMO, n. 8 above.

⁵⁴ IMO, Resolution A.774(18).

⁵⁵ IMO, Resolution A. 868(20), *Guidelines for the control and management of ships' ballast water to minimize the transfer of harmful aquatic organisms and pathogens* (1997).

very shallow water or where a propeller may stir up sediment and practice either open sea exchange, minimal or no release of ballast water; discharge into reception facilities; or making use of other treatment options. Under the Guidelines, ports are required to provide information to ships corresponding to the operational requirements. For example, a port state is required to inform ships about its ballast water management requirements, reception facilities, alternate discharge zones and other port contingency requirements. In addition, the port state is required to support ships' measures to avoid the intake of organisms and pathogens by providing information on

... areas with outbreaks, infestations or known populations of harmful organisms and pathogens; areas with phytoplankton blooms (algal blooms, such as red tides); nearby sewage outfalls; nearby dredging operations; when a tidal stream is known to be the more turbid; and areas where tidal flushing is known to be poor.⁵⁶

The Guidelines also recommend a risk minimisation approach that involves the port state taking into account factors that indicate that a ship's ballast water is low risk for species transfer. The two factors mentioned that can reduce the risk of an invasive species establishing in the coastal zone are disparate conditions between the place of ballast water intake and the port, and the age of the ballast water.⁵⁷ The Guidelines are important because they apportion responsibility for prevention to both ships' and the port/coastal state. Although the BWM Convention was subsequently adopted, it is not in force: the 1997 Guidelines, therefore, remain the existing applicable but non-binding instrument.

The BWM Convention, adopted by the IMO in 2004, reflects an approach based on the more traditional IMO regulatory strategy with its focus on the flag state management/certification rules, with less emphasis on port/coastal state export prevention responsibilities. Its Preamble refers to the LOS Convention

⁵⁶ Id., Article 8.2.2.

⁵⁷ An example of this approach, called the Australian Ballast Water Decision Support System (DSS), is a key feature of the Australian regulations which became fully mandatory in July 2001. *New Ballast Water Management Arrangements for International Shipping Visiting Australia*, submitted by Australia, 16 February 2001, MEPC 46/3/5 (London: IMO, 2001). Det Norske Veritas (DNV) in cooperation with the EU Concerted Action Group on Ballast Water has also developed an on-line risk assessment tool called EMBLA that uses biogeographical data as a predictor of high risk journeys and high risk ships. Det Norske Veritas (DNV), *The EMBLA Methodology* (Norway: DNV, 1999), available: <http://www.dnv.at/branche/maritime/publicationsanddownloads/publications/maritime_news/2000/No_4_2000/RiskbasedBallastWaterManagement.asp> (retrieved 4 December 2008) [hereafter DNV].

and the CBD regimes, public health, the need for a precautionary approach, and notes concerns about unilateral action and the need for globally applicable regulations and guidelines for effective implementation and uniform interpretation. This Preamble firmly connects the issue and the Convention to the UNEP/World Health Organization biosecurity/state responsibility agenda and the UN Office for Ocean Affairs (LOS Convention Secretariat), as well as the more traditional IMO concerns about ship safety, security and uniformity of national regulation. At a macro-system level, this reflects the increasing integration and, perhaps, even overlapping oceanic interests of the various UN agencies.

The BWM Convention follows the structure and regulatory strategy used in IMO's other major ship-source marine pollution prevention instrument (MARPOL73/78) dealing with oil, chemicals, harmful substances in packaged forms, sewage, garbage and air emissions.⁵⁸ In fact, much of the text is based on MARPOL, Annex 1, Regulation from Prevention of Pollution by Oil, which regulates operational discharges of oil from ships. The Convention comprises a short agreement with articles setting out general rights and responsibilities of the states party followed by an annex with more detailed regulations that foresees the adoption of guidelines on specific technical issues. It affirms in Article 2 (3),

Nothing in this Convention shall be interpreted as preventing a Party from taking individually or jointly, more stringent measures with respect to the prevention, reduction or elimination of the transfer of harmful aquatic organisms and pathogens through the control and management of ships' ballast water sediments consistent with international law.

Flag state control and responsibility is central to the Convention, which provides for certification and recognition of an International Ballast Water Management Certificate. Ships must also have a flag state approved BWMP and ballast water record book that is available for inspection in foreign ports. This requires an initial ship survey, monitoring, and regulatory control by the flag state (as delegated in many cases to a classification society), with port states monitoring to ensure ongoing ship compliance with the certificate requirements. There are "existing ship" and "new ship" requirements for tanks and other equipment design issues, with a schedule under negotiation for

⁵⁸ *International Convention for the Prevention of Pollution from Ships*, London, 2 November 1973, as amended by *Protocol of 1978 relating to the International Convention for the Prevention of Pollution from Ships of 1973*, 17 February 1978, reprinted in *MARPOL 73/78 consolidated edition 1997* (London: IMO, 1997) [hereinafter MARPOL 73/78].

phasing out existing ships. As is the case with MARPOL73/78⁵⁹ it also requires efficient port state reception facilities for sediment disposal. The BWM Convention also provides for inspection and sampling but recognises potential commercial consequences by providing compensation for “undue delay.”

Also similar to MARPOL’s designated “special areas” formula found in, for example, MARPOL Annex 1 (Regulation 10),⁶⁰ the BWM Convention establishes generally applicable measures and standards with some ability to designate (based on internationally accepted criteria) areas in which more stringent ballast water discharge requirements may be imposed.⁶¹

The BWM Convention details technical standards and requirements for the control and management of ships’ ballast water and sediments. Ships are to maintain the on board BWMP and record ballast water operations in the ships’ ballast water record book. Ballast water exchange (discharge port/coastal water and up take of new water), if that is the management method used by the ship, is to be conducted at least 200 nautical miles from the nearest land and in water which is at least 200 metres in depth. In cases where the ship is unable to do this, the exchange can be conducted in areas at least 50 nautical miles from the nearest land and where the depth of the water is at least 200 metres. However, if the parameters of distance and depth cannot be met, the coastal/port state can designate, in consultation with adjacent states, areas where a ship could conduct the exchange.

The Convention also establishes standards for ballast water exchange, if that is the management method adopted, and ballast water performance standards if other measures are adopted beside ballast water exchange, i.e., concentration of viable organisms in the ballast water discharged. The latter has been one of the more complex issues with guidelines on the performance standards for the Convention only recently adopted.⁶² In addition, states are to have sediment reception facilities.

⁵⁹ Id.

⁶⁰ Id.

⁶¹ See BWM Convention, n. 32 above, Regulation C-1. See also the discussion in *Advice Concerning Legal Aspects of the Draft International Convention for the Control and Management of Ships’ Ballast Water and Sediments*, 16 February 2001, MEPC 46/3/4 (London: IMO, 2001).

⁶² The following Guidelines have been adopted so far:

Guidelines for sediment reception facilities (G1) adopted by resolution MEPC.152(55);

Guidelines for ballast water management equivalent compliance (G3) adopted by resolution MEPC.123(53);

Guidelines for ballast water management and development of ballast water management plans (G4) adopted by resolution MEPC.127(53);

Guidelines for ballast water reception facilities (G5) adopted by resolution MEPC.153(55);

Guidelines for ballast water exchange (G6) adopted by resolution MEPC.124(53);

Since ballast water exchange can have serious repercussions for the safety of ships, the BWM Convention provides that a ship need not comply with these requirements if the ship's master reasonably decides that such exchange would threaten the safety or stability of the ship, its crew, or its passengers either due to adverse weather, ship design or stress, equipment failure, or any other extraordinary condition.⁶³ Article 13 of the Convention provides that parties with a common interest in protecting the environment, human health, property, and resources in a given geographical area, particularly those parties bordering enclosed and semi-enclosed seas, can establish regional agreements consistent with the Convention.⁶⁴

This very brief overview of the BWM Convention illustrates the complexity of the regulatory challenges posed by this issue. There are also numerous aspects that are not addressed here, for example, the problem of coasting trade ships that may spread existing invasive species within

Guidelines for risk assessment under regulation A-4 of the BWM convention (G7) adopted by resolution MEPC.162(56);

Guidelines for approval of ballast water management systems (G8) adopted by resolution MEPC.125(53);

Procedure for approval of ballast water management systems that make use of active substances (G9) adopted by resolution MEPC.126(53);

Guidelines for approval and oversight of prototype ballast water treatment technology programmes (G10) adopted by resolution MEPC.140(54);

Guidelines for ballast water exchange design and construction standards (G11) adopted by resolution MEPC.149(55);

Guidelines on design and construction to facilitate sediment control on ships (G12) adopted by resolution MEPC.150(55);

Guidelines for additional measures regarding ballast water management including emergency situations (G13) adopted by resolution MEPC.161(56);

Guidelines on designation of areas for ballast water exchange (G14) adopted by resolution MEPC.151(55);

Guidelines for ballast water exchange in the Antarctic treaty area adopted by resolution MEPC.163(56).

⁶³ BWM Convention, n. 32 above, Regulation B-4 (4).

⁶⁴ On 13 July 2007, IMO adopted *Guidelines for Ballast Water Exchange in the Antarctic Treaty Area* (IMO MEPC 56, 2007). These Guidelines provide international guidance on the implementation of Article 13 of the BWM Convention on how ballast water is to be managed in regions of extreme cold with fragile ecosystems. The Guidelines provide an interim measure for all ships entering the Antarctic Treaty area before the Convention comes into force. Ships with ballast tanks entering the Antarctic waters should prepare a ballast water management plan taking into account the problems of ballast water exchange in cold environments and under Antarctic conditions. In addition, the Guidelines recommend exchange well before entering the Antarctic area. Importantly, the Guidelines address specific concerns for ships sailing in both Arctic and Antarctic waters, proposing special measures with respect to sediment in ballast tanks (para. 9) and the discharge of ballast water from Antarctic waters into Arctic and sub-Arctic waters (para.7).

a jurisdiction or the emerging concern with respect to ships that do not have ballast on board (NOBOB).⁶⁵

Although many coastal and port states have adopted national laws or regulations to implement the IMO resolutions and to protect their coastlines from this threat, the BWM Convention, which is primarily directed to flag states, is not yet in force. To date, the BWM Convention has been ratified by only 18 countries representing 15.36 per cent of the world gross tonnage.⁶⁶ It is unclear when or, perhaps even, whether the BWM will come into force. At present, then the binding preventative international obligations under the LOS Convention and the CBD are the applicable international regulatory regime. Until the the BWM Convention enters into force, Resolution A.868 (20) Guidelines remain the main international source for harmonising national practices. The problem of diverse national practices and the extent to which more stringent standards can be adopted, consistent with international law are, as yet, unresolved.

It is troubling that, despite some consideration in the MEPC working group for consistency in format between the BWM Convention and the then developing (and now in force) Anti-fouling Convention,⁶⁷ the former was not expanded to cover the other ways that ships carry organisms, such as on anchors and other equipment. The problem with the Anti-fouling Convention is that, whilst the decision to ban organotin-based anti-fouling paint is laudable and sensible, unless a substitute can be found that is equally effective, then the risk of alien species transfer will be increased due to increased ship fouling. The increased speed of trips may also mean that transfer by fouling will be increased. This means that regulators must also be prepared to inspect hull

⁶⁵ The International Joint Commission (IJC) established between Canada and the United States in 1978 to address concerns with respect to the shared Great Lakes' waters areas reported:

According to U.S. Coast Guard data, NOBOBs represent over 70 percent (74 percent in 1999, 72.1 percent in 2000 and 68.5 percent in 2001) of incoming ships to the Great Lakes–St. Lawrence River system. These NOBOB ships are fully loaded with cargo and as a result their ballast tanks contain minimal (generally less than 3 percent) residual untreated ballast water and sediment. Yet even these small residues can be contaminated with alien invasive species. Both a Transport Canada study and a more recent study presented at the 11th International Conference on Aquatic Invasive Species in 2002 reported finding live organisms in virtually all ships that reported as NOBOB. Clearly, current ballast water regulations are not sufficient to eliminate the risk these vessels pose.

International Joint Commission, *11th Biennial Report, on Great Lakes Water Quality*, Chapter 3 (2002), available: <<http://www.ijc.org/php/publications/html/11br/english/report/index.html>> (retrieved 4 December 2008).

⁶⁶ See n. 22 above.

⁶⁷ *International Convention on the Control of Harmful Anti-fouling Systems*. 18 December 2000, AFS/Conf/2, MEPC (London: IMO).

fouling as well as ballast water to ensure that there are no invasive species. The fact that other parts of the ship are not addressed in the ballast water regime has been noted in meetings related to the CBD and concern was expressed at the time about a piecemeal, gap-filling approach to dealing with related issues.⁶⁸

14.4. The Canadian Regulatory Response

As pointed out in the 2005 Canadian Action Plan to Address the Threat of Aquatic Invasive Species:⁶⁹

Aquatic invasive species (AIS) have been entering Canadian waters for centuries but never as rapidly as today. Every decade, some 15 alien species establish themselves in our coastal or inland waters and, in the absence of their natural predators, the most aggressive of them spread rapidly. They can radically alter habitat, rendering it inhospitable for native species.

Invading species have been implicated in both the vast reductions in, or outright extinction of, indigenous fish and the resulting devastation of local fisheries. Some invasives, such as the zebra mussel, do millions of dollars in damage annually to human infrastructure. In addition to damage to the environment, in total, invasive species cost billions of dollars every year due to lost revenue and the implementation of control measures. With more species poised to enter the country, these costs will only rise. Canada has 20 per cent of the world's fresh water and one of the longest coastlines, thereby placing it at high risk from AIS. As a result of insufficient awareness of the nature and size of the threat, there have been limited levels of compliance with practices and regulations designed to minimize the damage.

World leaders officially recognized the threat posed by invasive species in 1992, with the adoption of the UN Convention on Biodiversity.

⁶⁸ See SBSTTA/6/, n. 30 above. See also *Invasive Alien Species, Options for Future Work*, SBSTTA VI/8 (20 December 2000), available: <<http://www.cbd.int>> (retrieved 4 December 2008).

⁶⁹ Fisheries and Oceans Canada, Canadian Council of Fisheries and Aquaculture Ministers, Aquatic Invasive Species Task Group, *A Canadian Action Plan to Address the Threat of Aquatic Invasive Species* (2005), available: <http://www.dfo-mpo.gc.ca/science/environmental-environnement/action_plan/action_plan_e.htm> (retrieved 4 December 2008).

Canada responded in 1995 with the Canadian Biodiversity Strategy. In September 2001, federal, provincial and territorial ministers of forests, fisheries and aquaculture, endangered species and wildlife agreed to develop a Canadian plan to deal with the threat of invasive alien species. In 2002, they approved a blueprint for the plan. Also in 2002, the Canadian Council of Fisheries and Aquaculture Ministers created the Aquatic Invasive Species Task Group to develop an action plan to address the threat of aquatic invasive species.

The most effective approach to dealing with the hundreds of species that are (or could become) established in Canada involves managing the pathways through which invasive species enter and spread through Canadian waters. For aquatic species, these pathways are shipping, recreational and commercial boating, the use of live bait, the aquarium/water garden trade, live food fish, unauthorized introductions and transfers, and canals and water diversions. This plan does not address authorized introductions such as aquaculture or fish stocking, as they are covered by the *National Code on Introductions and Transfers of Aquatic Organisms*.

The shipping pathway is considered the largest single source of new aquatic invasive species. Ballast water that is taken on in foreign ports, for ship stability and safety at sea, is discharged in Canadian waters, along with undesirable “hitchhikers”—foreign species ranging from bacteria to larger organisms. While other pathways can also be a source of new species, they generally serve to spread species that have already established themselves in Canada and other parts of North America.

As discussed above in section 14.3.3, Canada has been active in raising international awareness and taking steps to address the problem of aquatic invasive species carried in ships’ ballast water (or hull fouling) in the IMO since the 1980s. Despite this relatively lengthy history of interest, progress on developing legislation has been surprisingly slow with the *Ballast Water Control and Management Regulations*⁷⁰ adopted only in 2006. Canada has not ratified the BWM Convention, although it is clear that the Regulations have been designed with view to implementation of the BWM Convention if Canada does ratify.⁷¹ There were, however, efforts and cooperative and research

⁷⁰ BWM Convention, n. 32 above, adopted pursuant to section 657.1 of the *Canada Shipping Act, 2001*.

⁷¹ Transport Canada, n. 34 above.

activities underway well before the adoption of these Regulations, including adoption of national guidelines in 1989 and cooperative activity with the United States in connection with specific species in the St. Lawrence Seaway and Great Lakes, since the early 1950s. These were areas that had been colonised by two very invasive species, the zebra mussel and the sea lamprey, as well what is now estimated as,

... over 150 other Aquatic Invasive Species (AIS)... [that are] believed to have been introduced initially via ballast water discharged from incoming foreign vessels, with secondary invasions and dissemination facilitated in many cases by carriage as hull-fouling organisms.⁷²

A brief overview of the wider Canadian response to invasive species in general is offered here to provide information on the institutional framework that was developed to address the fact that a number of institutions have a role to play, given that Canada has ratified both the LOS Convention and the CBD and was instrumental in encouraging the IMO to adopt the resolutions to address the problem species transferred in ships' ballast water. This is followed by a review of the specific responses to species carried in ships' ballast water.

14.4.1. Invasive (Alien) Species in General

Canada is a federation with legislative jurisdiction (powers) under its constitution shared between the national (federal) level and the provincial level.⁷³ The federal parliament is assigned the power to make international commitments. However, in many areas it cannot implement these obligations without the agreement and, often, the adoption of legislation by the provincial legislature. Navigation and shipping is a subject that is allocated to the federal government. However, for more recent cross-cutting issues such as "environment," both the federal and provincial governments have established government agencies and adopted legislation. "Canada is a dualist jurisdiction

⁷² Fisheries and Ocean Canada, Canadian Scientific Advice Secretariat, *Alternative Ballast Water Exchange Zones, 30 November – 1 December 2004, Montreal PQ*, Proceedings Series 2004/042 (April 2005), pp. 1–2.

⁷³ Canada has 13 provinces and territories. The *Constitution Act, 1867*, section 91 and 92, contains a list of enumerated "heads" or subject matters of legislative concerns over which parliament (federal) and each legislature (provinces) have exclusive authority. Residual law-making power is left with the federal government (Parliament). See N. Craik and C. Forcese, *Public Law, Cases, Materials and Commentary* (Toronto: Emond Montgomery, 2006), p. 125.

... [which means that a] ... treaty has no direct effect in domestic law until domestic legislation is passed to “transform” or “implement” it into Canadian law.”⁷⁴ Canada ratified the CBD in 1992⁷⁵ and the LOS Convention in late 2003.⁷⁶

As noted in the above excerpt from the Action Plan,⁷⁷ a Canadian Biodiversity Strategy was adopted in 1995. This was followed in 2001 and 2002 by efforts to coordinate responses by the various implicated departments of the federal government and a Canadian plan to deal with invasive species adopted in 2001. In 2004, An Invasive Alien Species Strategy for Canada⁷⁸ (IAS Strategy) was approved by federal, provincial, and territorial ministers responsible for wildlife, forests, fisheries and aquaculture, and endangered species.⁷⁹

In 2004, the federal government also committed to addressing invasive species in general in cooperation with the United States through agencies such as the International Joint Commission.⁸⁰ In 2005, a trilateral Prosperity Agenda for North America agreed to by the political leaders of Canada, the United States, and Mexico called on the governments of all three countries to “[c]ombat the spread of invasive species in both coastal and fresh waters.”⁸¹

The federal government’s budget in 2005 provided CAD85 million over five years to support implementation of the IAS Strategy. The funding was to be divided between:⁸²

⁷⁴ Craik et al., id., p. 73.

⁷⁵ CBD, n. 2 above.

⁷⁶ 7 November 2003. See UN website at <<http://www.un.org/depts/los>> (retrieved 4 December 2008).

⁷⁷ Fisheries and Oceans Canada, n. 70 above.

⁷⁸ Environment Canada, “Invasive Alien Species Strategy for Canada,” available: <<http://www.ec.gc.ca/eee-ias/Default.asp?lang=En&n=98DB3ACF-1&>> (retrieved 4 December 2008).

⁷⁹ Canadian Intergovernmental Conference Secretariat, “Backgrounder: Invasive Alien Species,” available: <http://www.scics.gc.ca/cinfo05/830859006_e.html> (retrieved 4 December 2008).

⁸⁰ Environment Canada, “Canada’s Response to the Recommendations in the Twelfth Biennial Report on Great Lakes Water Quality of the International Joint Commission,” available: <http://www.on.ec.gc.ca/greatlakes/Links/Great_Lakes_Water_Quality_A...ment/Canadian_Response_to_12th_Biennial_Report-WSF09D81D4-1_En.htm> (retrieved 4 December 2008) [hereafter Canada’s Response to 12th IJC].

⁸¹ Security and Prosperity Partnership of North America, “Prosperity Agenda,” available: <http://www.spp.gov/prosperity_agenda/index.asp?dName=prosperity_agenda> (retrieved 4 December 2008) [hereafter SPP].

⁸² Fisheries and Oceans Canada, *News Release* (1 March 2005), available: <http://www.dfo-mpo.gc.ca/regions/central/media/news-presse/nr-ca-06-05_e.htm> (retrieved 4 December 2008). See also Canada’s Response to 12th IJC, n. 80 above.

- Environment Canada
- Fisheries and Oceans Canada
- Natural Resources Canada
- Canadian Food Inspection Agency

Several other initiatives were also undertaken in connection with this Strategy.⁸³ For example, an inter-departmental “Leadership and Coordination Committee” oversees implementation of the IAS Strategy and addresses IAS issues of a horizontal nature.⁸⁴ The Ministers of Environment, Fisheries and Oceans, Agriculture, and Natural Resources play a leadership role with regard to implementing the IAS Strategy at the federal level.⁸⁵ National IAS working groups were also established to develop national action plans for aquatic species, terrestrial plants and plant pests.

In connection with aquatic invasive species (AIS) and national action plans, Fisheries and Oceans Canada (DFO) is the federal lead agency. It facilitated, through a task group, the development of the Canadian Action Plan to Address the Threat of Aquatic Invasive Species⁸⁶ (Action Plan for AIS). The Action Plan for AIS was approved at the ministers’ joint meeting in October 2005,⁸⁷ along with other action plans for terrestrial species.

The Action Plan for AIS outlines a strategic management framework for addressing AIS and their pathways of introduction. It addresses “unauthorised” (unintentional) introductions of AIS from seven key “pathways” including shipping, recreational and commercial boating, and the live bait and aquarium trades, and, like the Strategy, prioritises prevention. The Action Plan “does not

⁸³ The Invasive Alien Species Partnership Program (IASPP) (pursuant an interdepartmental MOU 2006–2010) is administered by Environment Canada in cooperation with the Canadian Food Inspection Agency and Fisheries and Oceans Canada. It provides funding of up to CAD50,000 per project to provinces, municipalities, educational institutions and non-government organisations, as well as to other groups, who are working in support of the goals of the National Strategy. The IASPP received CAD5 million over five years and to November 2007 had supported 76 projects totalling nearly CAD2.8 million. *Summary of Canada’s response to the risk of invasive alien species* (November 2007), available: <<http://www.cbd.int/doc/submissions/ias/ias-ca-2007-en.pdf>> (retrieved 4 December 2008).

⁸⁴ *Summary of Canada’s response*, id.

⁸⁵ Environment Canada, *An Alien Invasive Species Strategy* (Ottawa: Environment Canada, 2004) [hereinafter IAS Strategy], p. 20. In addition, an IAS web portal is also under development for use by the federal government departments concerned and is expected to be launched in early 2009.

⁸⁶ Fisheries and Oceans Canada, n. 69 above.

⁸⁷ It was previously approved by the Canadian Council of Fisheries and Aquaculture Ministers in 2004.

address international introductions such as aquaculture or fish stocking, as they are covered by the National Code on Introductions and Transfers of Aquatic Organisms.”⁸⁸ Leadership for implementing the Action Plan for AIS is shared between the federal government and the provinces. At the federal level, the lead agencies are DFO and Environment Canada (IAS activities are coordinated by Environment Canada through a secretariat). In the federal budget of 2005, DFO was allocated CAD10 million over five years to assist with the implementation of the aquatic component of the national IAS Strategy.⁸⁹

It is of interest to note that the issue of AIS issue is now addressed by DFO under the rubric “Health of Oceans Initiatives,”⁹⁰ under the auspices of the 2005 Oceans Action Plan and the subsequent 2007 National Water Strategy, which were both adopted pursuant to the *Oceans Act*.⁹¹ In turn these initiatives are intended to

... protect fragile marine environments, counter pollution and strengthen preventive measures by:

- strengthening pollution prevention at source (conservation of natural resources); increasing capacity to lessen the effects of pollution when and where it occurs; increasing protection of ecologically significant marine areas through the establishment of nine new marine protected areas (MPAs);
- investing in science to better understand the oceans; and
- co-operating more closely with domestic and international partners for more integrated oceans management⁹²

DFO is the lead agency under for the overall initiative; however, other departments also have specific roles where they are to take a lead role. Relevant

⁸⁸ IAS Strategy, n. 85 above, p. 2. See also, Action Plan on AIS, n. 69 above. The Code was developed by DFO and each province and territory. It sets out standards for assessing the risk from the introduction and transfer of new aquatic organisms between the various regions and jurisdictions. See Fisheries and Oceans Canada website at <http://www.dfo-mpo.gc.ca/science/aquaculture/code/prelim_e.htm> (retrieved 4 December 2008).

⁸⁹ Although the idea was not to address individual introduced species but instead address vector or pathways and prevent introductions, an additional CAD10 million over five years was specifically allocated for sea lamprey control. This specific programme was established in cooperation with the United States in 1955.

⁹⁰ This is in conjunction with the key enabling legislation for DFO, the *Oceans Act*, 1996, S.C. c. 31. Fisheries and Oceans Canada, “Health of the Oceans Initiatives – A Listing by Lead Department or Agency, available: <<http://www.dfo-mpo.gc.ca/oceans/management-gestion/healthyoceans-santedesoceans/initiatives-eng.htm>> (retrieved 4 December 2008).

⁹¹ *Oceans Act*, id.

⁹² Id.

to the issue of AIS in ships' ballast water, DFO has responsibility for "ecosystem science to provide support and advice on the health of the oceans, while Transport Canada (the national maritime administration) is the lead agency for adoption, implementation and enforcement of the Ballast Water Control Regulations."⁹³

14.4.2. Control of Invasive Species in Ships' Ballast Water

The majority of the efforts mentioned above in connection with invasive species and ocean health are largely responding to the obligations under the CBD. However, it should be noted that well before these efforts, in 1989 and into the 1990s and early 2000 in parallel to the CBD-related activity, Canada had also adopted voluntary guidelines which influenced the adoption, in 1991, of the IMO resolution on ships' ballast water management.⁹⁴ These guidelines were developed under the auspices of the Canadian Coast Guard (an agency later transferred to Transport Canada and then to DFO). Despite this early history of concerns about this issue in Canada, there has been relatively less research activity or resources devoted to the issue until the last few years, at least in comparison with Australia or the United States.

In 1988, Canada presented a study to IMO entitled "The Presence and Implication of Foreign Organisms in Ship Ballast Water Discharged in the Great Lakes."⁹⁵ Canadian concern was triggered by the significant economic impact of the introduction and spread of a non-native mussel species (zebra mussel) in the St. Lawrence Seaway and Great Lakes as well as earlier action taken in connection with the sea lamprey. Parts of this water system are shared with the United States with the result that a cooperative approach was developed to deal effectively with the problem.⁹⁶ In 1988, the Shipping

⁹³ BWM Convention, n. 32 above.

⁹⁴ As noted in section 14.3.3, in 1973 the IMO Member States had adopted a resolution in connection with spread of infectious diseases. The first resolution dealing with invasive species was drafted by Canada and/or Australia and adopted by the IMO in 1991, *Guidelines for Preventing the Introduction of Unwanted Organisms and Pathogens from Ships' Ballast Waters and Sediment Discharges*. See McConnell, *Globallast*, n. 7 above, p. 11, footnotes 34 and 35.

⁹⁵ Government of Canada, "The Presence and Implication of Foreign Organisms in Ship Ballast Water Discharged in the Great Lakes," MEPC 26/4 (4 July 1988).

⁹⁶ As early as 1954 a bilateral *Convention on Great Lakes Fisheries Between the United States and Canada* was adopted. This created the Great Lakes Fisheries Commission, which was set up to control the introduction and eradication of the non-native, highly invasive Atlantic sea lamprey that had spread in the waterways of both countries.

Federation of Canada, an industry association, was among the first to take action to encourage the development of a ballast water exchange regime to prevent the further spread of harmful aquatic organisms to the Great Lakes.⁹⁷ In 1989, the Voluntary Guidelines for the Control of Ballast Water Discharges from Ships Proceeding to the St. Lawrence River and Great Lakes were developed by the Canadian Coast Guard.⁹⁸ These Guidelines require that the ship's master file a Ballast Water Exchange Report on entering the St. Lawrence Seaway. The Guidelines also provided for a designated alternative discharge zone where deep water exchange was not possible for reasons of safety or the voyage route. The main concern was to ensure that the ballast water had high salinity—a fact that made it unlikely that species could survive in the water of the Great Lakes. In all cases, ship and seafarer safety was declared paramount.

The 1989 regionally specific Voluntary Guidelines were rescinded in September 2000 when they were replaced by the Canadian Ballast Water Management Guidelines, as amended to 8 June 2001.⁹⁹ These Guidelines were explicitly intended to implement the IMO Guidelines, with regional annexes setting out specific additional requirements. One of the main changes was that the Guidelines apply to “all vessels entering Canada’s exclusive economic zone from seaward.” The Guidelines were developed by the Canadian Marine

⁹⁷ Shipping Federation of Canada, *Submission of the Shipping Federation of Canada to The Senate of Michigan Natural Resources and Environmental Affairs Committee In respect of Senate Bill No. 955*, Lansing, Michigan, 18 September 2000, available: <<http://www.shipfed.ca>> (retrieved 4 December 2008).

⁹⁸ The federal government was not the only level of government to take action. Transport Canada also, in part, regulates ports; however, as noted earlier, under the Canadian constitution, provincial governments have power over property rights. The Port Authorities of Vancouver, Nanaimo, and Fraser River (using a Harbour Master Standing Order) also issued supplemental requirements in 1998 requiring compliance with the Transport Canada Guidelines and mandatory ballast water management for vessels discharging more than 1,000 metric tonnes or from specified areas. These were included in Annex I of the Guidelines.

⁹⁹ Transport Canada, *Guidelines for the Control of Ballast Water from Ships in Waters Under Canadian Jurisdiction*, as amended to 8 June 2001, TP 13617 E, available: <http://www.tc.gov.ca/marine_safety/directorate/tp/Tp131617> (retrieved 4 December 2008). The amendments mainly related to clarifying the Guidelines’ application from the earlier version, which defined application on the basis of ships governed by the vessel traffic service (VTS) systems on each coast. That may have caused uncertainty in that the regional VTS applies on one coast (ECAREG) to vessels 500 gross tonnage and greater while on another coast, vessels 300 gross tonnes and more (NORDREG). Twenty-four hour notice prior to entry is required, including listing of relevant IMO international certificates. As of 1 October 2001, all ships 500 gross tonnes and above were required to seek clearance 96 hours before entering Canadian waters (consistent with US enhanced security requirements).

Advisory Council (CMAC),¹⁰⁰ a consultative body with a Secretariat in the Coordination and Consultation Directorate of Transport Canada. CMAC is jointly chaired and coordinated by Transport Canada (which deals with shipping) and the Canadian Coast Guard (which by then was relocated to DFO).

In 2001 it was believed that these Guidelines would become regulations in September 2002 as there was already legislative authority to adopt such regulations under the applicable *Canada Shipping Act* (a predecessor to the *Canada Shipping Act, 2001*¹⁰¹), a comprehensive national law that governs most aspects of shipping in Canada. However, regulations were not in fact adopted until 2006, perhaps to allow for consideration of the changes that would be needed to implement the BWM Convention which was under negotiation during that period.

The Guidelines also provided for alternative ballast exchange zones and one was designated, as noted earlier, in 1989 by the Canadian and US Coast Guards, located near the entry to the St. Lawrence Seaway. However, this site eventually became controversial as studies indicated that it may result in risk to fisheries and aquaculture in fisheries in nearby provinces. During the late 1990s and first few years of 2000, in conjunction with the heightened awareness of the problem of invasive species and the move to develop the BWM Convention in IMO, increasing interest and studies of ships' ballast water were undertaken in ports in Canada.¹⁰²

Under the auspices of the CMAC, Transport Canada initiated both national and regional working groups on ballast water. The result of the consultations with industry players was that the original intention to regulate ships that enter the St. Lawrence River and Great Lakes water system, was expanded to apply to all ships in Canada.¹⁰³ DFO and academic researchers at

¹⁰⁰ CMAC has both national and regional consultations, and includes representatives from parties (government, industry, environmental groups) with an interest in navigation, shipping and marine pollution.

¹⁰¹ *Canada Shipping Act, 2001*, available: <<http://www.tc.gc.ca/acts-regulations/GENERAL/c/csa/MENU.HTM>> (retrieved 4 December 2008).

¹⁰² See, for example, M. Balaban, *Vessel Traffic/Vessel Shipping Patterns on the East Coast of Canada 2002*, Transport Canada Marine Safety Technical Report 1-13 (Ottawa: Transport Canada, 2001). Balaban reported the views on studies undertaken for the Atlantic Regional Ballast Water Subcommittee. The studies, *inter alia*, examined the relationship between shipping patterns and testing for the presence of "aquatic non-native species." The report proposed a need to develop region-specific responses to address differing kind of ship and traffic patterns and differing ecosystems within Canada. The designation of a ballast water discharge zone in the region was seen as not based on reliable scientific data and posing a risk to interests in the region. The same concern was echoed in 2005 by the Canadian Science Advisory Secretariat (DFO), see Fisheries and Oceans Canada, n. 72 above, pp. 8 and 9.

¹⁰³ Balaban, *id.*

universities were also consulted, in particular on the recommended use of alternative ballast water exchange zones.

The *Ballast Water Control and Management Regulations*¹⁰⁴ (the “Regulations”) under the *Canada Shipping Act, 2001* came into force on 28 June 2006. The Regulations were developed by Transport Canada and were based on the Guidelines. As noted above, they were also drafted with an eye to potential future ratification of the BWM Convention. Interestingly one of the main concerns cited was prevention of harm to existing fish species in the fisheries. (This in turn was linked to an estimate of potential economic consequence of inaction in connection with fisheries.) Accordingly, their terminology reflects the BWM Convention rather than the Action Plan on AIS terminology. For example, the Regulations arguably deal with much wider range of concerns than AIS in that they are concerned with “harmful aquatic organisms or pathogens”¹⁰⁵ (HAOP). The purpose of the Regulations is to prevent the introduction of HAOP in ships’ ballast waters and sediments. Accordingly, the Regulations require all ships entering Canada (except from US Great Lakes’ water and adjacent French waters) to “manage” their ballast water.¹⁰⁶

The Regulatory Impact Analysis Statement published in the Canada Gazette when these draft Regulation were published for public review and comment¹⁰⁷ states that three alternatives were considered in preparing the Regulations:

1. Maintain the *status quo*
2. Incorporate the BWM Convention
3. Follow the US regulations

Maintenance of the *status quo* was seen as unsatisfactory because of Canada’s obligations under the CBD. There was also some concern that voluntary compliance was insufficient to curb the risks posed by HAOP.¹⁰⁸ Incorporation of the BWM Convention prior to its entry into force was also deemed ineffective “in particular with respect to the fact that foreign administrations would be under no obligation to ensure that their ships meet the

¹⁰⁴ *Ballast Water Control and Management Regulations* [hereafter Regulations], SOR/2006/129.

¹⁰⁵ *Id.*, s. 1.

¹⁰⁶ *Id.*, s. 4(2).

¹⁰⁷ “Regulatory Impact Analysis Statement,” *Canada Gazette*, Vol. 139, No. 24 (11 June 2005), available: <<http://gazetteducanada.gc.ca/partI/2005/20050611/html/regle6-e.html>> (retrieved 4 December 2008).

¹⁰⁸ *Id.*

requirements for certification, inspection and fitting of approved ballast water treatment systems.”¹⁰⁹ The option of duplicating the US rules for ballast water management was rejected because they did not provide for alternative ballast water exchange areas (established in the Regulations) if the primary exchange area could not be used. In the United States, if the exchange cannot be made for safety or other reasons, the ship may discharge ballast water in port but only the amount “operationally necessary.” In Canada, however, it was possible to identify alternative exchange areas, thus foreclosing the need for discharge in ports.¹¹⁰

Under the Regulations, ballast water can be managed by a combination of the following:

- Exchange
- Treatment
- Discharge into a reception facility
- Retention on board ship

The Regulations provide that ships coming into Canada from a transoceanic voyage must exchange ballast water before entering Canada in an area at least 200 nautical miles from shore where the water depth is at least 2,000 metres.¹¹¹ The Regulations provide for alternative exchange areas in each region of the country if the previous exchange is not possible because it would be impractical or compromise the safety of the voyage.¹¹² Alternate Ballast Water Discharge Zones (ABWDZ) have been designated for the Atlantic/East Coast, the Laurentian Channel, and in the north in Hudson’s Bay and the High Arctic.¹¹³ The Regulatory Impact Analysis Statement published in the Canada Gazette¹¹⁴ explains how the ballast water exchange areas were identified:

A preliminary scan conducted in support of the strategic environmental assessment (SEA) suggests that further consideration be given to the selection of areas where exchange is permitted. Thus, for the selection of these zones, Transport Canada sought scientific advice from DFO. In order to provide this advice, DFO used scientific criteria to select zones

¹⁰⁹ “Regulatory Impact Analysis Statement,” n. 107 above.

¹¹⁰ *Id.*

¹¹¹ Contrast with the BWM Convention, which only requires 200 metres in depth (Regulation B-4).

¹¹² Regulations, n. 104 above, s. 4(4)(e).

¹¹³ *Id.*, s. 6(4).

¹¹⁴ “Regulatory Impact Analysis Statement,” n. 107 above.

where the environmental impact caused by ships releasing their ballast would be minimized. The zones were critically reviewed through DFO's peer review process. Transport Canada has implemented the advice provided by DFO in order to fulfill its requirement under the SEA process.¹¹⁵

It should, however, be noted that the DFO peer review process took the view that, given the risk of AIS introduction with ballast water exchanges, the preferred option was on-board or onshore treatment for management. It was pointed out:

Ballast water exchange seeks to minimize ecological risk , not eliminate it. Any ballast water exchange option will carry a risk to the receiving ecosystem.¹¹⁶

The Regulations apply to every ship in waters under Canadian jurisdiction that is designed or constructed to carry ballast water (other than some specifically exempted categories of ships).¹¹⁷ It applies to both Canadian flagged ships and foreign flag ships in Canadian waters and requires that ballast water be managed if taken on board outside waters under Canadian jurisdiction.¹¹⁸ Ships in the coasting trade¹¹⁹ and ships that do not carry ballast water (NOBOB ships) are not required to comply with the Regulations. Both of these are categories that raise concerns about the risk of spreading or introducing species.¹²⁰

The Regulations essentially follow the recommendations under IMO Resolution A.868 (20) practice on record keeping and the requirement for onboard BWMP. Sections 8 and 9 of the Regulations provide for minimum ballast water exchange standards and ballast water treatment standards, respectively. If a ship cannot manage ballast in accordance with the Regulations due to exceptional circumstances, it must notify the Minister of Transport at least 96 hours (or as soon as possible) prior to entry into the territorial sea.¹²¹

¹¹⁵ Id.

¹¹⁶ Fisheries and Oceans Canada, n. 72 above, pp. 4 and 5.

¹¹⁷ Regulations, n. 104 above, ss.2 (1) and 2(2.)

¹¹⁸ Id., s. 4 (2).

¹¹⁹ Ships with only residual amounts of ballast water are expected, *inter alia*, to comply with the Shipping Federation of Canada's *Code of Best Practices for Ballast Water Management* <<http://www.shipfed.ca>> (retrieved 4 December 2008) or to carry out saltwater flushing.

¹²⁰ International Joint Commission, n. 65 above.

¹²¹ Regulations, n. 104 above, s. 13(1) and (2). The Regulations provide criteria for the Minister's determination s. 13(4).

The decision as to measures to take is then up to the minister in consultation with the ship's master.¹²² Marine safety inspectors enforce the regulations during normal periodic inspections.¹²³ The Canadian Marine Communication and Traffic Services Centre receives reports.¹²⁴

According to Canada's November 2007 submission to the CBD on Canada's response to the risk of AIS:

Joint Canadian and American inspections cover about 80% ocean going foreign ships before they enter the Great Lakes. For the 2006 shipping season, 94% of the ships inspected were in compliance with the Regulations. The remaining 6% of ships had to take corrective action, effectively providing 100% compliance of inspected ships. For 2007, non-compliance dropped to 3.5% for ships entering the Great Lakes. While the Great Lakes inspections cover all ships, for 2007, TC also selectively targeted higher risk ships destined for Quebec ports found a higher rate of non-compliance.¹²⁵

In November 2007, Transport Canada announced that over the next five years, CAD4.5 million would be used to enforce the Regulations.¹²⁶ Specifically, the funding was to be used to:

- increase the number of marine inspectors enforcing ballast water regulations
- support the development of technologies to better deal with ballast water issues
- equip marine inspectors with the necessary tools to enforce ballast water regulations¹²⁷

¹²² *Id.*, s. 13(3).

¹²³ "Regulatory Impact Analysis Statement," n. 107 above. See also *Canada Shipping Act*, n. 101 above, s. 222(1) Inspection and Detention.

¹²⁴ Vancouver BWM Programme. As a result of the Regulations coming into force, the Vancouver Port Authority terminated its Ballast Water Management Programme as of 1 January 2007. See Pacific Gateway Portal website at <<http://www.pacificgatewayportal.com/pgpsite/static/vpapages.asp>> (retrieved 4 December 2008).

¹²⁵ *Summary of Canada's response*, n. 83 above.

¹²⁶ Transport Canada, "Canada's New Government Takes Action to Improve the Health of Our Oceans," *News Release* No. H 185/07 (October 2007), available: <<http://www.tc.gc.ca/mediaroom/releases/nat/2007/07-h185e.htm>> (retrieved 4 December 2008). This funding is part of a larger commitment of CAD60 million to the Health of the Oceans Initiative. See also, "Health of the Oceans Initiatives: DFO: Health of the Oceans Initiatives — A Listing by Lead Department or Agency," available: <<http://www.dfo-mpo.gc.ca/oceans/management-gestion/healthyoceans-santedesoceans/initiatives-eng.htm>> (retrieved 4 December 2008).

It should be noted, however, that these Regulations are primarily “border control” regulations that are essentially concerned with the import and introduction of HOAP/AIS into Canada and not with the *export* of species from Canada. The Regulations are jurisdictional and not ecosystem based in the sense that section 2(1) provides an exemption for ships operating exclusively in waters under Canadian jurisdiction or certain adjacent waters, thus allowing for the possibility of HOAP/AIS being spread within Canada by coasting trade ships. In addition, the designation of near costal ABWDZ may generate problems in the future with problems moved along the coast and out of the ports. The more complex and expensive aspects related to carrying out baseline and monitoring port water studies and setting up systems for warning regarding uptake and establishing reception facilities may be the next steps.

14.5. Observations

Elsewhere I have argued for a precautionary approach to regulatory design advocating an approach that is based on explicitly considering the impact of legal and institutional systems adopted to address emerging environmental protection and other issues.¹²⁸ Essentially the view advocated is that “design matters.” Even the best of policies can fail or have unintended consequences if the legal and institutional implementation is not carefully designed. Too often the legal and institutional location components of responding to a problem are assumed as part of the infrastructure and receive little attention or resources. This approach is particularly relevant in connection with issues such as the introduction of harmful or invasive species or organisms and pathogens, where prevention must be the paramount concern since remediation is for the most part impossible and containment is very costly.

This Canadian study and the related EU study¹²⁹ point to some important patterns in the regulatory response, perhaps in common with other jurisdictions. First, the problem was identified and surfaced as an essentially sectoral “shipping” issue in connection with the IMO. However, as suggested in the studies, a response also along the lines of the IMO Resolution A.868 (20) requires a high level of institutional integration. Like Transport Canada, most

¹²⁷ Id.

¹²⁸ McConnell, “Ballast & Biosecurity,” n. 6 above.

¹²⁹ See Chapter 15, “Responsive Ocean Governance: The Problem of Invasive Species and Ships’ Ballast Water: An EU Study” by Lotta Viikari in this book.

maritime administrations are not equipped with scientific staff to carry out risk assessments or baseline studies to determine the location of safe ballast water discharge or uptake zones. This necessarily requires coordination with other parts of the government. As a result of an explicit decision in Canada to adopt an integrated ocean governance/management approach as mandated by the *Oceans Act*, one agency, DFO, an agency with scientific expertise, was given overall responsibility for all “oceans issues.” In addition, other agencies have overlapping responsibilities e.g., for environmental and biodiversity protection. This means that attention must be paid to establishing responsibilities and relationships between these actors.

Another important point in the Canadian story is that Canada had ratified the CBD at an early stage and, importantly, the CBD Secretariat is located in Canada. Not surprisingly, then, in the 1990s, the CBD-related agenda was an important concern for Canada and essentially drove the process for developing responses in general to invasive species. Under that approach, DFO became the agency responsible for AIS from the perspective of their potential impact, particularly in relation to the fisheries. However DFO does not have regulatory authority for the shipping sector. In addition Transport Canada has a long history and strong industry and stakeholder relationships with respect to the issue. The final result, whilst taking a long time to develop means that, at least on paper, there is some coherence to the approach whereby one agency addresses “Ocean Health” and, where appropriate, provides scientific advice on matters such as designating ABWDZ. However, it does not deal with regulation of ships.

In the Canadian context the designation of ABWDZ is a sensitive issue and it will probably be the case in many jurisdictions. In some cases areas designated are seen as too close to aquaculture and posing risks to those areas. On the other hand Canada exports a large quantity of agricultural products and natural resources and is very dependent on ship-borne trade. The question of whether it is acceptable to designate areas in the Arctic or other areas that are possibly considered as fragile ecosystems also poses significant problems.

The areas that still remain difficult to address are related to

- risk assessments
- preventing movement of species within the jurisdiction
- carrying out baseline studies
- establishing uptake warning systems
- establishing reception facilities.

The situation in Canada has benefitted in this respect from that fact that it has a lengthy experience in addressing the issue on a regional basis, as a result of its relationship with the United States in connection with shared waters and specific invasive species. The United States has had a long-standing concern about invasive species and has invested significant resources in scientific research as well as regulatory activity at the federal and state levels.

As discussed in the EU study, the situation in the EU has many of the same dynamics in that often there are competitor ports involved. At the same time, there is a need for a regional cooperation as well as need for scientific studies to establish baselines and warning systems. There are also similar concerns about the transfer of species and pathogens through the coasting trades.

Establishing an import related regulatory system appears reasonably straightforward (aside from dealing with the problem of the location and impact of ABWDZ) but the potential export of species and pathogens is less easy to address. In addition, problems related to ships and issues not regulated by the BWM Convention (even if not in force), e.g., NOBOB and hull fouling, also pose particular concerns. The final conclusion of this Canadian study is that when issues arise that cut across traditional regulatory allocations and require a multipronged legal and institutional approach, then it is essential that explicit attention be paid to regulatory design to ensure that the responses are, in fact, effective.

Chapter 15

Responsive Ocean Governance: The Problem of Invasive Species and Ships' Ballast Water – An EU Study

Lotta Viikari*

15.1. Introduction

Shipping is the dominant mode of transport worldwide, accounting for nearly two-thirds of world trade. Furthermore, maritime traffic is steadily increasing. As much as 85 percent of all maritime traffic takes place in the northern hemisphere (North Atlantic, Northern Europe, North Pacific).¹ Accordingly, problems related to shipping are particularly relevant in the northern hemisphere, including the transfer of unwanted alien organisms in ships' ballast water.² Commodities are often transported in ships on "one-way routes" without suitable cargo for the return trip; hence the need to take on ballast water to help stabilise the vessel.³ Shipping in general is one of the primary vectors for the transfer of marine invasive species nationally and internationally.⁴

Shipping is of utmost importance for Europe: about 90 percent of the European Union's (EU) external trade goes by sea. The United States, Europe, and Japan are the biggest exporters of ballast water by crude oil carriers.⁵ In Europe (like in many other regions), inshore marine areas are among the ecosystems considered to be most vulnerable to invasions. Moreover, dense transport networks tend to increase the amount and frequency of introductions

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¹ O. Endersen, H. L. Behrens, S. Brynstad, A. B. Andersen, and R. Skjong, "Challenges in Global Ballast Water Management," *Marine Pollution Bulletin* 48 (2004): 615–623, p. 616.

² "Preventing Pollution from Ships," European Maritime Safety Agency (July 2008).

³ P. E. Hulme, "Biological Invasions in Europe: drivers, pressures, states, impacts and responses," in R. E. Hester and R. M. Harrison, eds, *Biodiversity Under Threat*, Issues in Environmental Science and Technology No. 25 (Cambridge: The Royal Society of Chemistry, 2007), pp. 56–80, at p. 60.

⁴ E.g., M. Doelle, M. L. McConnell, and D. L. VanderZwaag, "Invasive Seaweeds: global and regional law and policy responses," *Botanica Marina* 50 (2007): 438–450, p. 442.

⁵ "Preventing Pollution from Ships," n. 2 above.

of alien species.⁶ The EU has a significant number of ports used for international trade. In addition, there are numerous “secondary” ports for transporting goods inside the EU region.⁷ As a consequence, about a thousand species (from bacteria to fishes) have been recorded in the ballast water entering European ports.⁸ Of these, alien species of *European* origin still constitute the largest group, due to the importance of trade within Europe (and the Single Market). Intra-European trade has grown considerably, but trade with China, for instance, has also multiplied. The increasing spread of invasive alien species (IAS) is closely linked to the increasing volume of trade. Furthermore, as sources of trade become more diverse, a greater variety of IAS can be expected.⁹ Additionally, as an important exporter, the EU contributes to the spread of IAS to other parts of the world, something for which it should take responsibility.¹⁰

The problem of invasive alien species and ships’ ballast water is in many respects quite similar in Canada and the EU. The biogeographical conditions of the two regions are largely alike. The EU consists of numerous states, but Canada has had to address IAS issues in shared waters with the United States. Accordingly, Canadian responses to the problem can serve as useful examples for the EU to learn from. Furthermore, Europe shares the problem of invasive aquatic organism with Canada, as well as the United States, in the very practical sense that the risk of introductions of alien organisms via ballast water is often particularly high where traffic between these regions is concerned. For instance, evaluation of transport of ballast water to the western coast of Norway has shown that ballast water from the northeast coast of the United States poses a high risk all year round. The risk is equally high in case of ballast water from Vancouver, Canada. This is because the biogeographical compatibility level between these regions is high, as well as the overlap in temperature, salinity and other such conditions. Somewhat surprisingly, perhaps, shipping within Europe can pose much lower risks in this respect. For instance, water transported to the Norwegian coast from Greece (Mediterranean) is estimated to have a high risk level only in spring time; for the rest of the year, the risk level is only “medium.” In a similar manner, the Atlantic coast of Spain is evaluated to have

⁶ Hulme, n. 3 above, p. 62.

⁷ M. David, S. Gollasch, C. Hewitt, and L. Jakomin, “Ballast Water Management for European Seas – Is there a need for a decision support system,” *OCEANS 2007 – Europe* (June 2007): 1–6, p. 2.

⁸ *Id.*; Hulme, n. 3 above, p. 61.

⁹ Hulme, n. 3 above, p. 75.

¹⁰ “Developing an EU Framework for Invasive Alien Species,” Discussion Paper (Final), available: <http://ec.europa.eu/environment/nature/invasivealien/docs/ias_discussion_paper.pdf> (retrieved 23 November 2008), p. 17.

a mere “medium” compatibility level in relation to the western coast of Norway.¹¹

Often foreign organisms are not able to survive in a new environment. When they are, however, the economic, environmental, and social consequences of invasions can be significant. A Background Paper to a recent European Ballast Water Management Workshop organised by the European Maritime Safety Agency EMSA (see more below) described the European status of invasive aquatic species in the following manner:

Numerous alien species have also been introduced into the North Sea, the Baltic Sea, the Mediterranean and the Black Sea. Only in a few cases has it been possible to estimate the cost of the damage caused by non-indigenous species. In the North and Baltic Seas, for example, the shipworm *Teredo navalis* has caused considerable damage by attacking coastal protection structures such as pilings made of domestic wood. A study from 2004 by the Hydrographic Service of the Federal Republic of Germany sought to determine the economic impacts of the introduction of exotic species in fisheries, aquaculture, coastal facilities for shipping and tourism, and other sectors. Its conclusion was that the shipworm, for example, has caused economic damage in the amount of an estimated 50 million Euro since its introduction into the Baltic Sea in 1993. The Chinese mitten crab has caused an estimated 73.5–85 million Euro economic damage in German waters.¹²

This chapter examines the ballast water issue in the European context in particular. It outlines existing and, above all, potential EU responses to the problem of invasive non-indigenous species affecting the marine environment through the introduction of ballast water. It starts with an overview of the problem in the European context. This is followed by a short introduction of ballast water management options. The study then examines EU law from the point of view of the ballast water issue. First, it sketches out the relationship of the EU and its Member States in terms of responsibility for responding to the problem. The relationship of EU legislation and international regulation of ballast water management is also discussed. In addition to existing regulation and expected future developments in ballast water management in the EU, the

¹¹ Endersen et al., n. 1 above, pp. 620–621.

¹² “Control and Management of Ships’ Ballast Water and Sediments: Developing a European Approach,” Background Paper, EMSA Workshop (November 2008), p. 2. For a more detailed assessment of aquatic IAS in Europe, see E. Leppäkoski, S. Gollash, and S. Olenin, eds, *Invasive Aquatic Species of Europe: Distribution, Impacts and Management* (Dordrecht, Boston: Kluwer Academic Publishers, 2003).

study examines the most important sub-regional attempts within Europe to address the problem. The conclusion sums up the present situation and outlines possible future approaches from a European perspective. It is argued that the Canadian responses to the problem of invasive alien species being transported in ships' ballast water could serve as a useful source of inspiration for European decision makers.

15.2. Ballast Water Management

Organisms transported in ships' ballast are clearly a problem. Aquatic IAS have caused a lot of damage worldwide and there hardly is disagreement about the need to control their movements and effects. Far less unanimity exists over how to do this in practice, however. In addition to differences of opinion, a significant restrictive factor is the state of development of suitable technologies for combating the problem.

At the moment, the method most often used for controlling the introduction of non-indigenous species in ships' ballast is the exchange of ballast water mid-ocean. The idea is that coastal aquatic organisms released at high sea are unlikely to survive there, and vice versa. Moreover, organism densities are significantly lower in the high sea areas.¹³ However, such exchange is not always easy to perform. The safety critical significant wave height for open sea exchange is approximately three metres. An average ballast voyage by vessels engaged in international trade is seven days, of which five are spent on the high seas. Depending on the ballast water exchange method used, the exchange may take up to two days when larger ships are concerned.¹⁴ The calculations concerning the possibility of performing ballast water exchange under the criteria of three metre wave height and five days show that of ships which need one day for ballast water exchange, seven percent will not be able to perform open sea exchange in practice (meaning that 93 percent of such vessels can do it). If a ship needs two days for the exchange, the chance of being able to exchange ballast water drops to only 70 percent, leaving 30 percent of these ships not capable of performing exchange. Variations in seasonal traffic, geography and weather conditions further influence the possibilities, often to the detriment of vessels operating in the northern

¹³ David et al., n. 7 above, p. 2.

¹⁴ Most ships (approximately 75 percent) use sequential exchange of ballast water. The so-called continuous flushing method is often a safer option, but it also significantly increases the exchange time and costs. See Endersen et al., n. 1 above, pp. 616–617.

hemisphere. Not surprisingly, the chances to perform ballast water exchange are significantly reduced in winter conditions.¹⁵ Some of the European seas, for instance, are covered by ice for long periods of the year.

As pointed out in the Canadian part of this study (see Chapter 14 of this book), open sea exchange of ballast water is viewed by many as posing unacceptable safety risks, which can even be in contravention of the annexes to the 1974 International Convention for the Safety of Life at Sea¹⁶ and its 1978 Protocol (SOLAS). The 2004 Ballast Water Management Convention (see more below) exempts ships from the duty to comply with its ballast water exchange requirements when the exchange would threaten safety or stability of the ship.¹⁷ In addition to safety concerns, there are other factors which also limit the feasibility of open ocean exchange of ballast water in many areas. In the North and Mediterranean seas, for instance, ships use mostly shallow coastal routes. Also in the North Atlantic, 60 percent of vessels sail within 200 nautical miles from shore. In the Baltic Sea, ships have to operate in very narrow straits and shallow waters (see more below). In fact, a large amount of all ship traffic is regional or coastal trade; in Europe, for instance, some 60–65 percent of the traffic is regional.¹⁸ Furthermore, ballast water exchange is not 100 percent biologically effective, and is thus considered only as an interim measure.

The Ballast Water Management (BWM) Convention of the International Maritime Organization (IMO)¹⁹ will, once in force, provide global performance standards for ballast water and sediments management. The Convention requires phased implementation of its standards to replace ballast water exchange (D-1 Performance Standard) with ballast water treatment (D-2 Performance Standard) as suitable technologies become available. All ships will have to implement a Ballast Water and Sediments Management Plan (Regulation B-1), and have a Ballast Water Record Book (Regulation B-2). The same requirements apply to existing ships, after a phase-in period. However, the standards of the BWM Convention have been described as representing only a “minimum level of improvement”²⁰ and thus necessitating further development. The Convention establishes a review process for assessing whether its standards are achievable and if more progress could be made.

¹⁵ Id., pp. 617–618.

¹⁶ *International Convention for the Safety of Life at Sea*, 1 November 1974, 1184 U.N.T.S. 2.

¹⁷ Annex (Regulations for the Control and Management of Ballast Water and Sediments), Regulation B-4.4.

¹⁸ Endersen et al., n. 1 above, p. 618.

¹⁹ *International Convention on the Control and Management of Ships' Ballast Water and Sediments, 2004*, IMO BWM/CONF/36 16 February 2004 [hereinafter BWM Convention].

²⁰ I. Meliane and C. Hewitt, *Gaps and Priorities in Addressing Marine Invasive Species*, IUCN Information Document (Gland: IUCN, 2005), p. 4.

Additionally, tier-two regional measures can be adopted for the protection of particularly sensitive areas, for instance.²¹ The phasing-in of ballast water treatment in all ships with a type-approved treatment technology is foreseen by the end of 2015 at latest.²²

However, to date, the only viable ballast water management option has been ballast water exchange. Accordingly, the BWM Convention defines where ships are allowed to exchange ballast water during the transitional period, before treatment systems can and must be used. As a general rule, all ships must, whenever possible, conduct ballast water exchange at least 200 nautical miles from the nearest land and in water depth of at least 200 metres, taking into account the Guidelines developed by IMO (Regulation B-4.1). Where these requirements cannot be met, the port state may designate (in consultation with adjacent or other states) special areas where vessels can conduct the ballast water exchange (Regulation B-4.2). This must be done in accordance with the IMO Guidelines.

Unfortunately, in areas such as the Baltic Sea, the general requirements of the BWM Convention for conducting ballast water exchange cannot be met. The Baltic Sea has a mean depth of 55 metres only and all areas deeper than 200 metres are within less than 50 nautical miles to the nearest land.²³ In practice, ballast water exchange is a very limited option for ballast water management within the Baltic Sea.²⁴ Due to the specific conditions in this sea area, regional cooperation for minimising the risk of ballast water mediated introductions of unwanted alien organisms is particularly relevant. Prevention of invasions is of utmost importance because alien species once settled somewhere in the Baltic Sea can often easily spread even through natural

²¹ Regulations, Section C, “Special Requirements in Certain Areas.” Additionally, Article 2.3 provides that states can take “individually or jointly with other Parties, more stringent measures with respect to the prevention, reduction or elimination of the transfer of Harmful Aquatic Organisms and Pathogens through the control and management of ships’ Ballast Water and Sediments, consistent with international law.” Article 13.3 continues: “In order to progress further the objectives of the Convention, Parties with common interests to protect the environment, human health, property and resources in a given geographical area, in particular, those parties bordering enclosed and semi-enclosed seas, shall endeavour, taking into account characteristic regional features, to enhance regional co-operation, including through the conclusion of regional arrangements consistent with this Convention. Parties shall seek to co-operate with the Parties to regional arrangements to develop harmonized procedures.”

²² “Control and Management of Ships’ Ballast Water and Sediments,” n. 12 above, p. 6.

²³ *Ballast Water Scoping Study: North Western Europe*, Det Norske Veritas, Report No. 2005-0638 (Revision No. 02; 21 June 2006), p. 28.

²⁴ Sweden is considering postponing its ratification of the BWM Convention until 2016 (when all vessels are required to treat their ballast water) for the very reason that ballast water exchange is not very feasible in the Baltic Sea. Markus Helavuori, Maritime Inspector, FMA, pers. comm. (21 November 2008).

means. Possibilities for effectively preventing secondary introductions through ballast water within the region are also very limited. Accordingly, *internal* Baltic ship traffic is not of primary interest in this context.²⁵ The North Sea and some regions of the Mediterranean have similar constraints in respect to ballast water exchange.²⁶

Ballast water issues were recently discussed in the IMO Marine Environment Protection Committee (MEPC) 58. The Ballast Water Review Group convened in early October 2008 to evaluate the availability of ballast water treatment systems on the market, and to consider whether it is possible to demand that new vessels built in 2010 are fitted with ballast water treatment equipment in accordance with the BWM Convention (D-2 Standard). Compliance with the requirement has already been postponed as concerns ships to be constructed in 2009. At the moment, however, there are already some type-approved treatment systems available.²⁷ Moreover, it has been estimated that by 2010, there will be several ballast water treatment systems on the market. Hence it should be possible to find suitable ballast water treatment equipment for most ships and shipping routes. The issue will be discussed further in MEPC 59. MEPC 58 also approved the last BWM Guideline (G2), on ballast water sampling (for controlling compliance with the BWM Convention).²⁸ Now that all 14 BWM Guidelines have been approved and an increasing number of ballast water treatment systems will be available, prospects for the BWM Convention to be ratified and, eventually, enter into force look better than ever.²⁹ The IMO is encouraging states to ratify the Convention as soon as possible. A significant step forward was the recent ratification by Liberia, a major seafaring country.³⁰

²⁵ Ballast Water Scoping Study, n. 23 above, pp. 30–31.

²⁶ David et al., n. 7 above, p. 3.

²⁷ For a current assessment of the availability of ballast water treatment technology, see *Ballast Water Treatment Technology – Current Status*, Lloyd’s Register (September 2008), available: <<http://www.lr.org/NR/rdonlyres/04FE9132-031E-4468-A567-F69359B3E86E/85364/BWT021008.pdf>> (retrieved 23 November 2008). The systems approved by MEPC 58 are a South-Korean Electro-Clean system and a Norwegian OceanSaver system. Additionally, initial approval was given to three other ballast water treatment systems (Japanese, Dutch and German) which can be tested in international waters. Markus Helavuori, Maritime Inspector, FMA, pers. comm. (14 October 2008).

²⁸ The Guideline will be supplemented later by additional port state control instructions and an IMO circular letter for further guidance on sampling and analysing of samples. Id.

²⁹ Id. For a more detailed assessment of the present situation, see “Control and Management of Ships’ Ballast Water and Sediments,” n. 12 above, pp. 7–9.

³⁰ Markus Helavuori, Maritime Inspector, FMA, pers. comm. (21 November 2008).

15.3. European Union

The legal system of the European Community (EC) consists of exclusive competence of the Community in some specific areas of operation; competence shared between the Community and Member States in certain other areas; and, finally, areas of operation where EC Member States have, in principle, exclusive jurisdiction. Responsibility and jurisdiction to act in a particular area are determined by the level of competence. The Single Market is based on the principle of free movement of goods within the Community. Accordingly, the EC has exclusive competence in relation to the free movement of goods within Community territory (Treaty establishing the European Community,³¹ Arts. 28–29). Quantitative restrictions imposed by Member States on imports and exports can be justified only in special cases (listed in Article 30). Even in these cases, Member States' restrictions are not allowed to “constitute a means of arbitrary discrimination or a disguised restriction on trade between Member States” (Art. 30).

In practice, IAS-related restrictions imposed by Member States could be treated as “disguised restrictions on trade,” and hence a breach of Community legislation.³² The European Court of Justice (ECJ) has examined thus far only two cases in relation to control of IAS.

The first, in 1994, concerned imports of live freshwater crayfish to Germany (case C-131/93).³³ The Commission sued Germany for initiating a ban on live crayfish imports. The ban was a response to crayfish plague (*Aphanomyces astaci*), which was being spread mainly by the introduction of alien species of crayfish. The German law required an import licence to be obtained for the import of live crayfish into Germany. Even with such a licence, crayfish could be imported only for research and teaching purposes. A conditional exemption was provided to allow the import of crayfish for a limited time. The Commission argued that such restrictions were in violation of the EC Treaty because they established import bans against member states. The ECJ found in favour of the Commission, as it considered that the

³¹ *Treaty establishing the European Community*, 25 March 1957, *Official Journal* C 325 (24 December 2002).

³² C. Miller, M. Kettunen, and C. Shine, *Scope Options for EU Action on Invasive Alien Species*, Final Report for the European Commission, ENV.B.2/SER/2005/0078r, Institute for European Environmental Policy (Brussels, June 2006), pp. 53–54. For a more detailed assessment, see *id.*, pp. 54 et seq.

³³ *Commission of the European Communities v. Federal Republic of Germany*, E.C.R. 1994, p. I-03303.

reduction in risks from the crayfish plague could have been achieved through measures that were less restrictive on intra-Community trade. Alternatives to a ban could have included requirements for health certification for the crayfish, or regulation of the marketing and management of crayfish within Germany.

The second case was the ‘Danish bees case’ (case C-67/97).³⁴ Danish law prohibited the keeping of any non-indigenous species of nectar-gathering bee on the island of Læsø, the only species permitted being the brown bee indigenous to that island. When the Danish government pursued a prosecution against an individual who was breaching this rule, he claimed that the law constituted a quantitative restriction on imports and was therefore contrary to Article 28 of the EC Treaty. The Court found that the law was indeed a restriction, but that it was justified under Article 30 of the Treaty, for the protection of the health and life of animals.³⁵

Some additional guidance could be derived from more general case law of the ECJ concerning trade in goods.³⁶ Nevertheless, it remains quite unclear what could constitute a justifiable IAS-motivated restriction on trade. Some Member States perceive this as a barrier to their taking action in respect of the problem of non-indigenous invasive organisms; a state can understandably be reluctant to establish restrictions that may face legal challenges from the EC.³⁷ Of course, this is a very unfortunate situation—it is a pity if such uncertainty prevents states from combating the IAS problem and protecting its biodiversity. Responsibilities and competence between the Community and its member states should obviously be clarified. Most areas for action in the management of invasive alien species appear to be issues of shared competence between the Community and its Member States, however.³⁸

³⁴ *Criminal proceedings against Ditlev Bluhme*, reference for a preliminary ruling: *Kriminalretten i Frederikshavn – Denmark*, E.C.R. 1998, p. I-08033.

³⁵ “Developing an EU Framework for Invasive Alien Species,” n. 10 above, pp. 8–9.

³⁶ *Id.*, p. 22.

³⁷ Miller et al., n. 32 above, p. 83.

³⁸ For a more detailed treatment, see Miller et al., n. 32 above.

15.3.1. Existing Regulation

Reduction of pollution from shipping is a central part of EU's maritime safety policy. Transport of alien species in ships' ballast water is a long-known problem in this area. Tangible concerns that the issue has raised within the EU are, however, relatively recent.³⁹ EU measures in marine environmental protection have concentrated on reducing ship-generated waste and cargo residues. For instance, the European Parliament and the Council have adopted Directives 2000/59/EC⁴⁰ and 2005/35/EC⁴¹ to complement the International Convention for the Prevention of Pollution from Ships, 1973, as modified by the Protocol of 1978 (MARPOL)⁴² in this respect.

More relevant from the point of view of protecting the marine environment from non-indigenous invasive species is Regulation (EC) 782/2003⁴³ which phases out and prohibits the use on ships of paint with organotin or tributyltin (TBT) components.⁴⁴ This Regulation implements within EU law the 2001 IMO Convention on the Control of Harmful Anti-Fouling Systems on Ships,⁴⁵ which prohibits the use of highly toxic anti-fouling paints. The purpose of the Convention is, of course, to reduce detrimental impacts of environmentally harmful substances. Paradoxically, the control of the environmentally most harmful but effective anti-fouling systems is, however, likely to increase hull-fouling and hence the risk of unwanted transport of alien organisms.

As concerns ships' ballast water as a vector for IAS, EU law does not have much to offer. In fact, the EU has no regulation pertaining directly to

³⁹ See "Preventing Pollution from Ships," n. 2 above.

⁴⁰ Directive 2000/59/EC of the European Parliament and of the Council of 27 November 2000 on port reception facilities for ship-generated waste and cargo residues, *Official Journal* L 332, 28 December 2000.

⁴¹ Directive 2005/35/EC of the European Parliament and of the Council of 7 September 2005 on ship-source pollution and on the introduction of penalties for infringements, *Official Journal* L 255/11, 30 September 2005.

⁴² *International Convention for the Prevention of Pollution from Ships, 1973, as modified by the Protocol of 1978 relating thereto*, 2 November 1973, 1340 *U.N.T.S.* 61.

⁴³ Regulation (EC) No 782/2003 of the European Parliament and of the Council of 14 April 2003 on the prohibition of organotin compounds on ships, *Official Journal* L 115, 9 May 2003.

⁴⁴ It is supplemented by Directive 76/769/EEC (as amended), prohibiting the marketing and use of organostannic compounds within the EU (Council Directive of 27 July 1976 on the approximation of the laws, regulations and administrative provisions of the Member States relating to restrictions on the marketing and use of certain dangerous substances and preparations).

⁴⁵ *International Convention on the Control of Harmful Anti-fouling Systems on Ships*, 1 February 2002, IMO AFS/CONF/26 (2001).

ballast water management. Apparently, enactment of such regulation is not even planned at the moment.⁴⁶ The Commission has “strongly recommended” the ratification of the BWM Convention. On balance, the involvement of the EU in ballast water management has been described as “limited.”⁴⁷ Nevertheless, the BWM Convention has clear links to existing Community maritime policies, notably the Marine Equipment Directive (96/98/EC),⁴⁸ the Directives on port state control (Directive 95/21/EC as amended)⁴⁹ and on port reception facilities for ship-generated waste and cargo residues (Directive 2000/59/EC),⁵⁰ and the Biocides Directive (98/8/EC).⁵¹

For instance, the Marine Equipment Directive sets out Europe-wide requirements on the type approval of safety and pollution prevention equipment. The Directive moves arrangements for type approving such equipment to EU notified bodies who apply a mark of conformity based on accepted international standards. Since April 30, 1999, the testing standards in the amended Annex A of this Directive must be used to obtain an EC type approval certificate. However, as the BWM Convention has yet to come into force, type approval for ballast water management systems by one EU member state under this procedure only apply to the ships flagged to that state. When the BWM Convention comes into force, type approval under this procedure will be EU-wide, and any system type approved by one member state may have to be re-certified or re-tested to apply to all vessels flagged to EU member states.⁵² Also the Directives on port state control and on port reception

⁴⁶ Markus Helavuori, Maritime Inspector, FMA, pers. comm. (21 November 2008).

⁴⁷ “Control and Management of Ships’ Ballast Water and Sediments,” n. 12 above, p. 14.

⁴⁸ Amended by Directive 2002/84/EC of the European Parliament and of the Council of 5 November 2002 amending the Directives on maritime safety and the prevention of pollution from ships, *Official Journal* L 324/53, 29 November 2002.

⁴⁹ Council Directive 95/21/EC of 19 June 1995 concerning the enforcement, in respect of shipping using Community ports and sailing in the waters under the jurisdiction of the Member States, of international standards for ship safety, pollution prevention and shipboard living and working conditions (port State control), *Official Journal* L 157, 7 July 1995.

⁵⁰ Directive 2000/59/EC of the European Parliament and of the Council of 27 November 2000 on port reception facilities for ship-generated waste and cargo residues, *Official Journal* L 332, 28 December 2000.

⁵¹ Directive 98/8/EC of the European Parliament and of the Council of 16 February 1998 concerning the placing of biocidal products on the market, *Official Journal* L 123/1 (24 April 1998).

⁵² “Control and Management of Ships’ Ballast Water and Sediments,” n. 12 above, p. 16.

facilities for ship-generated waste and cargo residues may need to be updated once the BWM enters into force.⁵³

The Commission has (through its Environment Directorate-General) provided its expertise in the discussions at IMO MEPC, particularly in respect of the methodology for identifying and assessing active substances in connection to the Biocides Directive.⁵⁴ This Directive concerns the placing of biocidal products on the market within the EU, requiring treatment technologies that use active substances to undergo evaluation processes. Certain ballast water management systems fall under the requirements of both the Biocides Directive and the IMO BWM Convention's Guidelines. In order to provide a clear procedure and guidance for Member States on this issue, the Council Working Group on Transport developed a particular procedure in September 2006 (in response to systems being submitted to the IMO by EU Member States for approval under the IMO's G9 Guidelines).⁵⁵

This procedure states that prior to submitting an application for the basic approval of ballast water systems based on active substance to IMO, the member state in question would be expected to consult with other member states and the Commission on whether the concerned active substance falls within the scope of the Biocides Directive. If it does not, the application to IMO can proceed. If it does, the member state will be expected to ensure that the substance can be placed on the EU market before making any submission. This coordination is necessary in order to prevent cases where a system receives the IMO approval, yet cannot be placed on the EU market in accordance with the provisions of the Biocides Directive. However, there is still some uncertainty in practice as to when and how this procedure should be applied.⁵⁶

The Biocides Directive is being revised.⁵⁷ Several issues identified for the revision are likely to have an impact on the interaction between the Biocides Directive and the BWM Convention.⁵⁸ Particularly significant appears to be the proposal that the Directive would apply not merely to the placing of biocidal

⁵³ Markus Helavuori, Maritime Inspector, FMA, pers. comm. (21 November 2008).

⁵⁴ "Control and Management of Ships' Ballast Water and Sediments," n. 12 above, p. 14.

⁵⁵ *Id.*, pp. 14–15.

⁵⁶ *Id.*, p. 15.

⁵⁷ The revision is expected to be ready in 2009, and the amended directive should enter into force in 2011 or 2012. At the same time, it will also turn into a regulation. Markus Helavuori, Maritime Inspector, FMA, pers. comm. (21 November 2008).

⁵⁸ "Control and Management of Ships' Ballast Water and Sediments," n. 12 above, p. 15.

products on the market (as it currently does) but also to *any use* of such products within the EU. In practice, this means that all vessels entering the waters of EU Member States would need an approval in accordance with the Directive for any biocides used in their ballast water treatment systems. Understandably, this is a very controversial suggestion. Such a requirement could obviously cause significant problems for vessels of non-EU states, but also for those vessels of EU Member States that have acquired their ballast water treatment systems from outside the EU.⁵⁹

Finally, the problem of invasive alien species in the marine environment has been touched upon in the recent Marine Strategy Directive (2008/56/EC).⁶⁰ The Directive is based on an ecosystem approach, i.e., ecosystem-based regions of European marine waters. It recognises the introduction of exotic aquatic species as a major threat to European biodiversity. The main objective of the Directive is to achieve environmentally healthy marine waters (“good environmental status”) by 2020. The aim is to draw marine strategies for EU marine regions and sub-regions, managed by Member States in an integrated manner. Good environmental status includes that “non-indigenous species introduced by human activities are at levels that do not adversely alter the ecosystems” (Annex I, para. 2). Measures used for achieving good environmental status can thus include control of invasive alien species, or prevention of introductions in the European seas. Further criteria and methodological standards to make this concept operational will be developed later, in consultation with the various European regional seas organisations (see more below).⁶¹

However, IAS issues in general have not had a particularly high profile at the Community level.⁶² “Europe’s practical programmes and coordination on invasive alien species lag behind many other regions of the world.”⁶³ Furthermore, the approach of individual European states, including EU Member

⁵⁹ Markus Helavuori, Maritime Inspector, FMA, pers. comm. (21 November 2008). The participants (including all EU Member States) of a recent EMSA workshop on “Implementing the Ballast Water Management Convention – the EU dimension” (see more below) mostly opposed the proposal. Id.

⁶⁰ Directive 2008/56/EC of the European Parliament and of the Council of 17 June 2008 establishing a framework for community action in the field of marine environmental policy (Marine Strategy Framework Directive), *Official Journal* L 164/19, 25 June 2008.

⁶¹ “Control and Management of Ships’ Ballast Water and Sediments,” n. 12 above, p. 16.

⁶² E.g., Miller et al., n. 32 above, p. 87; P. E. Hulme, R. David, T. Cunha, and T.-B. Larsson, “A Pan-European Inventory of Alien Species: rationale, implementation and implications for managing biological invasions,” in DAISIE, eds, *The Handbook of European Alien Species* (Dordrecht: Springer, 2008), available: <http://ec.europa.eu/environment/nature/invasivealien/docs/pan_european_inventory_ias.pdf> (retrieved 23 November 2008), p. 5.

⁶³ Id., p. 6.

States, to prevention and management of invasive non-indigenous organisms varies considerably.⁶⁴ As concerns ballast water management, formal, national policies are rare.⁶⁵ Apparently, very few EU Member States have at the moment any regulation for the purpose. In this sense, the situation is very different from that in the United States and Canada.⁶⁶ Nevertheless, EU countries are becoming more active in this respect. Finland, for instance, is currently drafting its national invasive alien species strategy, which relates, of course, to the ongoing developments within the EU, the upcoming strategy dealing with IAS, and criteria and methodological standards for non-indigenous species in particular (see more below).⁶⁷

Invasive alien species in general relate to several fields of Community environmental policy. Nevertheless, the issue lacks inclusion in many relevant European policies and documents.⁶⁸ EU's policy framework for combating the problem of non-indigenous species' introductions is based in essence on the commitments under the Convention on Biological Diversity⁶⁹ (CBD) to which the EC, together with all Member States, is a contracting party. Article 8(h) of the CBD obligates convention parties to "prevent the introduction of, control or eradicate those alien species which threaten ecosystems, habitats or species." Accordingly, the EC must ensure that its policies comply with, *inter alia*, Article 8(h) as far as possible. In practice, the Community has been relatively active in developing policy instruments in relation to *biodiversity* strategies.⁷⁰ It has been argued, however, that "European states rate implementation of Article 8h as a significantly lower priority than do non-European nations. This difference between policy awareness and implementation results in insufficient resources being made available to target invasive species."⁷¹ Importantly, the CBD was supplemented in 2002 by fifteen "Guiding Principles for the prevention, introduction and mitigation of impacts of alien species that threaten ecosystems, habitats or species,"⁷² which provide an international framework for the development of IAS strategies. The Principles affirm that prevention is

⁶⁴ For a more detailed treatment of EU Member States in this respect, Miller et al., n. 32 above, pp. 39 et seq.

⁶⁵ *Ballast Water Scoping Study*, n. 23 above, p. 27.

⁶⁶ Markus Helavuori, Maritime Inspector, FMA, pers. comm. (30 September 2008).

⁶⁷ Maria Laamanen, Professional Secretary, HELCOM, pers. comm. (30 September 2008). Finland and several other EU Member States have also initiated the ratification process of the IMO BWM Convention (see more below).

⁶⁸ Miller et al., n. 32 above, p. 68.

⁶⁹ *Convention on Biological Diversity*, 5 June 1992, 1760 *U.N.T.S.* 79.

⁷⁰ "Control and Management of Ships' Ballast Water and Sediments," n. 12 above, p. 15.

⁷¹ Hulme, n. 3 above, p. 75.

⁷² COP 6 Decision VI/23, available: <<http://www.cbd.int/decisions/?id=7197>> (retrieved 23 November 2008).

normally the most desirable measure in combating IAS. If an invasion nevertheless takes place, early detection and rapid eradication are essential. If eradication is not possible, containment and long-term control measures should be implemented.⁷³

In 2003, a European Strategy on Invasive Alien Species⁷⁴ was adopted under the Convention on the Conservation of European Wildlife and Natural Habitats (Bern Convention),⁷⁵ to which most European states are parties. The challenges that European states face in their IAS efforts are often similar. The Strategy promotes coordinated measures and cooperative efforts to minimise adverse impacts of IAS in Europe. It aims to support development of realistic policies, measures and targets, and proposes priority actions. The Strategy covers, *inter alia*, marine environments under the sovereignty or jurisdiction of Bern Convention parties. Additionally, it provides guidance for activities carried out in areas beyond national jurisdictions, e.g., shipping. The European Strategy is “closely aligned with the CBD Guiding Principles,” aiming to promote regional consistency and best practice in their regional implementation.⁷⁶

Moreover, invasive alien species were identified already in the Sixth Environmental Action Programme of the EC (2002) as “a priority for action.”⁷⁷ The Programme requires application of the ecosystem approach “wherever appropriate.” The Commission’s Communication, Halting the Loss of Biodiversity by 2010 – and Beyond, which was adopted in 2006, places substantial reduction of the impact on EU biodiversity of invasive alien organisms as a key Community policy and a priority objective.⁷⁸ It is also noted that the Community needs to “develop a comprehensive strategy to address this

⁷³ Miller et al., n. 32 above, p. 16.

⁷⁴ P. Genovesi, and C. Shine, *European Strategy on Invasive Alien Species*, Council of Europe (Strasbourg, 5 December 2003), available: <http://www.jncc.gov.uk/pdf/BRAG_NNS_Genovesi&Shine-EuropeanStrategyonInvasiveAlienSpecies.pdf> (retrieved 23 November 2008).

⁷⁵ *Convention on the Conservation of European Wildlife and Natural Habitats*, 19 September 1979, 1284 *U.N.T.S.* 209.

⁷⁶ Miller et al., n. 32 above, pp. 17–18.

⁷⁷ Decision No 1600/2002/EC of the European Parliament and of the Council of 22 July 2002 laying down the Sixth Community Environment Action Programme, *Official Journal* L 242, 10 September 2002.

⁷⁸ Commission of the European Communities, *Halting the loss of biodiversity by 2010—and beyond—Sustaining ecosystem services for human well-being*, Communication from the Commission, COM(2006)216 final, p. 9 [hereinafter Commission of the European Communities]. More specific targets to this effect are laid down in the technical annex of the Biodiversity Action Plan, SEC(2006)621, p. 4 (*Halting the loss of biodiversity by 2010—and beyond—Sustaining ecosystem services for human well-being*, Commission staff working document, Annexes to the Communication from the Commission COM(2006)216 final).

issue.”⁷⁹ One specific goal is to establish an early warning system for the exchange of information between European states on the emergence of IAS.⁸⁰ Also the need to ensure adequate (centralised) financing for IAS management is recognised.⁸¹

The European Commission (DG ENV) is currently preparing an EU strategy for IAS in the context of the Biodiversity Action Plan. The idea is that the strategy will follow a three-stage hierarchical approach in line with the CBD Guiding Principles (prevention – early detection and rapid eradication – long-term control and containment).⁸² The Communication entitled *Towards an EU Strategy on Invasive Species* was adopted 3 December 2008.⁸³ The Communication examines the IAS issue in general (terrestrial, fresh water, marine), hence ballast-related marine invasions are viewed only as a part of a more comprehensive problem. The transport of alien organisms in ballast water is not touched upon in detail.⁸⁴ This is logical in the sense that the impulse for the EU to act in the area derives from its commitments under the Convention on Biological Diversity, above all. The Communication describes four possible policy options for the future EU strategy. These are (in order of increasing intensity) Option A: Business as usual; Option B: Maximising the use of existing legal instruments together with voluntary measures; Option B+: Adapted existing legislation; and Option C: Comprehensive, dedicated EU legal instrument.⁸⁵ The Communication will serve as a discussion paper between Member States, the European Parliament, and other stakeholders. The final EU strategy on IAS (with possible proposals for new legal instruments) is expected to be finished in 2010.⁸⁶

Of course, binding legal instruments that may have some relevance to the IAS issue in general exist in EU law. The Strategic Environmental Assessment

⁷⁹ Commission of the European Communities, *id.*, p. 8.

⁸⁰ *Id.*, p. 12.

⁸¹ *Id.*, pp. 13–14.

⁸² “Developing an EU Framework for Invasive Alien Species,” see n. 10 above, pp. 10–11.

⁸³ Commission of the European Communities, *Towards an EU Strategy on Invasive Species*, Communication from the Commission to the Council, the European Parliament, the European Economic and Social Committee and the Committee of the Regions, COM(2008)789 final [hereinafter Commission of the European Communities 2008].

⁸⁴ Nevertheless, the Communication notes that “prevention in relation to hitchhiker organisms brought in on the hulls or in the ballast water of ships would hugely benefit from the ratification and implementation of the Ballast Water Convention”. *Id.*, p. 6.

⁸⁵ *Id.*, pp. 8–9. Pursuant to the Communication, “the choice for one option or combined options will depend on the results of a prior financial impact analysis”. *Id.*, p. 8 footnote. 15. At the moment, it remains unclear how much emphasis will be placed on economical versus ecological aspects in such analysis.

⁸⁶ *Id.*, p. 10.

(SEA) Directive (2001/42/EC)⁸⁷ requires an environmental assessment for all “plans and programmes” for, e.g., transport and water management. Such an assessment should consider significant environmental effects of proposed plans and programmes. For instance, plans and programmes for transport could include development of transport corridors representing potential pathways for invasive non-indigenous species. Environmental impacts of IAS can be considerable, and should thus be taken into account in a SEA process (as well as in project-specific environmental impact assessments). Apparently, the SEA Directive has thus far never been applied to the IAS issue, however.⁸⁸

Another instrument that deserves to be mentioned here is the Environmental Liability Directive (2004/35/EC).⁸⁹ In principle, it could be used to apply the polluter pays principle to those who introduce harmful IAS into an environment. However, the Directive requires, *inter alia*, that there is an identifiable polluter at fault (or at least negligent); a concrete and quantifiable damage; and that a causal link between the polluter and the damage can be established. In the case of IAS introductions, fulfilling all these requirements, and hence bringing successful proceedings can be quite difficult in practice.⁹⁰ Nevertheless, it should, in principle, be the carrier’s responsibility to ensure that it does not contaminate waters anywhere with, *inter alia*, harmful alien organisms – neither through ballast water nor through other vectors.⁹¹

15.3.2. European Maritime Safety Agency

Although the EU has been relatively inactive in ballast water issues, there have been certain promising developments in this respect lately. One central actor in the area is the European Maritime Safety Agency (EMSA). EMSA was established in 2002⁹² “to provide technical and scientific assistance to the

⁸⁷ Directive 2001/42/EC of the European Parliament and of the Council of 27 June 2001 on the assessment of the effects of certain plans and programmes on the environment, *Official Journal* L 197, 21 July 2001.

⁸⁸ Miller et al., n. 32 above, pp. 26 and 55.

⁸⁹ Directive 2004/35/CE of the European Parliament and of the Council of 21 April 2004 on environmental liability with regard to the prevention and remedying of environmental damage, *Official Journal* L 143/56, 30 April 2004.

⁹⁰ Miller et al., n. 32 above, p. 26.

⁹¹ See P. E. Hulme, S. Bacher, M. Kenis, S. Klotz, I. Kühn, D. Minchin, et al., “Grasping at the Routes of Biological Invasions: A framework for integrating pathways into policy,” *Journal of Applied Ecology* 45, no. 2 (2008): 403–414, p. 411. See also Hulme, n. 3 above, p. 74.

⁹² Regulation (EC) No 1406/2002 of the European Parliament and of the Council of 27 June 2002 establishing a European Maritime Safety Agency, *Official Journal* L 208, 5 August 2002.

European Commission and Member States in the proper development and implementation of EU legislation on maritime safety, pollution by ships and security on board ships.”⁹³ Among other things, the Commission has asked EMSA to “monitor the on-going international and regional developments” in respect of the BWM Convention and “to actively collaborate with the Commission to promote a coherent approach for the implementation of the IMO Convention in the various regional seas around Europe.”⁹⁴ In compliance with this mandate, EMSA recently organised a workshop on “Implementing the Ballast Water Management Convention – the EU dimension” (Lisbon, 10–11 November 2008). Apparently, this was the first workshop to discuss ways to solve the ballast water problem in the European context.⁹⁵ It was aimed at, *inter alia*, sharing experiences with respect to ratifying the BWM Convention and identifying challenges related to ballast water management in Europe. The workshop discussed European cooperation in ballast water management, the role of the EU in the area, and measures to be taken in the future.

Currently, EMSA is trying to find out what kind of practical challenges EU Member States are facing in ratification and implementation of the BWM Convention. For instance, there are technical problems that could benefit from EU level cooperation, such as those related to risk assessment methodologies and the relationship between the IMO type approvals and the Biocides Directive. EMSA intends to make concrete proposals to the Commission (DG Environment and DG Energy and Transport) for advancing such cooperation and hence to facilitate the implementation of the BWM Convention within the European Union. Another central question that EMSA is currently working with is how the Marine Strategy Directive could provide EU Member States with a viable legal framework for strengthening measures to combat harmful aquatic invasions.⁹⁶

⁹³ European Marine Safety Agency (EMSA) website at <<http://www.emsa.eu.int/>> (retrieved 23 November 2008).

⁹⁴ “Preventing Pollution from Ships,” n. 2 above.

⁹⁵ In addition to EU Member States, Norway, Iceland, Croatia, Turkey, the European Commission, HELCOM, REMPEC, and the Black Sea Commission (see more below) also participated in the workshop. Markus Helavuori, Maritime Inspector, FMA, pers. comm. (21 November 2008).

⁹⁶ Mirja Ikonen, Project Officer, EMSA, pers. comm. (13 November 2008).

15.4. Activities of European Sub-regional Organizations

Article 13.3 of the BWM Convention provides that

In order to progress further the objectives of the Convention, Parties with common interests to protect the environment, human health, property and resources in a given geographical area, in particular, those parties bordering enclosed and semi-enclosed seas, shall endeavour, taking into account characteristic regional features, to enhance regional co-operation, including through the conclusion of regional arrangements consistent with this Convention. Parties shall seek to co-operate with the Parties to regional arrangements to develop harmonized procedures.

Given the multitude of jurisdictions and the various aquatic ecosystems in Europe, the need for regional and sub-regional cooperation in addressing the IAS issue is obvious. The legal and political specificities in the different European seas are highly diverse.⁹⁷ Regional arrangements can usually better meet local demands and focus on specific pressures on a particular ecosystem. Regional (let alone national) regulation is also normally much easier to make than a global convention.⁹⁸

Although the EU has not yet done much in the area of ballast water management, there are several regional seas organisations within Europe that have been more active in dealing with aquatic invasions. Also the European Commission has supported the development of ballast water management strategies through the European regional seas efforts.⁹⁹ These efforts are usually carried out under regional agreements. They include the OSPAR *Convention for the Protection of the Marine Environment of the North-East Atlantic*¹⁰⁰ and the *Convention on the Protection of the Marine Environment of the Baltic Sea Area*.¹⁰¹ The problem of invasive aquatic species has been addressed in Europe

⁹⁷ *Ballast Water Scoping Study*, n. 23 above, p. 28.

⁹⁸ See Endersen et al., n. 1 above, p. 615.

⁹⁹ "Control and Management of Ships' Ballast Water and Sediments," n. 12 above, p. 16.

¹⁰⁰ *Convention for the Protection of the Marine Environment of the North-East Atlantic* (OSPAR), 22 September 1992, 32 *I.L.M.* 1069 (1993).

¹⁰¹ *Convention on the Protection of the Marine Environment of the Baltic Sea Area*, 9 April 1992, 2099 *U.N.T.S.* 197.

also in the context of the Mediterranean Sea (Barcelona Convention)¹⁰² and the Black Sea (Bucharest Convention).¹⁰³

However, the regional seas agreements operate, of course, within their respective regions only. Given the highly cross-border nature of the ballast water problem, the need for additional coordination in ballast water management at least at the EU level is obvious.¹⁰⁴ The size and biogeographical characteristics of Europe and the free trade arrangements within the area make it particularly essential to promote consistency in approach against the threat of IAS.¹⁰⁵ Furthermore, most EU Member States have coastlines, several even along more than one sea. Along with the continuous enlargement of the EU (and the Single Market), possibilities for new invasions of aquatic as well as other non-native species are likely to increase further.¹⁰⁶

15.4.1. OSPAR

More than 400 non-native species have been found in northwestern Europe. A vast majority of them occur in freshwater and, above all, marine habitats.¹⁰⁷ OSPAR is a mechanism by which fifteen Western European states,¹⁰⁸ together with the EC, cooperate to protect the marine environment of the northeast Atlantic. The 1992 OSPAR Convention consists of the 1972 Oslo Convention against dumping¹⁰⁹ and the 1974 Paris Convention which broadened the scope to cover land-based sources and offshore industry.¹¹⁰ An annex on biodiversity and ecosystems was adopted in 1998 to cover non-polluting human activities

¹⁰² *Convention for the Protection of the Mediterranean Sea Against Pollution*, 16 February 1976, 1102 *U.N.T.S.* 27.

¹⁰³ *Convention on the Protection of the Black Sea Against Pollution*, 21 April 1992, 1764 *U.N.T.S.* 3.

¹⁰⁴ Mirja Ikonen, Project Officer, EMSA, pers. comm. (13 November 2008).

¹⁰⁵ Hulme, n. 3 above, p. 56.

¹⁰⁶ *Id.*, p. 65.

¹⁰⁷ *Ballast Water Scoping Study*, n. 23 above, p. 23.

¹⁰⁸ Belgium, Denmark, Finland, France, Germany, Iceland, Ireland, Luxembourg, The Netherlands, Norway, Portugal, Spain, Sweden, Switzerland, and United Kingdom.

¹⁰⁹ *Convention for the Prevention of Marine Pollution by Dumping from Ships and Aircraft*, 15 February 1972, 932 *U.N.T.S.* 3.

¹¹⁰ *Convention for the Prevention of Marine Pollution from Land Based Sources*, 4 June 1972, 1546 *U.N.T.S.* 119.

that can adversely affect the sea.¹¹¹ Work under the Convention is managed by the OSPAR Commission.

The OSPAR Commission began to develop a ballast water management strategy for northwest Europe in 2003. The outcome was interim guidelines (based on the ballast water exchange requirements of the IMO BWM Convention) for voluntary measures to reduce the risk of marine invasions in the OSPAR area, pending the entry into force of the BWM Convention. In June 2007, OSPAR endorsed the General Guidance on the Voluntary Interim application of the D1 Ballast Water Exchange Standard in the North-East Atlantic. It was found that the Guidelines were prevalent also to ships operating in the Baltic, and hence they were expanded to include the Baltic Sea. Contracting states to HELCOM and OSPAR (a total of 21 countries) adopted the voluntary Guidelines¹¹² in spring 2008.¹¹³ The Guidelines are also supported by the European Commission. In order to reduce the risk of non-indigenous species entering the OSPAR and HELCOM maritime areas through ballast water exchange, vessels entering the waters of northwest Europe are requested to voluntarily apply the BWM Convention's ballast water exchange guidelines, to prepare a ballast water management plan,¹¹⁴ and to keep a record of their procedures related to ballast water management (paras. 4–5). The guidance is addressed specifically to vessels entering these areas from transatlantic routes and routes passing West Africa; the Guidelines do not apply to vessels coming from the Mediterranean (para. 6).

A second phase of this voluntary strategy should include the development of further guidance and appropriate management measures for ships operating within the OSPAR and HELCOM regions.¹¹⁵ The idea is to use a risk assessment based management approach to identify high risk voyages and to provide guidance on appropriate management measures in order to reduce the

¹¹¹ Annex V on the Protection and Conservation of the Ecosystems and Biological Diversity of the Maritime Area, available: <http://www.ospar.org/html_documents/ospar/html/OSPAR_Convention_e_updated_text_2007.pdf#nameddest=annex5> (retrieved 23 November 2008).

¹¹² The new title of the Guidelines is accordingly *General Guidance on the Voluntary Interim Application of the D1 Ballast Water Exchange Standard in the North-East Atlantic and the Baltic Sea*, HELCOM 29/2008 (March 2008), available: <<http://www.helcom.fi/stc/files/Guidelines/2-8%20HELCOM&OSPAR%20Voluntary%20Guidance%20for%20Ballast%20Water%20Exchange.pdf>> (retrieved 23 November 2008).

¹¹³ “Control and Management of Ships’ Ballast Water and Sediments,” n. 12 above, p. 11.

¹¹⁴ Pursuant to Appendix 1 of IMO’s Guidelines for ballast water management and development of ballast water management plans (G4): Standard Format for the Ballast Water Management Plan.

¹¹⁵ *Joint Notice to Shipping from the Contracting Parties of HELCOM and OSPAR on General Guidance on the Voluntary Interim application of the D1 Ballast Water Exchange Standard in the North-East Atlantic and the Baltic Sea*, para. 3.3. [hereinafter Joint Notice].

risk of secondary introductions.¹¹⁶ Furthermore, it has been proposed that the strategy be strengthened by some kind of a certification mechanism or some other systems to make shipping companies more interested in the issue.¹¹⁷ In compliance with the interim nature of the voluntary strategy, the measures put forward by the Guidelines will become mandatory once the BWM Convention comes into force. Eventually, the ballast water exchange requirements will, of course, be phased out, once the BWM Convention's D-2 Performance Standard for the treatment of ballast water is applied.¹¹⁸

15.4.2. HELCOM

HELCOM, or the Helsinki Commission, is the governing body of the Convention on the Protection of the Marine Environment of the Baltic Sea Area (or Helsinki Convention).¹¹⁹ It works to “protect the marine environment of the Baltic Sea from all sources of pollution through intergovernmental co-operation between Denmark, Estonia, the European Community, Finland, Germany, Latvia, Lithuania, Poland, Russia and Sweden.”¹²⁰ The introduction of alien organisms via ships' ballast water and hulls is one of the main negative environmental effects of shipping in the Baltic Sea.

In November 2007, HELCOM adopted the Baltic Sea Action Plan, which is a ministry-level instrument containing, *inter alia*, a management objective (“No introductions of alien species from ships”) and actions for preventing introduction of alien species.¹²¹ The 2007 HELCOM ministerial meeting also adopted a Road Map Towards Harmonised Implementation and Ratification of the 2004 International Convention for Control and Management of Ships' Ballast Water and Sediments within the HELCOM area.¹²² HELCOM countries

¹¹⁶ “Control and Management of Ships' Ballast Water and Sediments,” n. 12 above, p. 12.

¹¹⁷ Markus Helavuori, Maritime Inspector, FMA, pers. comm. (30 September 2008).

¹¹⁸ Joint Notice, n. 115 above, para. 3.2.

¹¹⁹ *Convention on the Protection of the Marine Environment of the Baltic Sea Area*, n. 101 above.

¹²⁰ Helsinki Commission (HELCOM), “About us,” available: <http://www.helcom.fi/helcom/en_GB/aboutus/> (retrieved 23 November 2008) [hereinafter HELCOM].

¹²¹ For more information, see HELCOM, *Baltic Sea Action Plan* (November 2007), available <http://www.helcom.fi/press_office/news_helcom/en_GB/BSAP_full/> (retrieved 23 November 2008).

¹²² HELCOM, *Road Map Towards Harmonised Implementation and Ratification of the 2004 International Convention for Control and Management of Ships' Ballast Water and Sediments within the HELCOM area* (2007), available: <http://www.helcom.fi/BSAP/ActionPlan/otherDocs/en_GB/roadmap/_print/> (retrieved 23 November 2008).

have agreed to ratify the BWM Convention by the year 2013. Measures included in the Road Map will be taken before ratification to combat the urgent threat of invasion of non-native marine species in the Baltic Sea.

The 17 action points of the Roadmap now form part of the Baltic Sea Action Plan. In the Road Map, HELCOM states agreed, *inter alia*,

... to select and agree by the end of 2008 on the HELCOM Target Species, i.e. species that may impair or damage the environment, human health, property or resources in the Baltic Sea region, relevant for risk assessments according to the IMO Guidelines G7 (para. 4);

[t]o conduct by the end of 2008 baseline surveys of prevailing environmental conditions in major ports and to outline the major long-distance high risk voyages in order to gather data necessary to conduct and/or evaluate and consult risk assessments according to the IMO Guidelines G7 (para. 5);

[t]o specify and agree as soon as possible but not later than 2009 on criteria to distinguish between unacceptable high risk scenarios and acceptable low risk scenarios for regional voyages ... (para. 6).

Currently, HELCOM is compiling a list of invasive alien species and collecting environmental and traffic data from major ports for the purpose of risk assessments.¹²³ The states also agreed

... for voyages connecting the Baltic Sea and the North Sea where no areas exist that meet the Ballast Water Exchange criteria according to the BWM Convention, to consider jointly with OSPAR adequate management measures, including possibilities for ballast water exchange (para. 8);¹²⁴

[t]o join the OSPAR initiative to request vessels transiting the Atlantic or entering the North-East Atlantic from routes passing the West African Coast to conduct on a voluntary basis ballast water exchange before arriving at the OSPAR area or passing through the OSPAR area and

¹²³ Markus Helavuori, Maritime Inspector, FMA, pers. comm. (21 November 2008).

¹²⁴ However, “[b]allast water exchange areas, if designated, should only be in use until the D-2 Performance Standard of the BWM Convention becomes obligatory and for vessels/voyages posing an unacceptable high risk” (para. 8).

heading to the Baltic Sea and to notify jointly with OSPAR the IMO of this action (para. 9);

[t]o undertake a similar initiative for vessels leaving the Baltic and transiting through the OSPAR region to other destinations so the ballast water would not be exchanged until the vessel was 200 nm off the coast of North West Europe in waters greater than 200 m deep (para. 10);

[t]o cooperate with OSPAR on any other relevant topics for the benefit of both regions and as necessary for harmonised implementation of the BWM Convention (para. 11).

As mentioned above, HELCOM joined OSPAR in supporting the voluntary Guidelines of the OSPAR Ballast Water Management Strategy. The aim is to strengthen the cooperation between HELCOM and OSPAR further.

Within the HELCOM cooperation, the states involved have not thus far discussed the EU dimension of the ballast issue to any significant extent; their focus has been on the IMO and its BWM Convention. However, most HELCOM states are also EU Member States and must thus take into consideration the treatment of the problem within the EU as well. As mentioned above, Finland, for instance, is presently drafting its national invasive alien species strategy, which closely relates to the current developments within the EU. It should also be mentioned that the Russian Federation, the only HELCOM state outside the EU, recently has been very active in the IAS sector, not only in HELCOM cooperation but in IAS-related scientific research in general.¹²⁵ In 2006, the Russians established a new electronic journal, *Aquatic Invasions*, which is described as “an important part of developing European early warning system on aquatic invasive species.”¹²⁶

¹²⁵ Maria Laamanen, Professional Secretary, HELCOM, pers. comm. (30 September 2008).

¹²⁶ V. Panov, et al., “New electronic journal “*Aquatic Invasions*”: an important part of the developing European early warning system on aquatic invasive species,” Assessing large scale environmental risk for biodiversity with tested methods (ALARM) Integrated Project, available: <http://ec.europa.eu/environment/nature/invasivealien/docs/alarm_deliverable.pdf> (retrieved 23 November 2008).

15.4.3. Regional Marine Pollution Emergency Response Centre for the Mediterranean Sea

Out of 121 species listed as Europe's "worst invasive," as many as 105 have been reported in the Mediterranean Sea.¹²⁷ The total amount of known aquatic alien species in the Mediterranean Sea is over 660.¹²⁸ Hence there is an obvious interest to minimise and control the spread of alien, potentially harmful aquatic organisms in the Mediterranean. Ballast water management is a very important issue, as ballast water is a major vector for marine introductions in the area. However, the Mediterranean is by no means a uniform ecosystem, as climatic conditions throughout the region vary significantly. This affects the pattern of invasions. Additionally, in some parts of the Mediterranean, such as the Adriatic Sea, the waters are so shallow that ballast water exchange is not a feasible option.¹²⁹ Furthermore, the Middle East and North Africa are particularly heavily influenced by imported ballast water because they are oil exporting countries (contributing to some 90 percent of all ballast water volumes introduced to the Mediterranean from outside the region).¹³⁰

The Regional Marine Pollution Emergency Response Centre for the Mediterranean Sea (REMPEC)¹³¹ organised a workshop in September 2008 to initiate the development of a regional strategy addressing the transfer of harmful aquatic organisms and pathogens via ships' ballast water and sediments for the Mediterranean with the help of the GloBallast Partnership.¹³² As a consequence, eighteen Mediterranean coastal states and the European Commission established a regional task force and four focus groups on specific subject matters to develop such a strategy. The task force discussed principles,

¹²⁷ Regional Marine Pollution Emergency Response Centre for the Mediterranean Sea (REMPEC), *The Development of a Mediterranean Strategy on Ships' Ballast Water Management on the Right Track* (17 September 2008), available: <<http://www.rempec.org/newsmore.asp?id=247&lang=en>> (retrieved 23 November 2008) [hereinafter REMPEC].

¹²⁸ David et al., n. 7 above, p. 2.

¹²⁹ See id., p. 3. States along the Adriatic Sea have been particularly active in the ballast water issue. There is also a GloBallast Partnership Project for this area. Croatia is planning to propose at IMO MEPC 59 that the Adriatic Sea be designated as a particularly sensitive sea area (PSSA) under the IMO. One of the Associated Protective Measures for PSSAs would relate to ballast water management in the Adriatic Sea. Markus Helavuori, Maritime Inspector, FMA, pers. comm. (21 November 2008).

¹³⁰ *Ballast Water Scoping Study*, n. 23 above, pp. 33–34.

¹³¹ See REMPEC website at <<http://www.rempec.org>> (retrieved 23 November 2008).

¹³² GEF/UNDP/IMO Project, "Building partnerships to assist developing countries to reduce the transfer of harmful aquatic organisms in ship's ballast water," for further information see <<http://globallast.imo.org/index.asp?page=GBPintro.html&menu=true>> (retrieved 23 November 2008).

key elements and an appropriate format for the future strategy, and agreed that the strategy should also include an action plan containing operational arrangements. Additionally, the task force will promote bringing into effect the BWM Convention in the Mediterranean.¹³³

15.4.4. Black Sea

The Black Sea is the most isolated sea in the world. Nevertheless, it has over 200 alien species.¹³⁴ As with many other seas, also the Black Sea has a special convention for its protection, the 1992 Convention on the Protection of the Black Sea against Pollution (Bucharest Convention, or Black Sea Convention), which entered into force in 1994. Among other issues, the Bucharest Convention has put ballast water on its agenda. The Commission on the Protection of the Black Sea against Pollution (Black Sea Commission) is the intergovernmental body established for the implementation of the Black Sea Convention.¹³⁵ Additionally, there is regional cooperation on ballast water management through a regional task force. The Black Sea states have developed a regional action plan to minimise the transfer of harmful aquatic organisms and pathogens in ships ballast water (2001), as well as a short-term regional action plan (apparently to support implementation of the regional action plan). National initiatives and legislation relating to the IAS issue also exist in Ukraine and Georgia, at least.¹³⁶

If compared to other regional seas in Europe, Black Sea countries started developing ballast water management and policies relatively early on. One reason for them to take such an active stance on IAS is the unfortunate fact that the local fisheries, and thereby the entire ecosystem of the Black Sea, have collapsed due to the introduction of a non-indigenous invasive aquatic species, the American comb jelly. Additionally, Ukraine has been one of the six developing countries participating in the GloBallast Programme.¹³⁷ Interestingly, ballast water exchange is not very effective in the Black Sea either. Although there is a relatively large area in the Black Sea where ballast water exchange can be performed in accordance with the requirements of the

¹³³ REMPEC, n. 127 above.

¹³⁴ Markus Helavuori, Maritime Inspector, FMA, pers. comm. (21 November 2008).

¹³⁵ See Black Sea Commission website at <<http://www.blacksea-commission.org/main.htm>> (retrieved 23 November 2008).

¹³⁶ *Ballast Water Scoping Study*, n. 23 above, p. 38.

¹³⁷ *Id.*, p. 37.

BWM Convention, the local conditions are such that ballast released anywhere in the Black Sea finds its way to the coast very quickly. Consequently, the risk for the spread of species is high, no matter where in the Black Sea they are released.¹³⁸

15.5. Conclusion

The word “alien” in the term “invasive alien species” refers to ecosystem borders, not national ones. The fact that both causes and effects of IAS introductions are largely international seems to call for international management of the problem.¹³⁹ Given the inherent internationality of shipping in particular, regional and national regulation can normally not be as effective as international rules. Accordingly, the role of the IMO is central in combating the problem of invasive aquatic species; in practice, the BWM Convention is the only chance of addressing the ballast water issue in an effective manner. The slow ratification of the Convention derives from several reasons, among them the practical challenges in ballast water exchange and the lack of approved and feasible ballast water treatment technologies. However, such technologies are constantly being developed, and thus compliance with the BWM Convention should soon be viable also in practice (if it is not already).¹⁴⁰

Despite the importance of the IMO BWM Convention, global regulation does not necessarily always reflect the specific circumstances of particular areas in an optimal way. Measures tailored to the unique circumstances of biogeographical regions and ecosystems are often advantageous. Ecological regions could benefit from, *inter alia*, designation of regional ballast water exchange zones, where needed. Given the patterns of invasion for aquatic species, cooperation is needed in the context of the northern hemisphere, for instance. One interesting proposal is that for negotiating a new global treaty on IAS in the form of a framework convention.¹⁴¹ The more or less regional approach that the unique characteristics of the northern sea areas, for instance,

¹³⁸ Markus Helavuori, Maritime Inspector, FMA, pers. comm. (21 November 2008).

¹³⁹ See, e.g., C. Shine, N. Williams, and L. Gündling, *A Guide to Designing Legal and Institutional Frameworks on Alien Invasive Species* (Gland, Cambridge, and Bonn: IUCN, 2000), pp. 31–32.

¹⁴⁰ Markus Helavuori, Maritime Inspector, FMA, pers. comm. (30 September 2008).

¹⁴¹ E.g., W. M. Jastremski, “A Proposed International Framework Convention on Bioinvasive Species,” in L. Susskind, W. Moomaw, and K. Gallagher, eds, *Transboundary Environmental Negotiation: New Approaches to Global Cooperation* (San Francisco: Jossey-Bass Publishers, 2002), pp. 361–375.

call for could be realised by adopting a specific protocol or protocols to the main convention. An IAS network of all states along the northern seas is another idea worth consideration. Such a network should include at least information system(s) for data exchange, consultations, early warning, and emergency measures. An emergency response fund could facilitate prompt action to eradicate new invasions.¹⁴² Then again, a regional approach, particularly an ecosystem approach, can be difficult to implement because jurisdictional boundaries seldom coincide with those of ecological units.¹⁴³

Accordingly, there is need for regulation at different levels: national legislation for IAS transfers within a country, bilateral agreements between source and recipient states, coordinated regional (or sub-regional) approaches, and international regulation. Regulation at all these levels should be consistent and complement each other—at the least it should not be contradictory. Moreover, whatever type of regulation is used, it needs to be able to balance a variety of interests such as trade, shipping, and environmental protection. This can be demanding as the IAS issue is sensitive for many stakeholders. Additionally, the interests and preferences of different states and regions can vary significantly. Ballast water management, particularly through ballast water treatment, tends to be costly, which obviously is likely to generate opposition at many levels.

The design of regulatory regimes is of utmost importance. Equally important is that their implementation is made feasible by the availability of suitable technologies, cooperation mechanisms, and adequate funding. However, ships do not always comply with international environmental standards even if they could (and should). Some operators/crews may be less sincere in their intentions and breach legal obligations in order to save costs or purely for convenience reasons. Therefore all the better, of course, if international regulation could provide incentives making compliance with its norms more attractive than non-compliance. In the context of the ballast issue, one could think about coupling compliance with ballast water treatment obligations (and even non-binding guidelines) with reduced port fees, for instance.¹⁴⁴

All the above mentioned challenges in ballast water management are evident also within the EU. The EU is a large free-trade region. Unfortunately,

¹⁴² See, e.g., Meliane and Hewitt, n. 20 above, p. 6.

¹⁴³ E.g., Shine et al., n. 139 above, pp. 31–32; P. Genovesi and C. Shine, *European Strategy on Invasive Alien Species*, 3rd draft T-PVS (2003), available: <http://www.iucn.org/places/medoffice/invasive_species/docs/european_strategy_ais.pdf> (retrieved 9 January 2008), p. 24.

¹⁴⁴ See, e.g., International Joint Commission, *Great Lakes Water Quality 11th Biennial Report, The Challenge to Restore and Protect the Largest Body of Fresh Water in the World* (Washington, DC and Ottawa: International Joint Commission, 2002), p. 39.

free trade also facilitates the transfer of alien organisms. Combining free trade and the single market ideology with environmental protection can be complicated.¹⁴⁵ Furthermore, Europe covers a variety of biogeographical zones. In a certain EU Member State a particular species may pose no risk whatsoever (and even be native to the country), whereas the consequences that its introduction to another member state entails can be devastating to the local ecosystem.¹⁴⁶ Unfortunately, the geography of Europe is such that species introduced into the territory of one European state can in most cases spread to the neighbouring countries relatively easily.¹⁴⁷ Negligence of one state could thus water down the efforts of others. At the same time, EU countries are exposed to invasions of species in a very heterogeneous manner. Obviously, coastal states on the EU borders have the highest probability of receiving new invasions.¹⁴⁸ This affects the recognition of risks, as well as prioritisations in IAS management.¹⁴⁹ Moreover, many measures that are needed for combating IAS effectively are likely to be “financially demanding.” Leaving these costs on Member States alone could severely hamper compliance with any new obligations (let alone recommendations).¹⁵⁰ Consequently, the development and implementation of unified IAS policies, regulations and systems within Europe can be challenging.

Nevertheless, a common European approach to the problem of invasive alien species being transported in ships’ ballast water is essential. Cooperation should be improved at all levels (EU, regional, national, and local). Fortunately, many (if not most) EU Member States are apparently planning to ratify the IMO BWM Convention in the near future.¹⁵¹ However, there are still significant practical problems involved: those related to risk assessments (in accordance with IMO G7 Guidelines; see more below), port state control sampling and analysing of samples, and ballast water treatment system type approvals, above all. Furthermore, ballast water exchange is problematic in most parts of Europe

¹⁴⁵ Hulme et al., n. 91 above, p. 412. Obligations and proposals of the World Trade Organization can be equally problematic in the management of invasion pathways. Hulme, n. 3 above, pp. 75–76. For a more detailed assessment of the Single Market and the WTO in this respect, see “Developing an EU Framework for Invasive Alien Species,” n. 10 above, p. 22.

¹⁴⁶ Hulme et al., n. 91 above, p. 412.

¹⁴⁷ Hulme et al., n. 62 above, p. 4.

¹⁴⁸ “Developing an EU Framework for Invasive Alien Species,” n. 10 above, p. 24.

¹⁴⁹ Hulme et al., n. 62 above, p. 6.

¹⁵⁰ See “Developing an EU Framework for Invasive Alien Species,” n. 10 above, pp. 23–24.

¹⁵¹ At least Belgium, Croatia, Cyprus, Finland, Greece, The Netherlands, Poland, Portugal, and Turkey have already started or are about to start in 2009 the ratification process for the BWM Convention. France, Norway, and Spain have ratified the Convention. Markus Helavuori, Maritime Inspector, FMA, pers. comm. (21 November 2008).

due to the characteristics of the European seas.¹⁵² Fortunately, these are largely “technical,” not ideological problems. Most of them can be solved with money. For instance, an EU fund could be established for eradication and control of IAS.¹⁵³ Thus one can still be optimistic about the prospects for the development of a common regulatory regime for Europe in the area of ballast water management.

The compatibility and collaboration of any new European regime with other management systems, organisations, institutions and programmes pertaining to ballast water must be guaranteed. Moreover, it needs to be a dynamic and proactive system. Essential for its efficiency is the capability to adapt to improved scientific knowledge, changing circumstances, and advances in technology. Most importantly, the various uncertainties connected to IAS necessitate utmost precaution. This seems to call for risk assessment based management combined with prevention strategies.¹⁵⁴ Risk-based decision support systems require accurate, timely information about potentially invasive species, port characteristics and invasion patterns, for instance. The development of good monitoring mechanisms and databases, as well as systems for using all the information gathered, is essential. Otherwise risk cannot be assessed reliably, which makes prioritisation and hence differentiated treatment levels of ballast water impossible without compromising risk levels.¹⁵⁵ Obviously, the voyage-specific selective approach in ballast water management is more demanding for the port state than a so-called blanket approach where the same measures are categorically required from all ships, without any consideration of their risk potential.¹⁵⁶

Risk assessments can be used for “environmental matching” between the areas of ballast water origin and discharge, and hence for making estimations of the capability of survival of species in a new environment. Additionally, risks related to the invasiveness of a particular species and the potential harm it can cause in the new environment can be assessed.¹⁵⁷ In the European context, it has been suggested that risk assessment could be used, *inter alia*, for developing lists of species for regulating the spread of IAS (white list for low risk species; black list for prohibited or strictly regulated species; grey for species which have not been assessed yet, etc.). Such lists call for flexibility in

¹⁵² Helavuori, id.

¹⁵³ “See Developing an EU Framework for Invasive Alien Species,” n. 10 above, p. 24.

¹⁵⁴ On problems related to the risk assessment approach, see, e.g., M. McConnell, *GloBallast Legislative Review – Final Report*, GloBallast Monograph Series No. 1 (London: IMO, 2002), p. 18.

¹⁵⁵ See, e.g., Endersen et al., n. 1 above, p. 619.

¹⁵⁶ David et al., n. 7 above, p. 4.

¹⁵⁷ Id., p. 3.

administrative procedures in order to be able to accommodate rapid response to emerging threats. On the other hand, they should be able to cater for regional differences, which can be quite difficult given that one Member State's native species can be a highly invasive, harmful alien species in another Member State.¹⁵⁸

At least the adoption of legally binding measures (such as directives and regulations within the EU) would seem to call for strict risk assessment procedures.¹⁵⁹ Thus far risk assessment based ballast water management has been used in many of the regional IAS strategies in Europe. Models employed for undertaking the assessments vary, but most of them are based on the IMO G7 Guidelines for risk assessment¹⁶⁰ or the model developed through the GloBallast Programme.¹⁶¹ The G7 Guidelines are very specific, and a number of risk assessment tools will be used. The application of such risk assessments in practice is still subject to uncertainty, however.¹⁶²

Some kind of a standardised European approach to risk assessment in ballast water management could be helpful.¹⁶³ One of the biggest problems in this respect is lack of information.¹⁶⁴ The development of a standardised European approach to risk assessment would require further research at least about ballast water discharge patterns and presence/absence of non-indigenous species in the European waters.¹⁶⁵ There exists, for instance, a North European and Baltic Network on Invasive Alien Species (NOBANIS), which is a network of common databases on IAS in this particular region.¹⁶⁶ However, this network covers only Northern Europe. The European Strategy on Invasive Alien Species (2002) encouraged the development of a Europe-wide inventory of invasive alien species. As a consequence, the European Commission funded a three-year Strategic Targeted Research project, DAISIE (Delivering Alien Invasive

¹⁵⁸ “Developing an EU Framework for Invasive Alien Species,” n. 10 above, p. 13.

¹⁵⁹ *Id.*, pp. 13–14.

¹⁶⁰ Guidelines for risk assessment under Regulation A-4 (G7) approved by MEPC 56 in July 2007.

¹⁶¹ For more, see “Control and Management of Ships’ Ballast Water and Sediments,” n. 12 above, p. 14.

¹⁶² *Id.*, pp. 6–7.

¹⁶³ *Id.*, p. 6.

¹⁶⁴ For a more detailed treatment, see, e.g., Hulme et al., n. 62 above.

¹⁶⁵ See “Control and Management of Ships’ Ballast Water and Sediments,” n. 12 above, pp. 6–7.

¹⁶⁶ See North European and Baltic Network on Invasive Alien Species (NOBANIS) website at <<http://www.nobanis.org/>> (retrieved 23 November 2008).

Species Inventories in Europe), which was launched in 2005.¹⁶⁷ DAISIE focused on the following areas of information gathering and dissemination: 1) the European Alien Species Expertise Registry; 2) the European Alien Species Database; and 3) the European Invasive Alien Species Information System.¹⁶⁸ It can thus provide useful tools for the further development of European risk assessment mechanisms for IAS. The European Commission is currently examining the feasibility of a Europe-wide Early Warning and Information System based on existing activities such as NOBANIS and DAISIE.¹⁶⁹

Risks that are already known call directly for prevention, which is generally a far more effective and desirable option than reactive measures taken after an invasion has occurred.¹⁷⁰ Prevention is particularly critical for aquatic ecosystems as detecting IAS in water can be very challenging and the organisms can disperse quickly.¹⁷¹ Furthermore, invasions of marine alien species are largely irreversible; eradicating an IAS once it has become established in the marine environment can even be considered unrealistic.¹⁷² Many of the management options used in terrestrial ecosystems are not available or at least harder to apply.¹⁷³ In the northern hemisphere, harsh weather conditions and geographical remoteness can make operations particularly challenging and expensive. Hence minimisation of future species introductions is fundamentally important. On the other hand, given that prevention of all invasions is an impossible goal, more effective rules on liability for IAS introductions and improved insurance mechanisms are needed.¹⁷⁴ Besides, well-designed liability rules can also have a significant preventive effect and work as powerful economic incentives promoting

¹⁶⁷ *DAISIE Handbook of Alien Species in Europe* (2009) has just been published by Springer. Unfortunately, it came out so recently that the author of this chapter was unable to get hold of a copy.

¹⁶⁸ For more information, see Delivering Alien Invasive Species Inventories for Europe (DAISIE) website at <<http://www.europe-aliens.org/>> (retrieved 23 November 2008).

¹⁶⁹ Commission of the European Communities 2008, n. 83 above, pp. 8 and 10.

¹⁷⁰ See, e.g., Genovesi and Shine, n. 143 above, p. 25; J. A. McNeely et al., eds, *Global Strategy on Invasive Alien Species* (Gland, Switzerland and Cambridge: IUCN, 2001), pp. 24–25.

¹⁷¹ Genovesi and Shine, n. 143 above, p. 25; see also Meliane and Hewitt, n. 20 above, p. 1.

¹⁷² L. S. Godwin, L. G. Eldredge, and K. Gaut, *The Assessment of Hull Fouling as a Mechanism for the Introduction and Dispersal of Marine Alien Species in the Main Hawaiian Islands*, Bishop Museum Technical Report No. 28 (Honolulu: Bishop Museum, 2004), p. 6. However, this is not always the case. Sometimes aquatic invasive species do not spread rapidly beyond control (beyond the initial site of introduction). Additionally, eradication can be feasible, at least in the early stages of invasions. S. L. Williams and E. D. Grosholz, “The Invasive Species Challenge in Estuarine and Coastal Environments: Marrying Management and Science,” *Estuaries and Coasts* 31 (2008): 3–20, p. 6.

¹⁷³ Shine et al., n. 139 above, pp. 17–18; Meliane and Hewitt, n. 20 above, p. 1.

¹⁷⁴ See, e.g., McNeely et al., n. 170 above, p. ix; Shine et al., n. 139 above, pp. 28–30.

compliance with environmental regulation.¹⁷⁵

On balance, a strong precautionary approach is absolutely essential for the development and operation of any IAS regime, both in Canada and the European Union. Hopefully, the two can learn from each others' efforts to address the challenge of non-native aquatic species—a large number of which are constantly transported between these very regions. The EU in particular should examine carefully the Canadian regime for ballast water management, given that Canada has been very active in this sector. One area where the Canadian efforts could serve as a source of inspiration for the Europeans is the utilisation of risk assessment methodologies in responding to the IAS issue.

¹⁷⁵ International Joint Commission, n. 144 above, p. 39.

Chapter 16

Maritime Safety and Vessel-Source Pollution Control in the European Union Context

*Malgorzata Anna Nesterowicz**

16.1. Introduction

The analysis of maritime safety and vessel-source pollution control issues is a part of a comparative, European Union-Canadian exercise, whose aim is to increase academic and public understanding of European Union (EU) and Canadian approaches and challenges in governing key human uses of the oceans. The particular aim of this contribution is to compare solutions to similar problems relating to maritime safety and vessel source pollution control in two different settings, highlighting areas of convergence and divergence of interests and practices.

This chapter presents the legislative solutions concerning maritime safety in the EU. In particular, it touches upon accelerated phasing out of single-hulls, establishment of places of refuge, supervision over classification societies, port state control, vessel traffic monitoring, liability issues, as well as protection of sensitive environments and criminalisation of ship-source pollution.

16.2. The Significance of Maritime Trade for the European Union

The 27 EU Member States have over 600 significant ports along their thousands kilometres of coastline. Nearly 90 percent of the trade volume between the EU and the rest of the world is transported by sea. In relation to the trade between the EU Member States (short sea shipping), this number reaches 69 percent and is still growing. Amongst all this, there is an ever-growing number of tankers carrying increasing volumes of oil and hazardous substances through sensitive areas such as the Mediterranean and Baltic seas.¹

* The opinions expressed in this paper are private opinions of the author and do not necessarily represent those of the European Maritime Safety Agency.

¹ See European Maritime Safety Agency (EMSA) website at <<http://www.emsa.europa.eu>> (retrieved 12 December 2008).

It is obvious that such traffic, due to its density and potential consequences to the environment needs to be regulated. On the basis of the subsidiarity principle, one of basic principles of European law, if certain objectives can be achieved better by the Community as a whole than by individual Member States, then the Community can legislate in the area belonging to shared competencies (like maritime transport) and in this way “takes over” the subject. This means that Member States will no longer legislate within it independently and the rules that the EU establishes are supreme. Maritime safety, due to the transboundary character of pollution and maritime transport as such, is deemed to be an area where the Community can achieve the objectives of the protection of the environment and vessel-source pollution control better than the Member States individually. As a result, since the early 1990s, the legislative activity of the Community in this area has been notable.

16.3. Institutional Framework of Decision Making in the EU

There are three main institutions involved in the EU law-making process: the European Commission, European Parliament and the European Council. Each has a different role and objective. The process can be described as a rather general scheme with the European Commission serving as the executive body and “watchdog” of the EU. It has responsibility for bringing action for infringements against the Member States. The Commission also has an exclusive right of initiating legislation (the “proposal”). The European Parliament consists of directly elected Members. The European Council is comprised of representatives from each Member State. They consider, according to a certain legislative path within the so-called co-decision procedure (in relation to maritime transport issues), the proposal and propose their amendments.²

Under the co-decision procedure,³ a new legislative proposal is drafted by the European Commission. The proposal then comes before the European Parliament and the Council of Ministers. The two institutions discuss the proposal independently, and each may amend it freely. In Council, a new proposal is first considered by a working group for that policy area.

² See H. Ringbom, *The EU Maritime Safety Policy and International Law* (Leiden, Boston: Martinus Nijhoff Publishers, 2008), p. 11 et seq.; K. Lenaerts and P. van Nuffel, *Constitutional Law of the European Union* (London: Thomson Sweet & Maxwell, 2006), p. 592 et seq.

³ *Treaty establishing the European Community*, Rome, 25 March 1957 [hereinafter Treaty of Rome], Article 251.

The conclusion of the working group's discussions is known as the *orientation generale*, and usually forms the basis of Council's position at the end of the first reading, which is known as the common position. Meanwhile, Parliament appoints one of its members as *Rapporteur* to steer the proposal through its committee stage. The Rapporteur is responsible for incorporating the committee's amendments into the draft proposal, as well as the recommendations of the Committee of the Regions and the Economic and Social Committee. The finished report is then voted on in full plenary, where further amendments may be introduced.

In order for the proposal to become law, Council and Parliament must approve each other's amendments and agree upon a final text in identical terms. If the two institutions have agreed on identical amendments after the first reading, the proposal becomes law; this happens from time to time, either where there is a general consensus or where there is great time pressure to adopt the legislation. Otherwise, there is a second reading in each institution, where each considers the other's amendments. Parliament must conduct its second reading within three months of Council delivering its common position, or else Council's amendments are deemed to have been accepted, though this time period can be extended by Parliament if it chooses to do so. If the institutions are unable to reach agreement after the second reading, a conciliation committee is set up with an equal number of members from Parliament and Council. The committee attempts to negotiate a compromise text which must then be approved by both institutions. Both Parliament and Council have the power to reject a proposal either at second reading or following conciliation, causing the proposal to fall. The Commission may also withdraw its proposal at any time.

16.4. Development of EU Maritime Policy

The European rules on transport are provided for in Articles 70–80 (previously 74–84) of the Treaty of Rome of 1957. However, they only apply to transport by rail, road and inland waterway.⁴ According to Article 80.2, the European Council was supposed to lay down appropriate provisions for sea and air transport.⁵ Nevertheless, the first legislative measures regarding sea transport

⁴ L. O. Blanco and B. Van Houtte, *Las Normas de Competencia Comunitarias en el Transporte*, (Madrid: Civitas, 1996), p. 27 et seq.

⁵ R. Confavreux, "Les transports maritimes dans le droit de la concurrence communautaire," *Revue de Marché commun et de l'Union européenne* 398 (May 1996): 369–379, p. 370.

were not taken until the 1970s and they mostly concerned issues of external relations of the Community.⁶ The Council delayed the creation of the Common Transport Policy as the EU Member States were unwilling to hand over to the Community the competences usually identified with the sovereignty and political and commercial power of the states. In 1983, the European Parliament brought to the European Court of Justice (ECJ) a case against the Council of the European Communities for failure to act and the ECJ confirmed that the Council failed to create common maritime transport policy.⁷

Following this, on 22 December 1986, Council adopted four regulations that created the basis of such policy:⁸

- Regulation 4055/86 on the principle of freedom to provide services between Member States and between Member States and third countries⁹
- Regulation 4056/86 concerning detailed rules for the application of Articles 81 and 82 of the Treaty to maritime transport¹⁰
- Regulation 4057/86 on unfair pricing practices in maritime transport¹¹
- Regulation 4058/86 on co-ordination action to safeguard free access to cargoes in ocean trades¹²

As Regulation 4055/86 did not deal with maritime cabotage, a separate legal act was adopted in 1992:

- Regulation 3577/92 applying the principle of freedom to provide services to maritime transport within Member States (cabotage)¹³

The EU started to take interest in maritime safety policy only in the 1990s. Until then it seemed sufficient that EU Member States were parties to

⁶ F. Santoro, *La Politica dei trasporti della Comunita' Economica Europea* (Torino: UTET, 1974), p. 383 et seq.; R. Greaves, "EC Maritime Transport Policy: a Retrospective View," in H. J. Bull and H. Stemshaug, eds, *EC Shipping Policy* (Oslo: Juridisk Forlag, 1997), p. 26 et seq.

⁷ Case 13/83, *European Parliament v. Council of the European Communities*, 1985 E.C.R. 1513.

⁸ See M. A. Nesterowicz, "Freedom of services of the EC in maritime transport," *Journal of Maritime Law and Commerce* 34/4 (October 2003): 629–645.

⁹ 22 December 1986, *Official Journal* 1986 L 378/1.

¹⁰ 22 December 1986, *Official Journal* 1986 L 378/4.

¹¹ 22 December 1986, *Official Journal* 1986 L 378/14.

¹² 22 December 1986, *Official Journal* 1986 L 378/21.

¹³ 7 December 1992, *Official Journal* 1992 L 364/7.

the International Maritime Organization (IMO) and were implementing international conventions. However, between 1986 and 1991 the worldwide rate of total losses of ships averaged 230 vessels per year, of which losses of oil tankers constituted a considerable part.¹⁴ Some of these vessels seriously damaged EU marine ecosystems.¹⁵ As a result, still maintaining its commitment to the implementation of international rules, the Council of the EU passed a resolution calling upon the European Commission to start promoting and improving EU action in the area of maritime safety.¹⁶ The Commission drafted its White¹⁷ and Green¹⁸ Papers on Common Maritime Transport Policy, analysing, among other matters, the impact of shipping on the environment. A more substantive document called Common Policy on Safe Seas was presented in 1993¹⁹ as a direct consequence of other oil tanker accidents.²⁰ In the latter document, the Commission prioritised common initiatives to implement the existing international rules and insisted on a stricter enforcement of those rules, especially through more effective control of ships visiting EU ports. The Commission also urged the development of maritime infrastructure, modernisation of traffic control navigation systems, installation of reception facilities in ports, and training and education of crews. In the same document, it emphasised that its role was not to replace IMO in its rule making but to assist it.²¹

During the next several years, the EU Council adopted several directives and regulations on safety that mostly implemented IMO rules:

¹⁴ A. A. Pallis, *The Common EU Maritime Transport Policy* (Aldershot: Ashgate, 2002), p. 103 et seq.; C. de la Rue and Ch. B. Anderson, *Shipping and the Environment: Law and Practice* (London: LLP 1998), p. 825 et seq.

¹⁵ E.g., the *Aragon* and *Khark-V* tankers in 1989.

¹⁶ Council Resolution on the prevention of accidents causing marine pollution, 19 June 1990, *Official Journal* 1990 C 206/1.

¹⁷ Commission of the European Communities, *The Future Development of the Common Transport Policy*, Communication from the Commission, COM(92)494 final (Brussels, 2 December 1992).

¹⁸ Commission of the European Communities, *Green Paper on the Impact of Transport on the Environment*, Communication from the Commission, COM(92)46 final (Brussels, 20 February 1992).

¹⁹ Commission of the European Communities, *A Common Policy on Safe Seas*, Communication from the Commission, COM(93)66 final (24 February 1993).

²⁰ These include the *Aegean Sea* in 1992 and *Braer* in 1993.

²¹ See also a new Communication: Commission of the European Communities, *Strategic Goals and Recommendations for the EU's Maritime Transport Policy until 2018*, Communication from the Commission, COM(2009)8 final (Brussels, 21 January 2009).

- Council Directive 93/75/EEC Concerning Minimum Requirements for Vessels Bound for or Leaving Community Ports and Carrying Dangerous or Polluting Goods²²
- Council Directive 94/57/EC on Common Rules and Standards for Ship Inspection and Survey Organizations and for the Relevant Activities of Maritime Administrations²³
- Council Directive 94/58/EC on the Minimum Level of Training of Seafarers²⁴
- Council Regulation No. 2978/94 on the Implementation of IMO Resolution A.747(18) on the Application of Tonnage Measurement of Ballast Spaces in Segregated Ballast Oil Tankers²⁵
- Council Regulation No. 3051/95 on the Safety Management of Roll-on/Roll-off Passenger Ferries²⁶
- Council Directive 95/21/EC Concerning the Enforcement, in Respect of Shipping Using Community Ports and Sailing in the Waters Under the Jurisdiction of the Member States, of International Standards for Ship Safety, Pollution Prevention and Shipboard Living and Working Conditions (Port State Control)²⁷ by which the voluntary rules on port state control included in the Paris Memorandum were made binding in the EU
- Council Directive 98/18/EC on Safety Rules and Standards for Passenger Ships²⁸
- Council Directive 1999/35/EC on a System of Mandatory Surveys for the Safe Operation of Regular Ro-Ro Ferry and High-speed Passenger Craft Services²⁹
- Directive 2000/59/EC of the European Parliament and of the Council of 27 November 2000 on Port Reception Facilities for Ship-generated Waste and Cargo Residues³⁰

On 12 December 1999, a Maltese tanker, *Erika*, carrying approximately 30,000 tons of heavy fuel oil, broke in two off the coast of Brittany, France. Age, corrosion, insufficient maintenance, and inadequate surveys were all

²² 13 September 1993, *Official Journal* 1993 L 247/19.

²³ 22 November 1994, *Official Journal* 1994 L/20.

²⁴ 22 November 1994, *Official Journal* 1994 L 319/28.

²⁵ 21 November 1994, *Official Journal* 1994 L 319/1.

²⁶ 8 December 1995, *Official Journal* 1995 L 320/14.

²⁷ 19 June 1995, *Official Journal* 1995 L 157/1.

²⁸ 17 March 1998, *Official Journal* 1998 L 144/1.

²⁹ 29 April 1999, *Official Journal* 1999 L 138/1.

³⁰ *Official Journal* 2000 L 332/81.

contributing factors to the structural failure of the ship. In response to the accident, the European Community decided to undertake measures that would help to avoid similar incidents in the future and that would assure adequate compensation to the victims of oil pollution disasters.³¹

A package of legal measures, called the “Erika I package,” was issued by the Commission in March 2000. It consisted of proposals for a directive strengthening port state inspections in the EU, a directive strengthening the monitoring of the activities of classification societies, and a regulation introducing an accelerated timetable for the withdrawal of single-hulled tankers. In consequence, three measures were adopted:

- Directive 2001/106/EC of the European Parliament and of the Council of 19 December 2001 Amending Council Directive 95/21/EC Concerning the Enforcement, in Respect of Shipping Using Community Ports and Sailing in the Waters Under the Jurisdiction of the Member States, of International Standards for Ship Safety, Pollution Prevention and Shipboard Living and Working Conditions (Port State Control)³²
- Directive 2001/105/EC of the European Parliament and of the Council of 19 December 2001 Amending Council Directive 94/57/EC on Common Rules and Standards for Ship Inspection and Survey Organizations and for the Relevant Activities of Maritime Administrations³³
- Regulation (EC) No. 417/2002 of the European Parliament and of the Council of 18 February 2002 on the Accelerated Phasing-in of Double Hull or Equivalent Design Requirements for Single Hull Oil Tankers and Repealing Council Regulation (EC) No. 2798/94³⁴

In December 2000, the Commission issued a second package of proposals, the “Erika II package.”³⁵ These proposals included a regulation creating the

³¹ Commission of the European Communities, *Safety of the Seaborne Oil Trade*, Communication from the Commission, COM(2000)142 final (Brussels, 21 March 2000).

³² *Official Journal* 2002 L 19/17.

³³ *Official Journal* 2002 L 19/9.

³⁴ *Official Journal* 2002 L 64/1.

³⁵ Commission of the European Communities, *Second Set of Community Measures on Maritime Safety Following the Sinking of the Oil Tanker Erika*, Communication from the Commission, COM(2000)802 final (Brussels, 6 December 2000). See also, H. Ringbom, “The Erika Accident and Its Effects on EU Maritime Regulation,” in M. H. Nordquist and J. Norton Moore, eds, *Current Marine Environmental Issues and the International Tribunal for the Law of the Sea* (Leiden: Kluwer, 2001), p. 265 et seq.; M. A. Nesterowicz, “European Union Legal Measures in Response to the Oil Pollution of the Sea,” *Tulane Maritime Law Journal* 29, no. 1 (2004): 29–44.

European Maritime Safety Agency (EMSA), a directive concerning the establishing of a monitoring and information system for improving the surveillance of traffic in European waters, and a regulation aimed at establishing a complementary European fund (amounting to one billion euro) for the indemnity of victims of oil spills. Two measures were adopted:

- Directive 2002/59/EC of the European Parliament and of the Council of 27 June 2002 Establishing a Community Vessel Traffic Monitoring and Information System and Repealing Council Directive 93/75/EEC³⁶
- Regulation (EC) No. 1406/2002 of the European Parliament and of the Council of 27 June 2002 Establishing a European Maritime Safety Agency³⁷

The proposal for the establishment of the EU compensation fund was not adopted³⁸ because a supplementary fund of a similar scope, but at the international level, was created at the forum of the IOPC Funds in response to the EU proposal.³⁹

On 13 November 2002, a Bahamas-registered tanker, *Prestige*, broke in two off the coast of Galicia, Spain, spilling an unknown, but substantial, quantity of its cargo of heavy fuel oil.⁴⁰ In response, in March 2003, the Commission drafted another proposal for a directive on ship-source pollution and on the introduction of penalties for infringements, which was adopted in September 2005 as Directive 2005/35 on ship-source pollution and on the introduction of penalties for infringements.⁴¹

In November 2005, the Commission presented a third package of legislative measures dealing with maritime safety⁴² The package consisted of the following seven proposals:

1. Proposal for a Directive of the European Parliament and of the Council on compliance with flag State requirements⁴³

³⁶ *Official Journal* 2002 L 208/10.

³⁷ *Official Journal* 2002 L 208/1.

³⁸ *Proposal for a Regulation of the European Parliament and of the Council on the Establishment of a Fund for the Compensation of Oil Pollution Damage in European Waters and Related Measures*, COM(2000)802 final, *Official Journal* C120E, 24 April 2001.

³⁹ International Oil Pollution Compensation Funds website at <www.iopcfund.org> (retrieved 1 December 2008).

⁴⁰ A. Goodman, "Crippled Fuel Oil Tanker Sinks," *CNN* (20 November 2002), available: <<http://archives.cnn.com/2002/WORLD/europe/11/19/spain.oil/index.html>> (retrieved 12 November 2008).

⁴¹ 7 September 2005, *Official Journal* 2005 L 255/11.

⁴² M. A. Nesterowicz, "European Union Legal Measures in Response to the Oil Pollution of the Sea," *Greek Maritime Law Journal* (October 2006): 241–252.

2. Proposal for a Directive on common rules and standards for ship inspection and survey organizations and for the relevant activities of maritime administrations⁴⁴
3. Proposal for a Directive of the European Parliament and of the Council on port State control⁴⁵
4. Proposal for a Directive of the European Parliament and of the Council amending Directive 2002/59/EC establishing a Community vessel traffic monitoring and information system⁴⁶
5. Proposal for a Directive of the European Parliament and of the Council establishing the fundamental principles governing the investigation of accidents in the maritime transport sector and amending Directives 1999/35/EC and 2002/59/EC⁴⁷
6. Proposal for a Regulation of the European Parliament and of the Council on the liability of carriers of passengers by sea and inland waterways in the event of accidents⁴⁸
7. Proposal for a Directive of the European Parliament and the Council on the civil liability and financial guarantees of shipowners⁴⁹

The European Parliament held its first votes on the proposals on 29 March and 25 April 2007, and was generally supportive of the Commission's proposals. The Council adopted its common positions for the six files on 6 June 2008. After long and difficult discussions, it adopted political agreements for flag state requirements and civil liability proposals on 9 October 2008. In the meantime, unsure of the outcome of the Transport, Telecommunications and Energy Council of 9 October, the European Parliament held its second reading vote on 24 September 2008 on the other six proposals. Since it became clear that the Council would not be able to accept the Parliament's position, the preparations for conciliation started.

A series of informal trilogues on the six proposals were held during August, November and December 2008. On 8 December, the Conciliation Committee was convened to formalise the remaining differences between the Council and European Parliament. It included eight proposals (as the European Parliament agreed to approve the two Council common positions of 9 October without further amendments). Most of the proposals actually had already

⁴³ COM/2005/0586 final (Brussels, 23 November 2005).

⁴⁴ COM/2005/0587 final (Brussels, 23 November 2005).

⁴⁵ COM/2005/0588 final (Brussels, 23 November 2005).

⁴⁶ COM/2005/0589 final (Brussels, 23 November 2005).

⁴⁷ COM/2005/0590 final (Brussels, 23 November 2005).

⁴⁸ COM/2005/0592 final (Brussels, 23 November 2005).

⁴⁹ COM/2005/0593 final (Brussels, 23 November 2005).

arrived at that stage of Conciliation Committee without any controversial issues as the Parliament and Council (and the Commission) managed to come to a compromise over the two readings and the informal trilogues. One proposal, the Regulation on the liability of passenger carriers, was controversial and the Conciliation Committee had still to tackle some important issues. A common text was, however, finally agreed at the Conciliation Committee for all the proposals.

16.5. Selected Comparative Thematic Issues

16.5.1. Port State Control

In January 1982, the Paris Memorandum of Understanding on Port State Control was adopted to promote ship safety and protect the environment. Its aim was to eliminate the operation of sub-standard ships through a harmonised system of port state control. It was initially signed by fourteen European countries, and subsequently joined by others, as well as non-European countries, *inter alia*, Canada. Those voluntary rules were made binding in the EU in 1995 by Council Directive 95/21/EC Concerning the Enforcement, in Respect of Shipping Using Community Ports and Sailing in the Waters Under the Jurisdiction of the Member States, of International Standards for Ship Safety, Pollution Prevention and Shipboard Living and Working Conditions (Port State Control).⁵⁰ The Directive requires state parties to inspect at least 25 percent of the ships entering their ports in relation to their compliance with binding IMO and International Labour Organization conventions.⁵¹

This Directive has been amended repeatedly, but a notable amendment came within the Erika I package. The amendment, Directive 2001/106,

⁵⁰ The Paris MOU continues to exist, especially because non-EU countries such as Canada are party to it.

⁵¹ For example, the *International Convention on Load Lines*, London, 5 April 1966, in force 21 July 1968, 640 U.N.T.S. 133; *International Convention for the Safety of Life at Sea*, 1 November 1974, 184 U.N.T.S. 278; *International Convention for the Prevention of Pollution from Ships*, 2 November 1973, 1340 U.N.T.S. 184; *International Convention on Standards of Training, Certification and Watchkeeping for Seafarers*, 1 July 1978, 1361 U.N.T.S. 190; *Convention on the International Regulations for Preventing Collisions at Sea*, London, 20 October 1972, 1143 U.N.T.S. 347; *International Convention on Tonnage Measurement of Ships*, London, 23 June 1969, 1110 U.N.T.S. 318; and *Convention Concerning Minimum Standards in Merchant Shipping*, 29 October 1976, 1259 U.N.T.S. 335 (ILO Convention No. 147).

consisted of banning ships older than fifteen years that have been detained more than twice in the course of the preceding two years from EU ports. A “blacklist” of detained and banned ships is now published every six months.⁵² In addition, inspections of older ships were made more detailed, for example tankers must now have one ballast tank inspected regularly. Ships are obliged to communicate certain information before entering ports to facilitate the preparation of inspections.

In 2002, EMSA was entrusted the task of visiting Member States on a regular basis and assessing whether their port state control systems and related procedures fully comply with the EU legislation. EMSA also publishes and updates a list of banned ships. In the near future, EMSA will develop a project for a new information system which will support the considerable renewed new inspection regime for port state control.

In 2005 the Commission proposed, within the third safety package, to recast the Directive and to simplify and amend certain provisions in order to reinforce effectiveness and quality of inspections on ships. The new Port State Control Directive will establish a new inspection system, both in relation to ships in ports and at anchorage, focused on “substandard vessels,” while the burden will be alleviated with regard to quality vessels. The new system will not be based on a 25 percent inspection requirement but in fact 100 percent in relation to some vessels. In particular it will take into account ships’ “risk profiles,” subjecting higher-risk vessels, including all passenger ships and oil and chemical tankers of more than 12 years of age, to more frequent checks. Special attention will be given to vessels that do not call often at Community ports. Ships not in conformity with the required standards can receive a three-month ban on entering EU ports for the first time, a 12-month ban the second time, and a 24-month ban for the third time. Any further detention will result in a permanent ban from EU ports. This last point was a subject for the Conciliation Committee to consider as the European Parliament insisted on its inclusion.

⁵² The first such list was published on 13 November 2003, see 2003 *Official Journal* C 272/16. See also, Commission of the European Communities, “One year after the Prestige disaster, the Commission publishes the first list of ships definitively banned from EU ports,” *Press Release RAPID*, IP/03/1547 (Brussels, 14 November 2003). It is currently maintained by EMSA and accessible through its webpage.

16.5.2. Delegation of Functions to Classification Societies and Their Supervision

To a large extent, EU Member States delegate the statutory tasks of certification (in order to verify compliance of ships with international safety requirements) to classification societies. However, this can only be done in relation to the societies recognised by the EU. To date there are 13 such societies.⁵³

The rules on recognition were adopted in 1995 by the Directive 94/57/EC on Common Rules and Standards for Ship Inspection and Survey Organizations and for the Relevant Activities of Maritime Administrations. Only Member States can request EU recognition of a classification society. The Commission grants recognition on the basis of an assessment. The recognition is valid either for the whole EU or for certain countries. Thereafter, each recognised society is to be reassessed every two years.

The amendment of the rules in the Erika I package, Directive 2001/105, simplified the procedure according to which the Commission can suspend or withdraw recognition from the societies that failed to comply with the criteria laid down in the Directive. Moreover, more stringent criteria were set for the societies (e.g., certain procedures when a ship changes class).

EMSA has been entrusted with carrying out the inspections of classification societies on behalf of the European Commission, which in turn replaced the individual recognition procedures of the Member States. The inspections cover both head offices and selected regional offices, and also include visits to ships for the purpose of checking the performance of the classification society in question. EMSA also carries out special assessments of classification societies for which EU recognition is being requested by one or more (new) Member States.

In 2005, the Commission proposed, within the third safety package, to recast the Directive. The aim of the new legislation is to strengthen the control over recognised organizations and to reform the system of penalties against those which infringe the minimum criteria. The Council proposed to split the Commission's proposal into two acts: a directive and a regulation. The directive will include provisions addressed to Member States concerning their relationship with ship inspections and survey organisations. The regulation will contain all provisions related to recognition at the Community level, i.e., granting and withdrawal of the recognition by the Commission, the obligations and criteria to be fulfilled by the

⁵³ List of organisations recognised on the basis of Council Directive 94/57/EC on common rules and standards for ship inspection and survey organisations and for relevant activities of maritime administrations (Notices from Member States), *Official Journal* 2007 C 135/4. See also: European Maritime Safety Agency website at <<http://www.emsa.europa.eu/end185d007d001d001.html>> (retrieved 15 November 2008).

organisations to be eligible for Community recognition, and sanctions on organisations for failing to fulfil those obligations.

The Conciliation Committee discussed in particular, in relation to the proposed regulation, the issues of quality standards of the recognised organisations. It was agreed that the recognised organisation must develop, implement and maintain an effective internal quality system based on appropriate parts of internationally recognised quality standards and in compliance with EN ISO/IEC 17020:2004 (inspection bodies) and with EN ISO 9001:2000 (quality management systems, requirements), as interpreted and certified by the Quality Assessment and Certification Entity. The Quality Assessment and Certification Entity shall have the necessary governance and competences to act independently of the recognised organisations and shall have the necessary means to carry out its duties effectively and to the highest professional standards.

16.5.3. Phasing-Out of Single-Hull Tankers

A revised Regulation 13G, Annex I of the International Convention for the Prevention of Pollution from Ships (MARPOL), contains provisions relating to the gradual phasing-out of single-hull oil tankers and their replacement by double-hull tankers or tankers of equivalent design.⁵⁴ Oil tankers built since 1996 must have a double hull or be of equivalent design, while all existing single-hull oil tankers are to be phased out by 2026. This timetable was, however, considered too slow by the EU. Regulation (EC) No. 417/2002 of the European Parliament and of the Council of 18 February 2002 on the Accelerated Phasing-in of Double Hull or Equivalent Design Requirements for Single Hull Oil Tankers (...) was adopted within the Erika I package. It introduced an accelerated timetable (compared to that of the IMO) for replacement in EU waters of single-hull tankers by double-hull tankers. Depending on their age and tonnage, the single-hull tankers are divided into three groups. They should be withdrawn by 2005, 2010, and 2015. The Regulation entered into force on 27 March 2002. The international community followed the EU approach, and the same timetable was introduced under MARPOL.

⁵⁴ Those rules were added to MARPOL in 1991 following *Exxon Valdez* accident (but the United States never adhered to them).

After the sinking of the *Prestige*, the Commission decided to propose additional amendments to the regulation on phasing-out of single-hull tankers.⁵⁵ According to those amendments, carriage of heavy fuel oil in single-hull tankers was banned, and the phasing-out timetable was accelerated, depending on tonnage and age, and for single-hull tankers older than 15 years an additional inspection, a condition assessment survey (CAS), was introduced in order to continue serving until the age of 25.⁵⁶ This also was followed by a parallel amendment to MARPOL.⁵⁷

16.5.4. Use of Regulatory Tools to Monitor Vessel Traffic for the Purpose of Marine Safety and Environmental Protection

16.5.4.1. Navigational Measures

The Directive on Community Vessel Traffic Monitoring and Information System, adopted by the Council and European Parliament within the Erika II package, established an information system for all ships in EU waters, even if they do not enter any EU ports (however, enforcement is port based). Reporting requirements imposed on the shipowners (or ship operators or agents) were already provided for in Directive 93/75.⁵⁸ The reporting requirements for vessels carry dangerous or polluting goods have been extended to new cargos and simplified. Notification can now be done through the electronic data exchange system. The Directive also improves the procedure for the transmission and use of data relating to dangerous cargo and creation of various common databases. It introduced an obligation for

⁵⁵ Regulation (EC) No. 1726/2003 of the European Parliament and of the Council of 22 July 2003 Amending Regulation (EC) No. 417/2002 on the Accelerated Phasing-in of Double-Hull or Equivalent Design Requirements for Single-Hull Oil Tankers, *Official Journal* 2003 L 249/1.

⁵⁶ Eventually, IMO also agreed to introduce new double-hull requirements at the worldwide level to close the gap with new EU safety rules (e.g., prohibition of carriage of heavy oil in single-hull tankers, a speeded up programme for the gradual phasing-out of single-hull tankers, and special inspection arrangements for single-hull tankers older than fifteen years to assess their structural state). The final decision was made on 4 December 2003, and the new standards came into force 5 April 2005. See Commission of the European Communities, “Maritime safety: IMO introduces new double-hull requirements at world-wide level to close the gap with new EU safety rules,” *Press Release RAPID*, IP/03/1667 (Brussels, 5 December 2003).

⁵⁷ See J. Angelo, “Erika Aftermath: Developments at IMO on Double Hulls,” in Nordquist and Norton Moore, n. 37 above, p. 309–318.

⁵⁸ Council Directive 93/75/EEC of 13 September 1993 concerning minimum requirements for vessels bound for or leaving Community ports and carrying dangerous or polluting goods, *Official Journal* 1993 L 247/19.

ships to carry automatic identification systems (AIS). EMSA was tasked with the creation and management of SafeSeaNet, an EU information system that receives and stores the notifications sent by ships carrying hazardous cargoes. The system is shared by all EU Member States.

In 2005, the Commission proposed, within the Erika III package, to recast the Directive. The aim of the new Directive on Community Vessel Traffic Monitoring and Information System is to enhance ship safety and environmental protection. It contains provisions for the enhancement of the SafeSeaNet system (e.g., ensuring that the system is operational on a 24-hour-a-day basis). It also proposes that the AIS should be made mandatory for fishing vessels longer than 15 metres.

16.5.4.2. Particularly Sensitive Sea Areas

Particularly sensitive sea areas (PSSAs) are created by the IMO on the initiative of one or more states for the purpose of protecting the coastal zone. The modalities of such zones are based on a series of IMO Guidelines.⁵⁹ There are four PSSAs in the EU: Wadden Sea, Canary Islands, Western European Waters,⁶⁰ and the Baltic Sea.⁶¹ However, there is no special EU policy on PSSAs; these PSSAs were created on the initiative of one or more Member States. The Baltic Sea PSSA includes ship routing measures based on other conventions, and the Western European Waters PSSA introduced a tanker reporting system, WETREP.⁶²

The EU has been trying to create a coherent network of protected areas within its environmental policy on the basis of Birds' Directive⁶³ and the Habitats Directive.⁶⁴ In particular, the Habitats Directive establishes a network

⁵⁹ Res. A.720(17) of 1991, A.885(21) of 1999 and A.927(22) of 2001. The most recent are Res. A982(24), "Guidelines for the Identification and Designation of Particularly Sensitive Sea Areas" of 2005. See: H. Lefebvre-Chalain, "Les 15 ans de Zones Marines Particulièrement Sensibles (PSSA) : un concept en développement," *Annuaire de Droit Maritime et Océanique* (2007): 351–369.

⁶⁰ The Western European Waters PSSA includes the territorial seas and parts of the EEZs or pollution control zones of Belgium, France, Ireland, Portugal, Spain and the United Kingdom.

⁶¹ The Baltic Sea PSSA includes the entire Baltic Sea except "Russian waters."

⁶² There was a suggestion to prohibit a certain class of ships from entering these waters but it was abandoned.

⁶³ Council Directive 79/409/EEC on the conservation of wild birds, 2 April 1979, *Official Journal* 1979 L 221/10.

⁶⁴ Council Directive 92/43/EEC on the conservation of natural habitats and of wild fauna and flora, 21 May 1992, *Official Journal* 1992 L 206/7.

of protected areas called Natura 2000.⁶⁵ These have been mainly land areas, although the Sixth Environmental Action Programme of 2001 and the Commission Communication of 2003⁶⁶ both recommend the extension of Natura 2000 to the marine environment.⁶⁷

16.5.5. Vessel-Source Pollution: The Regime for Pollution Offences

In 2005, the European Parliament and the Council adopted Directive 2005/35/EC on ship-source pollution and on the introduction of penalties for infringements.⁶⁸ The purpose of this Directive is to incorporate international standards for ship-source pollution (especially MARPOL⁶⁹) into Community law and to ensure that persons responsible for discharges are subject to adequate penalties in order to improve maritime safety and to enhance protection of the marine environment from pollution by ships. In particular, Member States are to ensure that ship-source discharges of polluting substances into internal waters, including ports, the territorial sea, straits used for international navigation subject to the regime of transit passage, the EEZ or equivalent zones, and the high seas, are regarded as infringements if committed with “intent, recklessly or by serious negligence.” Such infringements should be subject to effective, proportionate and dissuasive penalties (criminal or administrative).⁷⁰

⁶⁵ See V. Frank, *The European Community and Marine Environmental Protection in the International Law of the Sea* (Leiden, Boston: Martinus Nijhoff Publishers, 2007), p. 380 et seq.

⁶⁶ Commission of the European Communities, *Towards a strategy to protect and conserve the marine environment*, Communication from the Commission, COM(2002)539 (Brussels, 20 October 2002).

⁶⁷ It is, however, not excluded even now that Natura 2000 sites can be designated in maritime areas. The Directive limits its scope to the territory of the Member State. Therefore such areas could be created within the territorial sea or possibly even the EEZ if such an area is established. In case C-6/04, *Commission v. United Kingdom* (E.C.R. 2005, p. I-9017 of 20 October 2005), the ECJ confirmed that the Habitat Directive may be implemented in the EEZ. However, the effective management of such sites would require an amendment of the Directive (i.e., to include marine species in the annexes). The Commission is preparing such an amendment.

⁶⁸ 7 September 2005, *Official Journal* 2005 L 255/11.

⁶⁹ For more about the international rules concerning ship-source pollution, see E. Molenaar, *Coastal State Jurisdiction over Vessel-Source Pollution* (Utrecht: University of Utrecht Publisher, 1998), p. 41 et seq.

⁷⁰ The validity of the Directive has been questioned in Case C-308/06, *International Association of Independent Tanker Owners (Intertanko) and Others v. Secretary of State for Transport*. The prejudicial questions were asked to the ECJ in relation to the compatibility of

The Directive was complemented by Council Framework Decision 2005/667/JHA of 12 July 2005 to strengthen the criminal law framework for the enforcement of the law against ship-source pollution.⁷¹ However, this Directive was later made invalid by the judgment of the European Court of Justice in the case C-440/05, *Commission of the European Communities v. Council of the European Union*.⁷² As a result, a new Proposal has been presented by the Commission,⁷³ which includes in the new directive certain elements that were previously in the Framework Decision regarding criminal offences.

According to the Proposal, Member States are to ensure that ship-source discharges of polluting substances into the areas listed above are regarded as criminal offences if committed with intent, recklessly or with serious negligence. They should be punished by effective, proportionate, and dissuasive criminal penalties (imposed on both physical and legal persons).

The enforcement of the Directive is mostly in ports (in reference to Article 218 of the United Nations Convention on the Law of the Sea – LOS Convention⁷⁴) either within the port of the Member State concerned, if the ship enters such a port, or within the next port of call (in the EU) if the discharge was done by the ship in transit. However, the Directive also provides for the possibility of at-sea enforcement. Article 7.2 states:

Where there is clear, objective evidence that a ship navigating in the [territorial sea or EEZ] committed ... an infringement resulting in a discharge causing major damage or a threat of major damage to the coastline or related interests of the Member State concerned ..., that State shall, subject [Article 220(6) of the LOS Convention⁷⁵] and

the Directive with the LOS Convention and MARPOL and definition of “serious negligence.” The judgment of the Court of 3 June 2008 did not invalidate the Directive.

⁷¹ *Official Journal* 2005 L 255/164

⁷² *Commission of the European Communities v. Council of the European Union*, C-440/05, 23 October 2007.

⁷³ *Proposal for a Directive of the European Parliament and of the Council amending Directive 2005/35/EC on ship-source pollution and on the introduction of penalties for infringements*, COM(2008)0134 final - COD 2008/0055 (Brussels, 11 March 2008).

⁷⁴ Article 218 provides for investigation in the port for the discharges from that vessel which occurred outside the internal waters, the territorial sea, or the EEZ.

⁷⁵ Article 220(6) provides:

Where there is clear objective evidence that a vessel navigating in the exclusive economic zone or the territorial sea of a State has, in the exclusive economic zone, committed a violation referred to in para. 3 [a violation of applicable international rules and standards for the prevention, reduction and control of pollution from vessels or laws and regulations of that State] resulting in a discharge causing major damage or threat of major damage to the coastline or related interests of the coastal State, or to any resources of its territorial sea or exclusive economic zone, that State may ...

provided that the evidence so warrants, submit the matter to its competent authorities with a view to instituting proceedings, including detention of the ship, in accordance with its national law.⁷⁶

16.5.6. Places of Refuge for Ships in Need of Assistance

A Directive on Community Vessel Traffic Monitoring and Information System from the Erika II package also introduced an obligation for EU Member States to draw up emergency plans for hosting ships in places of refuge in case of distress.⁷⁷ Only one article dealt with this issue. Article 20 provides:

Member States, having consulted the parties concerned, shall draw up, taking into account relevant guidelines by IMO, plans to accommodate, in the waters under their jurisdiction, ships in distress. Such plans shall contain the necessary arrangements and procedures taking into account operational and environmental constraints, to ensure that ships in distress may immediately go to a place of refuge subject to authorisation by the competent authority. Where the Member State considers it necessary and feasible, the plans must contain arrangements for the provision of adequate means and facilities for assistance, salvage and pollution response.

Plans for accommodating ships in distress shall be made available upon demand. Member States shall inform the Commission by 5 February 2004 of the measures taken in application of the first paragraph.

EMSA was tasked with verifying how the Member States implemented Article 20. The evaluation followed a number of steps. First, Member States agreed to common principles in order to establish the national plans in accordance with Article 20. These principles were agreed to during an expert meeting in 2003 in Brussels. Second, Member States were required to send the national plans, including the legal transposition and the operational measures

provided that the evidence so warrants, institute proceedings, including detention of the vessel, in accordance with its laws.

⁷⁶ See Ringbom, n. 2 above, p. 401 et seq.; H. Ringbom, "The EU's Exercise of Port and Coastal State Jurisdiction," *Annuaire de Droit Maritime et Océanique* (2007): 209–224; E. Molenaar, n. 69 above, p. 104 et seq.

⁷⁷ For more on the subject of places of refuge, see A. Chircop, ed., *Places of Refuge for Ships* (Leiden, Boston: Martinus Nijhoff Publishers, 2006).

taken, to the European Commission by July 2003. The national plans had to contain certain elements:

- the identification of the authority that handles the initial response
- the identification of the authority that is responsible for directing a vessel to place of refuge
- the planning and availability of an inventory of places of refuge
- the type of cooperation that exists between neighbouring Member States
- the compensation procedures in place to deal with the resulting damage that may occur when the situation arises of vessels in distress requiring a place of refuge

A report was sent to the European Commission in September 2003 following an analysis of these plans. It was determined that additional information was required concerning the operational implementation of the national measures.

The third and final step was visits to the Member States by the Commission, supported by EMSA, in order to evaluate how each Member State applied their plan in practice and to collect any missing information. The conclusions following this step were overwhelmingly positive and indicated that the Member States have legally transposed and implemented the requirements of Article 20. However, some concerns remained:

- how the speed of decision making would be affected due to split responsibilities in certain Member States
- the absence of formalised cooperation procedures between many of the neighbouring coastal states
- gaps in the compensation system

In the third safety package, a more elaborate Article 20 of the Directive on Community Vessel Traffic Monitoring proposed in 2005 by the Commission requires Member States to appoint an independent competent authority with the responsibility for deciding, on the basis of elaborated criteria, whether or not to accept a vessel in distress into a place of refuge. A financial guarantee for eventual liability may be required from the ship, although its absence cannot be decisive in the ultimate decision of the authority.

The main discussion at the Conciliation Committee concerned the nature of the competent authority and the extent of its independence to take decisions. It was finally agreed in Article 20 that the Member States will appoint a “competent authority with powers to take independent decisions,” on the basis of prior evaluation of the situation, whether or not to allow a vessel in distress into a place

of refuge. Moreover, a financial guarantee for eventual liability may be required from the ship, although its absence cannot be decisive in the ultimate decision of the authority.

16.5.7. Liability, Compensation and Response in Cases of Pollution

The majority of the EU Member States are parties to the International Convention on Civil Liability for Oil Pollution Damage (CLC Convention) and the International Oil Pollution Compensation (IOPC) Fund 1992, as well as the Supplementary Fund. A significant number of Member States are party to the International Convention on Civil Liability for Bunker Oil Pollution Damage, 2001 (Bunkers Convention), but only a few are parties to the International Convention on Liability and Compensation for Damage in Connection with the Carriage of Hazardous and Noxious Substances by Sea, 1996, and the Nairobi International Convention on the Removal of Wrecks, 2007. However, the latter two conventions are not yet in force. Nearly half of the Member States are party to the Convention on Limitation of Liability for Maritime Claims, 1976 (LLMC 1976) and/or LLMC 1996, with only a few having not ratified either of these conventions.

In the third safety package of November 2005, the European Commission presented two legislative projects related to the issue of civil liability: the Proposal for a regulation on liability of carriers of passengers by sea and inland waterways in the event of accidents⁷⁸ and the Proposal for a directive on civil liability and financial guarantees of shipowners.⁷⁹ Each of these Proposals is examined in turn.

Proposal for a Regulation on Liability of Carriers of Passengers by Sea and Inland Waterways in the Event of Accidents

The aim of the Regulation, as proposed in 2005, was to incorporate the provisions of the Athens Convention relating to the Carriage of Passengers and

⁷⁸ COM/2005/0592 final (Brussels, 23 November 2005).

⁷⁹ COM/2005/0593 final (Brussels, 23 November 2005). See M. A. Nesterowicz, “The third legislative package for maritime safety – the liability projects,” *Annuaire de Droit Maritime et Océanique* (2007): 281–292, and by the same author, “El desarrollo de la política común de transporte marítimo de la UE al respecto de la seguridad marítima: sistemas de prevención e indemnización,” *Anuario de Derecho Marítimo* 24 (2007): 219–232.

their Luggage by Sea, 2002 (which is not yet in force) regarding the liability of the carrier and a performing carrier in respect of passengers and their luggage into the European law. The Proposal actually extended the scope of application of the Athens liability rules (according to the Convention, the rules that are applicable to international maritime carriage only) to maritime cabotage and to international and domestic carriage by inland waterways. Moreover, the Regulation introduced an obligation that, in the event of the death or personal injury suffered by a passenger, the carrier is to make an advance payment sufficient to cover immediate economic needs of at least 21,000 Euro within 15 days. Finally, the carrier, the performing carrier, and/or the tour operator are to provide passengers, prior to their departure, with information regarding their rights as passengers (i.e., limits of compensation, right of direct action against the insurer or the person providing financial security, and the entitlement to advance payments). The Regulation will come into force when the Athens Convention does or on 31 December 2012, whichever comes first.

The Conciliation Committee mostly debated the scope of the Regulation. It was agreed—and such is a final version of the Regulation—that it is not going to include inland waterways transport, but the Commission is to study the characteristics of this sector and propose separate rules in the future. Second, in relation to the application of the rules to cabotage, different transition periods were agreed upon depending on the class of the concerned ships (as in Directive 98/18). Class A ships will enjoy a transition period until 31 December 2016 and class B ships until 31 December 2018. In respect of the class C and D ships, the Commission will present a new proposal by 30 June 2013.

Proposal for a Directive on Civil Liability and Financial Guarantees of Shipowners

The Proposal of the Commission provided that the EU Member States should all become contracting parties to the International Convention on Limitation of Liability for Maritime Claims, as amended in 1996. It also proposed to limit the application of the rules on limitation of liability in relation to vessels flying a flag of a State not party to the LLMC 1996. That means that an owner of a ship flying the flag of a State not party to the LLMC 1996 would lose the right to limit his liability if it could be proven that “the damage resulted from his personal act or omission, committed with the intent to cause such damage or through gross negligence.”⁸⁰

⁸⁰ In relation to LLMC 1996, the formula “recklessly and with knowledge that such loss would probably occur” was exchanged for “through gross negligence.”

To ensure the effectiveness of the liability rules, the Proposal for the Directive imposed on shipowners an obligation to have insurance or other financial guarantees of civil liability and on the Member States an obligation to ensure that this in fact occurs. This obligation concerns not only every owner of a ship flying a flag of a Member State, but also every owner of a ship flying the flag of a third country “as soon as that ship enters its exclusive economic area or equivalent area.” Moreover, the relevant civil liability insurance has to cover an amount at least equal to double the limits that would be calculated on the basis of the LLMC 1996 in relation to the ship in question. The existence of such financial guarantee should be verified by certificates issued or certified by a competent authority in a Member State.

In the first reading of the European Parliament (March 2007), several amendments were proposed, the most important being a proposal for the creation of the Community office for certificates of financial guarantee and a proposal for the establishment of the Solidarity Fund for compensation. Respectively, the Community office would be responsible for “keeping a full register of certificates issued, monitoring and updating their validity and checking the existence of financial guarantees registered by third countries.” The Solidarity Fund would serve to compensate any damage caused by ships not having a financial guarantee. However, the Council of the European Union, in Luxembourg on 6 June 2008 decided, to suspend the Proposal due to insufficient support. In October 2008, a compromise was reached to bring the Proposal back to the legislative track. The Council common position modified the proposed text, leaving only the insurance obligation: all Member States’ flagged vessels and all vessels entering EU ports will be obliged to present certificates of financial guarantee up to the LLMC 96 limits. Member States will ensure that the presence of the certificate onboard is controlled while the ship is in the port, and they will develop a system of penalties for breach of the obligation to possess a certificate. This is the final text of the Directive.

Pollution Response

The response to a pollution incident is a responsibility of each EU Member State. However, EMSA tops up their capabilities to fight oil pollution by providing special oil pollution response vessels.

In August 2003, the Commission submitted a proposal to the European Parliament and Council to amend Regulation 1406/2002 by conferring new responsibilities on EMSA in relation to maritime security, combating oil pollution, and verification of the education of seafarers in third countries.

Regulation 724/2004 was adopted.⁸¹ In relation to combating oil pollution, EMSA was given a mandate to operate specialised pollution response ships, as well as equipment for collecting oil and other harmful substances from the sea. In order to perform this task, the Agency has signed “standby contracts” with vessels that normally do their usual work, but in an emergency will proceed to the port where they will have pollution response equipment installed and take part in the response action under the supervision of the Member State that called for such action. The vessels are stationed in a way that allows them to cover all areas identified as sensitive and with a high rate of pollution accidents in the past.

16.6. Conclusion

The European Union, within its maritime policy, has been following the international rules. The EU rules consist mostly of IMO rules made binding on the EU level. This has an added value: it allows for EU enforcement. The Commission can verify the implementation of the rules by the Member States and start an infringement procedure at the European Court of Justice if the implementation is not correct.

Sometimes, however, the EU rules may go further than the IMO rules and provide for stricter standards in EU territory. In some cases (e.g., supplementary oil pollution fund and single-hull tankers), when the EU proposed a more far-reaching solution, the international community followed.

An interesting characteristic of the EU “maritime” legislation is that the EU rules are mostly of “port state” nature. In effect, the EU acts as a port state and the rules are enforced in ports. Coastal and flag state enforcement is much less common. The legislative reviews in other chapters support these conclusions.

⁸¹ Regulation (EC) No. 724/2004 of the European Parliament and of the Council of 31 March 2004 Amending Regulation (EC) No. 1406/2002 Establishing a European Maritime Safety Agency, *Official Journal* 2004 L 129/1.

Chapter 17

Shifting Focus: Towards Outcome-Based Policy and Regulation Making for Maritime Safety and Vessel-Source Pollution in Canada

*Aldo Chircop and Eric Machum**

17.1. Introduction

A recent publication concluded that "... Canadian water transportation policy is a history of: laissez faire; protection, financing and subsidization; government operation, ownership and privatization; expanded protection; commercialization; and a market oriented philosophy."¹ Consistent with this larger policy process, subsidiary policy and regulation making for maritime safety and vessel-source pollution in Canada have followed the roller-coaster pattern, punctuated by parallel milestones.

This contribution is a survey and analysis of current Canadian directions for domestic maritime safety and vessel-source pollution regimes. Contemporary Canadian policy and regulation making are guided by outcome-based approaches formulated on the basis of risk assessment.² The chapter seeks to identify and explain the reasons for contemporary Canadian policy and regulatory directions and the philosophy guiding them with reference to the broader international context. In particular, appropriate comparisons are drawn

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¹ J. Monteiro, and G. Robertson, "Milestones in Canadian Transportation Policy – Water and Highway – Part II" (Paper presented to the Canadian Transportation Research Forum, "North American Networks: Gaps and Opportunities," *Proceedings of the 42nd Annual Conference*, Winnipeg, Manitoba, 3–6 June 2007), p. 580.

² At the time of writing the federal Department of Transport (Transport Canada) is planning to review the 1995 National Marine Policy and to update the Marine Safety "Strategic Plan for the period 2008–2015," to be known as "The New Wave." Valerie Devlin, Senior Advisor, Transport Canada, pers. comm. (26 June 2008).

with counterpart practices of the European Union. The foci include the Canadian approach to national maritime transport policy making, the institutional framework of Canada's maritime administration, the process of reform of Canadian shipping regulation for maritime safety and marine pollution purposes culminating in a new shipping act, the strengthening of legislation and creation of penal offences to combat illegal ship discharges, places of refuge for ships in need of assistance, the use of shipping regulatory tools to address marine conservation concerns, supervision of classification societies, and the oil pollution liability and compensation regime. The study concludes with insights into the contemporary maritime policy and regulation in Canada.

17.2. Context

Bordering on three oceans (Atlantic, Arctic, and Pacific) and the Great Lakes, Canada is a major trading nation, but not necessarily a seafaring nation. The bulk of Canadian trade is with the United States, much of which is by way of surface transportation.³ Whereas maritime cargo in 2005 accounted for 39.7 percent of the volume of Canadian international trade, it accounted for only 12.5 percent of the total value of that trade.⁴ In addition, Canada has a very small flag fleet,⁵ having made a deliberate policy choice not to provide incentives for shipping (other than for shipbuilding and cabotage), thus relying on international shipping (generally foreign-flagged) to carry the majority of its

³ In 2007, approximately 59% of the value of trade with the United States was carried by trucks. Transport Canada, *Transportation in Canada: An Overview* (Ottawa: Minister of Public Works and Government Services, 2007), p. 5.

⁴ Excluding trade with the United States, maritime traffic represented 45.2% of the value and 83.2% of the volume of Canadian international trade. See WTO, "Trade Policy Review: Canada," *WTO Press Release* No. PRESS/TPRB/280 (WTO, 21 March 2007), available: <http://www.wto.org/english/tratop_e/tp_r_e/tp280_e.htm> (retrieved 10 November 2008), para. 159. See also Transport Canada, *Transportation in Canada 2007 Annual Report Addendum*, TP 13198E (Ottawa: Minister of Public Works and Government Services, 2007) [hereinafter *Transportation in Canada 2007*], Tables "EC6: Modal Shares in Canada-United States Trade, 1997-2007" and "EC7: Canada/Other Countries Trade, by Mode and Sector, 1997-2007." All hyperlinks last viewed 12 November 2008.

⁵ *Transportation in Canada 2007*, n. 4 above at Table M15: Canadian-Registered Fleet by Type, 1987, 1997, 2007. The Canadian fleet is comprised of 182 vessels with a total registered tonnage of 2.2M tonnes. Dry bulk carriers make up over half the tonnage (1M), with tankers (515) and ferries (428) sharing the remaining majority.

trade.⁶ Accordingly, Canada is a continental state in which “shipping is not something that appears to rank very high in government priorities even though it is an essential element of Canadian trade and economy.”⁷ That may still be true of commercial shipping. However, for risk assessment purposes, the increasing numbers and importance of fishing vessels and recreational boating registered and/or operating in Canadian waters have justified focused attention and new directions for Canadian maritime regulators. Every year there are many recreational boating accidents resulting in death, injury or property loss.⁸

Another significant contextual factor for Canadian maritime transportation law and policy is the constitutional framework. Since confederation in 1867, navigation and shipping have been federal subject-matter so that maritime legislation has essentially consisted of federal law, despite a period during which provincial law was applied in a maritime law setting.⁹ Canadian maritime law draws very heavily from international maritime law and its judicial development takes into consideration this essentially international character and the need for international uniformity.¹⁰ However, federal and provincial courts have generally common responsibilities for the administration of Canadian maritime law, irrespective of the location, types or flags of vessels involved.¹¹

⁶ Transport Canada, *A Shipping Policy for Canada*, TP 1676 (Ottawa: Transport Canada, Marine, 1979), p. 1; see also Monteiro and Robertson, n. 1 above, p. 581 (Stating that “in 1949, the government concluded that Canada was not justified in maintaining a Canadian flag deep sea fleet via subsidies or preferential tax treatment for shipowners and operators, a policy which has not changed to date”).

⁷ E. Gold, A. Chircop, and H. Kindred, *Maritime Law* (Toronto: Irwin Law, 2003), p. 23.

⁸ Every year some 150 persons die from boating accidents in Canada. See Transport Canada, *Safe Boating Guide 2006*, TP 511 (01/2008) (Ottawa: Transport Canada, Office of Boating Safety, 2008), p. 6, available: <http://www.fedpubs.com/subject/boat/safe_boating_guide.htm> (retrieved 30 March 2009). Statistics concerning accidents from other vessels are reported in: *Transportation in Canada 2007*, n. 4 above at Tables “S14: Marine Occurrences, 2002–2007” and “S17: Small Canadian Vessels Engaged in Fishing Activity Marine Occurrences, 1997–2007.”

⁹ *Quebec North Shore Paper Co. v. Canadian Pacific Ltd.*, [1977] 2 S.C.R. 1054, *McNamara Construction (Western) Ltd. v. R.*, [1977] 2 S.C.R. 654, and *Zavarovalna Skupnost Triglav (Insurance Community Triglav Ltd.) v. Terrasses Jewellers Inc.*, [1983] 1 S.C.R. 283, followed by *ITO International Terminal Operators Ltd. v. Miida Electronics Inc. (The Buenos Aires Maru)*, [1986] 1 S.C.R. 752, and *Ordon Estate v. Grail*, [1998] 3 S.C.R. 437.

¹⁰ Gold et al., n. 7 above, pp. 115–117.

¹¹ *Federal Courts Act*, R.S., 1985, c. F-7, s. 22(1) & (3).

17.3. The Multiple Layers of Canadian Maritime Policy Making

Canadian maritime policy has a *problematique* involving multiple layers of federal policy making processes. On one level, there is departmental policy, which is developed at the highest level of the department and frequently also at the unit level within the department. There are also policies of departments that share ocean responsibilities and which may overlap with the Department of Transport's (Transport Canada) mandate, and that in turn may lead to inter-departmental policies. Overarching departmental policies are national policies concerning sustainable development, modern comptrollership and other matters imposed on all line departments by the Office of the Prime Minister and/or the Treasury Board of Canada. For example, the Treasury Board's Management Accountability Framework has had a far-reaching effect on the formulation of departmental policies, including maritime transport policy.¹²

Although ostensibly setting out a framework for integrated oceans management, the Oceans Strategy¹³ and accompanying Oceans Action Plan¹⁴ considered by other contributors in this project say very little about marine transportation generally, and maritime safety and vessel-source pollution in particular. This is partly explained by the difficulties faced by the Department of Fisheries and Oceans (DFO) in performing its "integration" mandate as lead department under the *Oceans Act*,¹⁵ and partly due to a fundamental difference in marine culture between departments dedicated to oceans and fisheries on the one hand and maritime transport on the other.¹⁶ Although in public the federal institutional family tends to espouse interdepartmental cooperation, in reality Transport Canada has played a marginal role in DFO's ocean policy initiatives.

As with all federal departments, Transport Canada has its own national sectoral policy process, consisting of what may be described as macro and micro policies. In 2003 Liberal Transport Minister David Collenette announced

¹² See generally Treasury Board of Canada Secretariat, "TB Management Accountability Framework," available: <<http://www.tbs-sct.gc.ca/maf-crg/index-eng.asp>> (retrieved 10 November 2008).

¹³ Department of Fisheries and Oceans, *Canada's Oceans Strategy: Our Oceans, Our Future* (Ottawa: Fisheries and Oceans Canada, Oceans Directorate, 2002), available: <http://www.dfo-mpo.gc.ca/oceans-habitat/oceans/ri-rs/cos-soc/index_e.asp> (retrieved 10 November 2008).

¹⁴ Department of Fisheries and Oceans, *Canada's Oceans Action Plan: For Present and Future Generations* (Ottawa: Fisheries and Oceans Canada, 2005), available: <http://www.dfo-mpo.gc.ca/oceans-habitat/oceans/oap-pao/index_e.asp> (retrieved 10 November 2008).

¹⁵ *Oceans Act*, S.C. 1996, c. 31.

¹⁶ See A. Chircop, "The Regulation of Marine Transportation and Integrated Coastal Management: Two Management Approaches in Need of Integration," in J. Norton Moore, Kuen Chen Fu and M. Nordquist, eds, *Recent Developments in the Law of the Sea and China* (Leiden: Nijhoff, 2005).

“Straight Ahead - A Vision for Transportation in Canada,” a major macro policy that contained little new provision for the marine sector, but confirmed existing port divestiture, review with industry of benefits of marine transportation, evaluation of the provision of marine navigational services and continued participation in international shipping policy processes, notably the Organization for Economic Cooperation and Development (OECD) and International Maritime Organization (IMO).¹⁷ Also at a macro level, the Department has its own Sustainable Development Strategy and Action Plan¹⁸ outlining the strategic priorities, challenges, commitments, and performance measures for measuring success. The Department’s Sustainable Development Strategy (SDS) focuses on three areas (urban transportation, commercial freight transportation, and marine transportation) where the Department feels it can make a difference towards achieving sustainable development. In connection with marine transportation, the SDS states that the Department will address pollution from ship emissions (both atmospheric and marine) and from the presence of the ship itself, and identifies some of the major initiatives undertaken by the Department in that regard.¹⁹ However, it does not provide insight into how decisions regarding those initiatives are made. In addition to the macro policies, the Department has formulated problem-specific management responses that are in effect also policy decisions. These include the strategies for invasive alien species,²⁰ places of refuge,²¹ *Canada Shipping Act, 2001* compliance and enforcement, and safety and security culture.²²

¹⁷ Transport Canada, *Straight Ahead – A Vision for Transportation in Canada*, TP 14054, online: <<http://www.tc.gc.ca/publications/straightahead/vision/menu.htm>> [hereinafter Transport Canada, *Straight Ahead*].

¹⁸ Transport Canada, *Sustainable Development Strategy 2007–2009*, TP 13123 (Transport Canada, 2006), available: <<http://www.tc.gc.ca/pol/en/acs/SD/sds0709/menu.htm>> (retrieved 10 November 2008).

¹⁹ Major initiatives include: Business case for environmental incentive programme in the marine sector, shortsea shipping, skills and labour, transportation data and information and marine pollution control initiatives (sulphur emission control areas, ballast water management, HNS response, ship waste management/reception and aerial surveillance).

²⁰ Environment Canada, *An Invasive Alien Species Strategy for Canada* (Environment Canada, 2004), available: <www.ec.gc.ca/eee-ias> (retrieved 10 November 2008). Fisheries and Oceans Canada, *Canadian Action Plan to Address the Threat of Aquatic Invasive Species* (Canadian Council of Fisheries and Aquaculture Ministers: 2004), available: <www.dfo-mpo.gc.ca/science/environmental-environnement/invasive_e.htm> (retrieved 10 November 2008).

²¹ Transport Canada, *National Places of Refuge Contingency Plan*, TP 14707 (Transport Canada, 2007), available: <<http://www.tc.gc.ca/MarineSafety/tp/tp14707/menu.htm>> (retrieved 10 November 2008).

²² Transport Canada, *Moving Forward: Changing the Safety and Security Culture*, TP 14678 (Transport Canada, 2008), available: <<http://www.tc.gc.ca/ccss/StrategicPlan/menu.html>> (retrieved 10 November 2008).

Transport Canada's policy framework for the transportation industry in general is found in "Straight Ahead – A Vision for Transportation in Canada." The document covers all modes of transportation, offering a framework to guide future transportation policy development and initiatives. In general, it emphasises a market-based approach to policy decisions in order to achieve "a better matching of investment decisions in infrastructure to user needs and offers."²³ In the context of marine safety and the environment, the document specifically supports the implementation of strategic plans formulated by Marine Safety, an important unit within Transport Canada.

Marine Safety has produced two strategic plans (1997–2002; 2003–2010)²⁴ and is working on a third (2008–2015).²⁵ The first plan, "The Way Ahead," reflected the Department's recent reorganisation and new oversight role. It focused on strategies that impacted Marine Safety's internal environment and called for the modernisation and streamlining of the existing legislative regime (including the *Canada Shipping Act* and the *Pilotage Act*) to better reflect modern shipping practices. It also highlighted the need to maintain safety standards through more cost-effective means, i.e., the delegation of statutory inspection functions to classification societies and to formalise the consultation process and communication links within Transport Canada and between the Department and stakeholders. This entailed a renewal of the Canadian Marine Advisory Council, which is a key forum through which the various departmental units interact with stakeholders at the national level. The second plan, "The Next Wave," continues the strategic direction set out in the previous plan and follows up on the implementation of the *Canada Shipping Act, 2001*, which had been adopted recently. The plan called for the development and enhancement of a comprehensive performance-based regulatory framework to enable the bringing into force of the Act. It also emphasised the need for a risk-based inspection regime, enhanced pollution prevention, development of a quality assurance programme and safety management systems, and promotion of a stronger safety culture within the marine industry. The plan also committed to the ongoing development of information systems to ensure data collection systems provide the best possible information for safety planning and decision making. At the time of writing,

²³ Transport Canada, *Straight Ahead*, n. 17 above, p. 84.

²⁴ Transport Canada, *Marine Safety Strategic Plan 1997–2002 (The Way Ahead)*, TP 13111, available: <<http://www.tc.gc.ca/marinesafety/TP/TP13111/strategic-plan-1997-2002/menu.htm>> (retrieved 10 November 2008); and Transport Canada, *The Next Wave: Marine Safety Strategic Plan 2003–2010*, TP13111B (2003), available: <<http://www.tc.gc.ca/marinesafety/TP/TP13111/strategic-plan-2003-2010/menu.htm>> (retrieved 10 November 2008).

²⁵ Transport Canada, *The New Wave: Marine Safety Strategic Plan 2008–2015* (draft, 2008) [hereinafter Transport Canada, *The New Wave*].

Marine Safety is developing a third strategic plan, “The New Wave,” that will reflect the organisation’s increasing focus on small commercial vessels and tougher global pollution prevention regulations. It also recognises the growth and importance of the maritime labour market factors. The Plan further calls for strengthened risk-based decision making and the implementation of an integrated management system within Marine Safety. It also includes improvement of the regulatory framework by strengthening the consultation process, continuing a performance-based regulatory scheme, developing and implementing safety management systems for domestic shipping, and faster ratification of international instruments.

Despite the various policy layers identified above, Canada does not have a dedicated and fully integrated marine transportation policy that includes directions for marine safety and vessel-source pollution. The National Marine Policy adopted in 1995²⁶ was not such a document as it focused, for the most part, on overhauling Canada’s overbuilt public infrastructure and its management on the basis of the principle of commercialisation. Consequently, the latter policy focused primarily on the re-organisation of the country’s port system and related legislation and led to the adoption of the *Canada Marine Act*.²⁷ Although given general directions from higher policies, Canadian policy for maritime safety regulation and vessel-source pollution is fundamentally set at a departmental level, and more specifically at the unit level, i.e., Marine Safety, and formulated as strategic plans. Despite the series of strategy documents, there does not appear to be a straightforward policy plan, with clear and concise goals for marine safety and environmental regulation. On the environmental side the focus is on “sustainability”; on the safety side, the main focus is on safety management systems and accident prevention. Overall, the Canadian maritime regulatory framework is now less prescriptive and more focused on performance and risk management. Transport Canada’s shift toward greater focus on safety management reflects recognition that the regulatory approach does not ensure adequate risk management and adds a burden on the Department’s limited resources (e.g., enforcement).²⁸

²⁶ Transport Canada, *National Marine Policy* (Ottawa: Transport Canada, 1995).

²⁷ *Canada Marine Act*, S.C. 1998, c. 10.

²⁸ *Moving Forward*, TC’s safety management strategy, starts with the recognition that “an entity can comply with regulations without effectively managing risks to acceptable levels. A more comprehensive approach, which includes systematically understanding and managing risks and threats in the system, will enable us to make progress on our safety and security objectives.” Transport Canada, *Moving Forward*, n. 22 above, p. iii.

17.4. Evolution of the Maritime Legislative Framework and Canadian Ratification Pattern of IMO Conventions

The contemporary sources of maritime law in Canada consist of federal statutes, case law and maritime law conventions to which Canada is a party. Canadian maritime law is federal law. Canada inherited the original structure of its maritime and admiralty law from English law.²⁹ Much of Canada's early maritime law consisted of 19th century English statutory law and case law, which was applied in the colonies, and generally received into Canadian law on confederation in 1867. Canada did not enjoy legislative powers over foreign affairs until the *Statute of Westminster* in 1931³⁰ and consequently the Canadian Parliament was limited in its ability to regulate shipping. With *Westminster*, Canada attained competence to deal with admiralty and shipping matters and in 1934 enacted the *Admiralty Act*, 1934³¹ and the first *Canada Shipping Act*.³² British dominance of Canadian maritime legislation would continue well after this period.³³ However, from 1931 onwards, Canada was in a position to further develop its policy and legislative framework for maritime matters generally through numerous amendments to the *Canada Shipping Act* and its eventual transformation into the *Canada Shipping Act, 2001*,³⁴ the *Marine Liability Act*³⁵ and numerous other statutes listed in Table 17.1. Empowered by the *Federal Court Act*, which was adopted in 1971,³⁶ Canadian courts would also embark on a case law development path that would part ways in many respects with English maritime law.

²⁹ For a historical account of the historical origins of Canadian maritime law and jurisdiction, see generally Gold et al., n. 7 above at 114–110.

³⁰ *Statute of Westminster*, 22 Geo. V., c. 4.

³¹ *Admiralty Act*, S.C. 1934, c. 31.

³² *Canada Shipping Act*, S.C. 1934, c. 44.

³³ See T. L. McDorman, "The History of Shipping Law in Canada: The British Dominance," *Dalhousie Law Journal* 7 (1982–1983): 620.

³⁴ *Canada Shipping Act*, S.C. 2001, c. 26 [hereinafter CSA 2001].

³⁵ *Marine Liability Act*, S.C. 2001, c. 6.

³⁶ *Federal Court Act*, S.C. 1971, c. 1. The title of the Act would later be amended to *Federal Courts Act*. The Federal Court, as the Admiralty Court of Canada, succeeded the Exchequer Court.

Table 17.1. Statutory scheme for maritime and related statutes in Canada

Legislation	Statutes
Constitutional	<i>Constitution Act</i>
Judicature	<i>Federal Courts Act</i>
Maritime	<i>Arctic Waters Pollution Prevention Act</i> <i>Bills of Lading Act</i> <i>Canada Marine Act</i> <i>Canada Shipping Act</i> <i>Canada Transportation Act</i> <i>Coasting Trade Act</i> <i>Marine Insurance Act</i> <i>Marine Liability Act</i> <i>Marine Transportation Security Act</i> <i>Merchant Seamen Compensation Act</i> <i>Navigable Waters Protection Act</i> <i>Pilotage Act</i> <i>Safe Containers Convention Act</i>
Fisheries & Environmental	<i>Canada National Marine Conservation Areas Act</i> <i>Canada Water Act</i> <i>Canada Wildlife Act</i> <i>Canadian Environmental Assessment Act</i> <i>Canadian Environmental Protection Act</i> <i>Fisheries Act</i> <i>Migratory Birds Convention Act, 1994</i>
Oil & Gas	<i>Canada Oil and Gas Operations Act</i> <i>Canada-Newfoundland Atlantic Accord Implementation Act</i> <i>Canada-Nova Scotia Offshore Petroleum Resources Accord Implementation Act</i>
Other	<i>Atomic Energy Control Act</i> <i>Bank Act</i> <i>Canada Labour Code</i> <i>Canadian Transportation Accident Investigation and Safety Board Act</i> <i>Nuclear Liability Act</i> <i>Oceans Act</i> <i>Transportation of Dangerous Goods Act, 1992</i>

The development of Canadian maritime law as it relates to safety, environmental and security considerations has in great part reflected commitments to international maritime conventions and generally the work of the IMO in developing these instruments, as well as the incremental development of technical standards and guidelines. The *Canada Shipping Act, 2001* includes as an objective to “ensure that Canada can meet its international

obligations under bilateral and multilateral agreements with respect to navigation and shipping.”³⁷ The Act implements numerous international maritime conventions to which Canada is a party.³⁸ Section 32(1) of the Act provides for referential incorporation of standards produced by international bodies through regulatory action. The *Marine Liability Act* essentially consists of principles and rules set out in international conventions to which Canada is or may become a party.

Canada is not a party to all the IMO Conventions. On safety matters, Canada is a party to the International Convention for the Safety of Life at Sea, 1974 as amended (SOLAS),³⁹ International Convention on Load Lines,⁴⁰ Convention on the International Regulations for Preventing Collisions at Sea, 1972⁴¹ and International Convention on Maritime Search and Rescue, 1979,⁴² but not to the 1978 and 1988 protocols of SOLAS.⁴³ On vessel-source pollution, Canada is a party to International Convention for the Prevention of Pollution from Ships, 1973 as amended by the Protocol of 1978 (MARPOL) and Annexes I to III, but not to Annexes IV to VI.⁴⁴ It is a party to the International Convention on Salvage, 1989⁴⁵ and International Convention on Oil Pollution Preparedness, Response and Co-operation, 1990 (OPRC), but not to the OPRC Protocol on Hazardous and Noxious Substances.⁴⁶ Canada is not

³⁷ CSA 2001, n. 34 above, s. 6(g).

³⁸ Id. (Schedule 1 lists 31 conventions as the responsibility of the Minister of Transport and Schedule 2 states two others under the responsibility of the Minister of Fisheries and Oceans).

³⁹ *International Convention for the Safety of Life at Sea*, 1974, 1 November 1974, 1184 U.N.T.S. 2, Institute of Maritime Law, *The Ratification of Maritime Conventions* (London: Lloyd’s Press, 1991–2003), Vol. I.3.20.

⁴⁰ *International Convention on Load Lines*, 1966, 5 April 1966, 640 U.N.T.S. 133, Institute of Maritime Law, *The Ratification of Maritime Conventions* (London: Lloyd’s Press, 1991–2003) Vol. I.3.50; *Protocol of 1988 relating to the International Convention on Load Lines*, 1966, 11 November 1988, 2 U.S.T. 102, Institute of Maritime Law, n. 39 above, Vol. I.3.60.

⁴¹ *Convention on the International Regulations for Preventing Collisions at Sea, 1972*, 20 October 1972, 1050 U.N.T.S. 16, Institute of Maritime Law, n. 39, Vol. I.3.250.

⁴² *International Convention on Maritime Search and Rescue*, 27 April 1979, 1405 U.N.T.S. 97, Institute of Maritime Law, n. 39 above, Vol. I.3.280.

⁴³ *Protocol relating to the International Convention for the Safety of Life at Sea, 1974*, 17 February 1978, 1276 U.N.T.S. 237, Institute of Maritime Law, n. 39 above, Vol. I.3.30; *Protocol of 1988 relating to the International Convention for the Safety of Life at Sea, 1974*, 11 November 1988, U.S. Treaty Doc. 102-2, Institute of Maritime Law, n. 39 above, Vol. I.3.40.

⁴⁴ *International Convention for the Prevention of Pollution from Ships*, 2 November 1973, 1340 U.N.T.S. 184; *Protocol of 1978 relating to the International Convention for the Prevention of Pollution from Ships of 1973*, 17 February 1978, 1340 U.N.T.S. 61.

⁴⁵ *International Convention on Salvage*, 28 April 1989, U.K.T.S. 1996 No. 93.

⁴⁶ *International Convention on Oil Pollution Preparedness, Response and Co-operation*, 30 November 1990, 30 I.L.M. 733; OPRC/HNS Protocol, *Protocol on Preparedness, Response*

a party to the International Convention on the Control of Harmful Anti-Fouling Systems on Ships, 2001,⁴⁷ International Convention for the Control and Management of Ships' Ballast Water and Sediments, 2004⁴⁸ and the recently adopted International Convention on the Removal of Wrecks, 2007,⁴⁹ but has legislated rules and standards for ballast waters, anti-fouling systems and wrecks in navigable waterways.⁵⁰ On damage liability and compensation, Canada is a party to the Protocol to Amend the International Convention on Civil Liability for Oil Pollution Damage, 1969, 1992 (CLC)⁵¹ and Protocol to amend the International Convention on the Establishment of an International Fund for Compensation for Oil Pollution Damage, 1971, 1992 (IOPCF),⁵² but not to the Protocol of 2003.⁵³ Recently Canada became a party to the Convention on Limitation of Liability for Maritime Claims, 1976 (LLMC), as amended by the Protocol of 1996.⁵⁴ Canada has not always become a party to international conventions that it has in fact implemented. For example, provisions of MARPOL and the LLMC were implemented in Canadian legislation long before Canada became a party to those instruments.

There have been some departures from IMO international standards at various points in time. Canada did not become a party to MARPOL when this instrument came into force partly because it believed it had higher pollution

and Co-operation to Pollution Incidents by Hazardous and Noxious Substances, 2000, IMO Doc. HNSOPRC/CONF/11/Rev 1, 15 March 2000.

⁴⁷ *International Convention on the Control of Harmful Anti-Fouling Systems on Ships*, London, 5 October 2001 (London: IMO, 2005) [hereinafter AFS Convention].

⁴⁸ *International Convention for the Control and Management of Ships' Ballast Water and Sediments*, London, 16 February 2004, IMO Doc. IMO/BWM/CONF/36.

⁴⁹ *International Convention on the Removal of Wrecks*, Nairobi, 18 May 2007, IMO Doc. No. LEG/CONF.16/21.

⁵⁰ *Navigable Waters Protection Act* (R.S.C., 1985, c. N-22); *Ballast Water Control and Management Regulations* (SOR/2006-129); and *Regulations for the Prevention of Pollution from Ships and for Dangerous Chemicals* (SOR/2007-86).

⁵¹ *International Convention on Civil Liability for Oil Pollution Damage*, 29 November 1969, 973 U.N.T.S. 3, as amended by *Protocol to Amend the International Convention on Civil Liability for Oil Pollution Damage, 1969*, 27 November 1992, U.K.T.S. 1996 No. 87 [hereinafter CLC].

⁵² *International Convention on the Establishment of an International Fund for Compensation for Oil Pollution Damage*, 18 December 1971, 1110 U.N.T.S. 57, as amended by *Protocol to amend the International Convention on the Establishment of an International Fund for Compensation for Oil Pollution Damage, 1971*, 27 November 1992, 1996 A.T.S. 3.

⁵³ *Protocol of 2003 to the International Convention on the Establishment of an International Fund for Compensation for Oil Pollution Damage, 1992*, 16 May 2003, IMO Doc. No. LEG/CONF.14/20.

⁵⁴ *Convention on Limitation of Liability for Maritime Claims, 1976*, 19 November 1976, 1456 U.N.T.S. 221, as amended by the *Protocol of 1996 to amend the Convention on Limitation of Liability for Maritime Claims, 1976*, 2 May 1996, 35 I.L.M. 1433.

standards in its legislation. In relation to Arctic waters, Canada made a reservation to its ratification to MARPOL to safeguard the application of the *Arctic Waters Pollution Prevention Act*⁵⁵ in the Canadian Arctic.⁵⁶ This latter statute sets higher waste management and discharge standards in Arctic waters from ships for most ship-generated waste and anticipated the special power conferred on coastal states for ice-covered areas by Article 234 of the United Nations Convention on the Law of the Sea, 1982,⁵⁷ to which Canada is a party.

17.5. Institutional Framework and New Directions for the Maritime Administration

In principle and at law, Transport Canada is the maritime administration of Canada. In practice, functions related to maritime administration are shared among a number of federal government departments, forming a complex institutional mosaic.⁵⁸

A year after the adoption of the original *Canada Shipping Act*, Transport Canada's first iteration was established in 1935 in response to the new challenges facing the organisation of national transportation.⁵⁹ At this time, institutions responsible for Canadian railways, inland navigation and marine shipping were integrated and the *Department of Transport Act*, 1936 was adopted.⁶⁰ Until 1994 Transport Canada performed a dual role that involved the "administration" and "management" of the transport system as well as developing the policy and regulatory framework. This was perceived to result

⁵⁵ *Arctic Waters Pollution Prevention Act*, R.S.C., 1985, c. A-12 [hereinafter AWPPA].

⁵⁶ International Maritime Organization (IMO), *Status of Multilateral Conventions and Instruments in Respect of which the International Maritime Organization or its Secretary-General Performs Depositary or other Functions, as at 31 December 2005*, IMO Doc. J/9193, p. 96 [hereinafter IMO].

⁵⁷ *United Nations Convention on the Law of the Sea*, Montego Bay, 10 December 1982, UN Doc. A/CONF.62/122, 7 October 1982, 33 *I.L.M.* 1309.

⁵⁸ There are, in addition: (1) consultative bodies, such as the Canadian Marine Advisory Council and National Marine and Industrial Council; and (2) technical or function-specific bodies, including those established by statute, such as the Canada Transportation Agency, Marine Technical Review Board, Transportation Appeal Tribunal of Canada, Transportation Safety Board, and Ship Source Pollution Fund. Further, industry and transportation professional groups (e.g., Canadian Maritime Law Association, Shipping Federation of Canada, and Canadian Shipowners Association, among several others) are active participants in maritime policy and law-making processes.

⁵⁹ Transport Canada, *Transport Canada: Our Story [1936–1946]* (n.d.), available: <<http://www.tc.gc.ca/publications/ourstory/1936-1946-menu.htm>> (retrieved 10 November 2008).

⁶⁰ Today this statute is the *Department of Transport Act*, R.S.C., 1985, c. T-18.

in a conflict of interest and it was decided that Transport Canada should focus primarily on policy and regulatory responsibilities. Thus, in 1994 Transport Canada was reorganised, the St. Lawrence Seaway and numerous ports were also transferred from Transport Canada to local authorities. Transport Canada also lost the Canadian Coast Guard to DFO, ostensibly in order to rationalise government and reduce costs through the merger of the two departments' fleets.⁶¹ As a result, and at least until 2003, Transport Canada became less of an organisation focused on "administration" and "management" of operations, and became more focused on policy and regulatory functions. In late 2003, all marine safety policy and regulatory responsibilities were consolidated under this department. As a result, the Office of Boating Safety, the *Navigable Waters Protection Act*,⁶² and certain regulatory aspects of pollution prevention and emergency response, formerly responsibilities of other departments, were transferred back to Transport Canada.⁶³ At this time, the Canadian Coast Guard remains attached to DFO, although as a special operating agency. Today Transport Canada is responsible for developing national transportation policies and programmes. Within Transport Canada, Marine Safety is the principal policy, regulatory and enforcement agency relating to ship safety and marine pollution prevention. Transport Canada is the lead agency under the *Canada Shipping Act, 2001*, the *Arctic Waters Pollution Prevention Act*, the *Navigable Waters Protection Act*, and the *Canada Marine Act*.

DFO is tasked by legislation to lead and develop Canada's national oceans strategy and integrated management planning for the marine environment. This department focuses on Canada's economic, ecological, and scientific interests in oceans, including fisheries, hydrography, and marine services, and the coordination of federal policies and programmes respecting oceans.⁶⁴ It shares jurisdiction with Transport Canada in many areas and is responsible for the administration and implementation of the *Oceans Act* and *Fisheries Act*.⁶⁵ In particular, it is responsible under the *Canada Shipping Act, 2001* for dealing with pollution response.⁶⁶ Operating under the DFO umbrella, the Canadian Coast Guard (CCG) is the civilian federal agency responsible for patrolling Canada's coastline, providing marine search and rescue, maintenance of aids to navigation, marine pollution response, and icebreaking services. The move to DFO led to low morale and caused operational difficulties possibly

⁶¹ Transport Canada, *Transport Canada: Our Story* [1986–1996] (n.d.), available: <<http://www.tc.gc.ca/publications/ourstory/1986-1996-2.htm>> (retrieved 10 November 2008).

⁶² *Navigable Waters Protection Act*, n. 50 above.

⁶³ Transport Canada, *The New Wave*, n. 25 above, p. 4.

⁶⁴ *Department of Fisheries and Oceans Act*, R.S.C., 1985, c. F-15, s. 4.

⁶⁵ *Fisheries Act*, R.S.C., 1985, c. F-14 [hereinafter FA].

⁶⁶ CSA 2001, n. 34 above at ss. 174.1, 179 & 180.

resulting from differences between its shipping culture and the fisheries development and management culture of its new home, as well as budget cuts in the name of rationalisation.⁶⁷

The Department of Environment (Environment Canada)⁶⁸ is responsible for the administration of several statutes for the protection and conservation of Canada's environment. Environment Canada has direct responsibility for marine pollution under the *Canadian Environmental Protection Act, 1999*,⁶⁹ *Canada Water Act*,⁷⁰ *Canada Wildlife Act*,⁷¹ the *Migratory Birds Convention Act, 1994*⁷² and the pollution prevention provisions of the *Fisheries Act*.⁷³ Environment Canada is the lead federal department on response and cleanup of up of hazardous wastes and oil spills. It operates in conjunction with DFO and Transport Canada in relation to several of its marine tasks.

Given the complexity and overlap of legislative and enforcement authority within the federal government, it is not surprising that a great deal of coordination is required between the various agencies involved. For example, vessel-source marine pollution is enforced by Transport Canada Inspectors (CSA 2001), Fisheries Officers (FA), Environment Canada's Enforcement Branch (CEPA), and the Canadian Wildlife Service's Enforcement Branch (MBCA). Although some interdepartmental dialogue occurs at the legislative steering committee level, there appears to have been little effective dialogue and cooperation in the development of regulatory strategies and policy. Faced with overlapping and competing mandates, Transport Canada, DFO, and Environment Canada have concluded memoranda of agreement to cooperate on enforcement issues.⁷⁴

⁶⁷ See the testimony of Michael Turner, former Deputy Commissioner and Acting Commissioner of the Canadian Coast Guard in Standing Senate Committee on Fisheries and Oceans, "The Coast Guard in Canada's Arctic: Interim Report," Fourth Report, June 2008, p. 36.

⁶⁸ *Department of the Environment Act*, R.S.C., 1985, c. E-10.

⁶⁹ *Canadian Environmental Protection Act*, S.C. 1999, c. 33 [hereinafter CEPA].

⁷⁰ *Canada Water Act*, R.S.C., 1985, c. C-11.

⁷¹ *Canada Wildlife Act*, R.S.C., 1985, c. W-9.

⁷² *Migratory Birds Convention Act*, S.C., 1994, c. 22 [hereinafter MBCA].

⁷³ Under an administrative agreement with DFO, EC has primary responsibility for the pollution prevention provisions of the *Fisheries Act*. Environment Canada, *Compliance and Enforcement Report - Volume 1*, available: <<http://environnementcanada.gc.ca/alef-ewe/default.asp?lang=en&n=09ECE703>> (retrieved 10 November 2008), Section 1.

⁷⁴ Some of the main MOUs signed to date are: TC/EC *MOU respecting Enforcement* (of the CSA 2001, AWPPA, MBCA and CEPA) (2006); TC/DFO *MOU respecting Safety at Sea of Commercial Fishers* (November 2006); TC/EC/DFO *MOU respecting Enforcement in Atlantic Canada* (2002); TC/DFO *MOU and Resource Transfer Agreement (regarding transfer of the CCG policy responsibilities to TC)* (3 March 2005); TC/DFO *MOU respecting Marine*

17.6. Selected Thematic Issues

17.6.1. Maritime Safety

Canada's principal legislation concerning maritime safety is the *Canada Shipping Act, 2001*, which came into force on 1 July 2007. As mentioned earlier, the original *Canada Shipping Act* dated back to 1934, and since then it saw numerous amendments and add-ons, making the legislation voluminous and unwieldy. As McDorman noted, the underlying policy rationale tended to reflect former British imperial interests rather than the contemporary trading interests of a modern nation such as Canada.⁷⁵ The legislation was also notoriously complex and inefficient, with over one hundred sets of regulations, making it difficult to enforce. Perhaps a major problem with the old legislation was its emphasis on regulation that required enforcement. For these and other reasons, a process of legal reform was commenced in 1997 and culminated in the adoption of the modern and streamlined *Canada Shipping Act, 2001*. The change has been described as a move from an inspection-based to a compliance-based regime, with a greater emphasis on a proactive approach to maritime safety and promotion of compliance.⁷⁶ Since the adoption of the Act in 2001, regulations under the new act took years to modernise and re-enact through an ongoing consultative process with industry and other bodies, and the process continues today. With its many changes, the Act is touted as better suited to promoting safer, more efficient, and environmentally sound shipping. In fact, it takes into consideration the broader range of vessels in Canadian navigable waters (from pleasure boating to commercial vessels) and provides for modern operational safety and environmental standards.

In the European Union (EU), a similar trend toward performance based legislation is observed, but Member States insist on following initiatives within the IMO framework. A point of divergence is in the provision of services, which in Canada is determined on a mixed risk-based decision making plus market-based approach (e.g., privatisation, user-pays). In comparison, in the EU, provision of services is generally governed by the EU rule on free provision of services (also market-based approach), but with certain exclusions for public utility services. In addition, there are differences between Member

Transportation Safety & Environmental Protection (April 1996); DFO/EC MOU respecting administration of the Fisheries Act (1985).

⁷⁵ McDorman, n. 33 above, p. 651.

⁷⁶ Transport Canada, "Canada Shipping Act, 2001 ushers in new era of safety and protection of the marine environment," *News Release*, No. H 133/07 (3 July 2007).

States as this issue belongs to the area of shared (EU-Member State) competences.

17.6.1.1. Delegation of Functions to Classification Societies and Their Supervision

A major change introduced by the *Canada Shipping Act, 2001* is the delegation of certain functions previously considered the exclusive reserve of the maritime administration. The EU also delegates certain tasks to classification societies. In Canada, the *Canada Shipping Act, 2001* empowers the Minister of Transport with discretionary authority to delegate classification societies to issue Canadian maritime documents, carry out compliance inspections, and undertake audit inspections.⁷⁷ To date, five classification societies have been authorised to do so.⁷⁸ The move toward delegated statutory inspection was a specific commitment made in Marine Safety's in "The Way Ahead" and was first implemented in 1998.⁷⁹ In July 1999, prior to proceeding with the comprehensive "master" delegation agreements, Transport Canada signed agreements concerning certification for the International Safety Management (ISM) Code.⁸⁰ Ships may enrol in the Delegated Statutory Inspection

⁷⁷ CSA 2001, n. 34 above, ss. 12 & 13.

⁷⁸ Lloyd's Register of Shipping (4 December 2000), American Bureau of Shipping (23 March 2001), Germanischer Lloyd (10 September 2001), Det Norske Veritas (22 April 2002), and Bureau Veritas (31 March 2003). Transport Canada, "Delegation of Statutory Inspection and Certification" website, available: <<http://www.tc.gc.ca/marinesafety/NPD/Intro-Text/menu.htm>> (retrieved 10 November 2008) [hereinafter Transport Canada, "DSI&C"].

⁷⁹ *Bill C-15, an Act to amend the Canada Shipping Act and to make consequential amendments to other Acts* (1st Sess., 36th Parl., 46 Eliz. II., 1997), 1998, c. 16, s. 6, adding s. 317.1 to the *Canada Shipping Act, 1985*. At the time of passing only one political party, the New Democratic Party, opposed this move on the grounds that: a) "[p]rivatization of inspection will ... increase bottom line pressures to cut corners to do things the cheap way rather than the safe way," b) that the job of safety inspector will become a patronage appointment, c) that classification societies are often lax, and d) that a large amount of revenue generated through inspections will be lost to international players. *House of Commons Debates, Second Reading of Bill C-15* (Edited Hansard, Debates No. 77: 19 March, 1998), p. 1105 (Bev Desjarlais), available: <<http://www2.parl.gc.ca/HousePublications/Publication.aspx?DocId=2332782&Language=E&Mode=1&Parl=36&Ses=1>> (retrieved 10 November 2008) and *House of Commons Debates, Third Reading of Bill C-15* (Edited Hansard, Debates No. 96: 30 April, 1998), p. 1105 (Bev Desjarlais), available: <<http://www2.parl.gc.ca/HousePublications/Publication.aspx?DocId=2332801&Language=E&Mode=1&Parl=36&Ses=1>> (retrieved 10 November 2008).

⁸⁰ This was done under the Safety Management Regulations with the five delegated classification societies. Those agreements are now considered complementary to the "master" agreements. Transport Canada, "DSI&C," n. 78 above.

Programme (DSIP)⁸¹ and thereafter its classification society becomes the sole issuing authority for the vessel's certificates. The DSIP encompasses most of the surveys and certification required under the Act and regulations, including documentary requirements of international conventions to which Canada is a party.⁸² Although these moves suggest a comprehensive delegation of authority, in practice Marine Safety has retained sole issuing authority for several important documents.⁸³ Further, Marine Safety retains authority to ensure that Canadian vessels comply with all applicable international and domestic requirements, and may monitor compliance through various administrative and executive measures.⁸⁴

17.6.1.2. Phasing-Out of Single-Hull Tankers

The phasing-out of single-hull tankers from trading in Canadian waters has had to tie in to the requirements of the United States *Oil Pollution Act of 1990*⁸⁵ and subsequently the initiative to amend Regulation 13 of Annex I to MARPOL concerning existing and new tankers. The purpose was to improve the standards of existing and new tankers as a preventative measure to accidental oil pollution resulting from an incident, such as collision or grounding, or in a worse case scenario, a casualty at sea. As noted earlier, the bulk of Canadian trade is with its southern neighbour and therefore any major change to the conditions or transportation of that trade can be expected to affect Canada. Accordingly, Canada proceeded to implement the single-hull standard under the influence of the United States' legislation as early as 1993 and further developed in 1995 to

⁸¹ Transport Canada, *Delegated Statutory Inspection Programme*, TP 13585E (Ottawa: Transport Canada, 17 December 2001), available: <<http://www.tc.gc.ca/marinesafety/NPD/Delegated-Statutory-Inspection/Revision-1-signed.PDF>> (retrieved 10 November 2008) [hereinafter Transport Canada, *DSIP*].

⁸² *Id.*, para. 3.2.4.

⁸³ E.g., Marine Occupational Safety and Health requirements; Safety Convention certificates on passenger vessels; extending inspection intervals or certificates more than two months beyond the due date; exemption of certificates; revoking a certificate; any statutory function or inspection not explicitly transferred. Transport Canada, *DISP*, n. 79 above, paras. 3–4.

⁸⁴ E.g., administrative reviews of the delegated organisation's reports and records; announced and unannounced verification inspections (of a scope comparable to a port state control inspection); dry-dock examinations; marine casualties and damage surveys; liaison with the delegated organisation; and audit of delegated organisation's shore operations. *Id.*

⁸⁵ *Oil Pollution Act of 1990*, 33 *U.S.C.* 2701, et seq. See the US Coast Guard Interim Final Rule on Double Hull Standards for Vessels Carrying Oil in Bulk, issued 12 August 1992 for smaller existing tankers.

apply to both Canadian ships and non-Canadian ships trading in Canadian waters, including the exclusive economic zone (EEZ).⁸⁶ Following the loss of the *Erika* and subsequently the *Prestige* off the coasts of France and Spain respectively, the IMO was urged to accelerate the phasing out of single-hulls and to bring international standards more in line with the *Oil Pollution Act of 1990* through further amendments to MARPOL.⁸⁷ In addition to an accelerated phase-out for single-hulls, heavy grade oils (HGOs) were banned from carriage by single-hulls being phased out and the Condition Assessment Scheme for these ships was extended.⁸⁸

Despite what appeared to be a convergence of international standards for single-hull tankers and the oil trade, which had suffered a seismic split with the *Oil Pollution Act of 1990*, there continued to be differences between the regulations under the Act and the revised MARPOL Annex I regulations. This was a divergence that Canada obviously could not ignore. Hence, Canadian regulations on single-hull phase-outs have had to apply two parallel regimes. The *Oil Pollution Act of 1990* requirements continue to be applied to certain existing tankers, notably those trading with the United States,⁸⁹ whereas others are to be governed by the amended MARPOL Annex I standards.⁹⁰ In contrast, the EU has a single regime governed by the amended MARPOL to accelerate the phase-out, which was largely at the behest of the EU.

⁸⁶ *Oil Pollution Prevention Regulations*, SOR/03-3, at s. 14.2: “Any oil tanker that is engaged in voyages that take place in waters under Canadian jurisdiction shall comply with Standards for the Double Hull Construction of Oil Tankers, TP 11710, published by the Canadian Coast Guard on July 6, 1993, as amended from time to time, other than sections 3 and 5 and subparagraphs 24(a)(i), (b)(i) and (c)(i) of those Standards.” Superseded by *Regulations for the Prevention of Pollution from Ships and for Dangerous Chemicals*, SOR/2007-86, s. 54 *et. seq.*

⁸⁷ Specifically Regulations 13F, 13G and 13H to Annex I for new tankers and existing large tankers. Following *Erika*, amendments to Regulation 13G resolution MEPC.95(46) included smaller tankers and brought MARPOL closer in line with the US OPA 1990 in order to bring the international requirements more in line with OPA 90 requirements by 2015. However, with *Prestige* in 2002, Regulation 13G was amended further and a new Regulation 13H was introduced accelerating the phase-out, among other.

⁸⁸ IMO, Resolutions MEPC.111(50) and MEPC.112(50).

⁸⁹ In particular the following: “Canadian tankers on domestic trade or only trading to the U.S.; U.S. tankers trading only to Canada or in transit through waters under Canadian jurisdiction; Canadian tankers that are less than 5000 DWT, except tankers over 600 DWT on international trade carrying heavy grade oil as cargo; non-Canadian tankers on the coasting trade; non-Canadian tankers on international trade calling at Canadian ports that are less than 5000 DWT, except tankers over 600 DWT carrying heavy grade oil as cargo.” Transport Canada, *Standards for the Double Hull Construction of Oil Tankers*, TP 11710 (Ottawa: Transport Canada, 6 July 1993, rev. 5 April 2005).

⁹⁰ *Id.*, namely: “Canadian tankers over 5000 DWT requiring international certification; non-Canadian tankers over 5000 DWT on international trade in waters under Canadian jurisdiction; tankers over 600 DWT on international trade carrying heavy grade oil as cargo.”

17.6.1.3. Use of Safety Regulatory Tools for Marine Environmental Protection and Conservation Purposes

Canada has used regulatory tools normally reserved for the regulation and management of navigation safety for the purpose of achieving marine environmental protection and conservation objectives. This type of regulation relates to restrictions and controls on the movement of vessels, or the conditions of that movement, and may be of a mandatory or recommendatory nature. This is a function that rests in DFO and is carried out by the Canadian Coast Guard.⁹¹ The utilisation of these tools for protection and conservation purposes has provided Canada with the management and enforcement tools needed without necessarily resorting to the designation of a particularly sensitive sea area (PSSA) through the IMO, as has been the case in several other regions, including the marine areas of EU Member States in the Baltic Sea, Canary Islands region, North Sea (Wadden Sea), and Western European Waters. To date, there has been only one instance of a PSSA being mooted within the Canadian federal government, specifically in connection with oil pollution incidents and consequent bird mortality in the northwest Atlantic off Newfoundland.⁹² As it turned out, rather than proceeding the PSSA path, the federal government passed amendments to the *Migratory Birds Convention Act* and *Canada Shipping Act, 2001*, which toughened the sanctions for oil pollution offences. In general, there are a number of instances where safety regulation has been employed for marine environmental protection and conservation purposes, and in particular in two types of situations.

⁹¹ Under the former *Canada Shipping Act*, s. 125. In 1996 pursuant to the *Public Service Rearrangement and Transfer of Duties Act*, R.S.C. 1985, c. P-34, responsibility for vessel traffic and marine navigation services under s. 562.15-562.20 and 517-525 of the CSA 1985 was transferred to DFO. TC/DFO, *MOU respecting Marine Safety & Environmental Protection* (April 1996), n. 74 above, s. 2, available: <<http://www.tc.gc.ca/MarineSafety/TP/mou/menu.htm>> (retrieved 10 November 2008).

⁹² Although not PSSAs, it should be noted that DFO has designated seven “Marine Protected Areas” (MPAs) under the *Oceans Act*, five in Eastern Canada: The Musquash Estuary (7 March 2007), Basin Head (PEI) (11 October 2005), Gilbert Bay (11 October 2005), Eastport (11 October 2005), The Gully (14 May 2004); and two off the Pacific coast: Bowie Seamount (21 April 2008), Endeavour Hydrothermal Vents (7 March 2003). Fisheries and Oceans Canada, “Marine Protected Areas,” available: <<http://www.dfo-mpo.gc.ca/oceans/marineareas-zonesmarines/mpa-zpm/index-eng.htm>> (retrieved 10 November 2008). The system of MPAs is also complemented by “Marine Wildlife Areas” established by Environment Canada and “National Marine Conservation Areas” established by Parks Canada. Again, there are no PSSAs established with regard to any of these. The departments and agencies are coordinated by the *Federal Marine Protected Areas Strategy* (Ottawa: DFO, 2005), available: <http://www.dfo-mpo.gc.ca/oceans-habitat/oceans/mpa-zpm/fedmpa-zpmfed/index_e.asp> (retrieved 10 November 2008).

The first concerns the requirement of use of automatic identification system (AIS), now an IMO international standard and which, while enabling the identification of the location of a vessel for the purposes of traffic regulation and search and rescue, also assists aerial surveillance of potential polluters and evidence for prosecutions.⁹³ Information concerning the identity and course of the ship is relayed to coastal authorities on a real-time basis and has enabled more efficient use of limited surveillance resources. The reporting of a slick may thus be traced to a vessel that may have been navigating the area. In another application, a fishing vessel that appears to be undertaking irregular movement at a slow speed in a marine protected area may also suggest that illegal fishing may be taking place.

The second situation concerns the conservation needs of a particular species and protection of its habitat, possibly on a seasonal basis. In the Atlantic region this has occurred in the form of change to the shipping lanes in the Canadian sector of the Bay of Fundy to protect the North Atlantic Right Whale population from ship strikes, a major cause of premature mortality for this endangered species. Studies of sightings between 1987–2000 suggested that the shipping lanes in the Bay of Fundy were in direct conflict with areas where major aggregations of this species occurred, and that a slight adjustment to the location of the lanes in the traffic separation scheme in the area could significantly reduce the ship strikes.⁹⁴ A proposal was made to the IMO and after consideration by the Sub-Committee on Safety of Navigation (NAV), the proposed changes were adopted. The changes were made as part of the North Atlantic Right Whale Recovery Plan led by DFO⁹⁵ after a joint government-industry working group concluded that the most cost effective way of reducing strikes (by as much as 80 percent) while maintaining safe commercial navigation was to shift ship traffic flow in areas of highest whale density.⁹⁶ The success of this initiative led to a similar proposal for the

⁹³ Pursuant to the *Navigation Safety Regulations*, all vessels over 300 tons on international voyages and domestic trade ships of 500 GT or more except fishing vessels must carry AIS. *Navigation Safety Regulations*, SOR/2005-134, s. 65 (entered into force 10 May 2005). In the EU, reporting is regulated by Directive 2002/59/EC on Community Vessel Traffic Monitoring and Information System.

⁹⁴ IMO, Doc. NAV 48/3/5 (5 April 2002).

⁹⁵ Transport Canada, “Bay of Fundy Shipping Lanes Moved to Protect Right Whale,” *News Release*, No. A017/02 (19 December 2002), available: <http://www.tc.gc.ca/mediaroom/releases/atl/2002/02_A017e.htm> (retrieved 10 November 2008). The new lanes were approved by IMO in December 2002 and became effective 1 July 2003.

⁹⁶ Transport Canada, “New Bay of Fundy Shipping Lanes to Protect Right Whale come into effect,” *News Release*, No. A007/03 (26 June 2003), available: <<http://www.tc.gc.ca/mediaroom/releases/atl/2003/03-A007e.htm>> (retrieved 10 November 2008). See also *Guidelines for Vessel Traffic Services*, IMO Assembly Res. A.857(20) (27 November 1997);

Roseway Basin. Again with the conservation needs of the North Atlantic Right Whale in mind, in 2007 Canada proposed to the IMO that the Roseway Basin, located off southeastern Nova Scotia, be designated as a seasonal area to be avoided (ATBA).⁹⁷ The proposal was adopted by the IMO's MSC in October 2007 for ships 300 GT or more and takes effect from June 1st to December 31st each year.⁹⁸

On a related point, Canada has often used the powers under the *Navigable Waters Protection Act* to have sunken vessels and wrecks removed where they pose hazards to navigation or even constitute a threat to the marine environment. Although Canada is not yet a party to the recently adopted Nairobi International Convention on the Removal of Wrecks, 2007, it has been urged to do so to enable Transport Canada to undertake the removal of derelict vessels.⁹⁹ Transport Canada proposes to amend the Act to implement the operational elements of the Convention.

17.6.2. Vessel-Source Pollution

17.6.2.1. Regime for Pollution Offences

Canada's approach to the regulation of marine pollution has been aptly summarised as follows: "Canada has created its marine environmental legislation through a series of uncoordinated statutes, each attempting to put an end to intentional marine pollution. Overlapping offences is unnecessary and useless."¹⁰⁰ This is indeed the situation in Canada—an extensive system of

and generally, *Ships' Routing*, 9th ed. (London: IMO, 2008), IX/2. On the US side, see the Reporting Systems for Protection of Endangered North Atlantic Right Whales in Sea Areas off the North-Eastern and South-Eastern Coasts of the United States. Id., G/I/18-1-3.

⁹⁷ Transport Canada, "Canada's New Government is Vigilant in the Protection of Endangered North Atlantic Right Whales," *News Release*, No. A 008/07 (10 October 2007), available: <<http://www.tc.gc.ca/mediaroom/releases/atl/2007/07-a008e.htm>> (retrieved 10 November 2008). *IMO Ships' Routing*, n. 96 above, II/1.

⁹⁸ Id. See also IMO, *Guidelines for Vessel Traffic Services*, n. 96 above.

⁹⁹ House of Commons, *Consideration of Proposed Amendments to the Navigable Waters Protection Act*, Report of the Standing Committee on Transport, Infrastructure and Communities (June 2008), available: <<http://www2.parl.gc.ca/HousePublications/Publication.aspx?DocId=3566517&Language=E&Mode=1&Parl=39&Ses=2>> (retrieved 10 November 2008).

¹⁰⁰ J. O'Connor, "The Enforcement of Marine Pollution Legislation in Canada" (Paper presented to the New Direction in Maritime Law 2006 Conference, 16 June 2006) (unpublished).

statutes that establish overlapping sanctions legitimated by several statutes and for what amounts to the same offence (see Annex below). Moreover, there has been a consequent and not unexpected overlap, if not duplication, of institutional responsibilities among the various federal departments concerned. The EU, unlike Canada, has a single Ship Source Pollution Directive (2005/35/EC) to be implemented by all Member States. Nevertheless, there are similar underlying concerns in both systems regarding the criminalisation of seafarers and corporate and vicarious liability.

Canada has been regulating vessel-source pollution utilising criminal and civil law tools ever since its implementation of OILPOL.¹⁰¹ In 1971 and 1984, comprehensive marine pollution provisions, including higher penalties, were added to the *Canada Shipping Act*.¹⁰² The *Canada Shipping Act, 2001* is the principal statute now implementing international conventions addressing vessel-source pollution to which Canada is a party, such as MARPOL 73/78,¹⁰³ whereas civil liability and compensation are addressed by the *Marine Liability Act*, which is discussed below. The *Canada Shipping Act, 2001* provides for summary conviction procedures with substantial penalties for the most serious contraventions, such as illegal discharge of pollutant, failure to have or to implement oil pollution prevention or emergency plans, or failure to obey instructions resulting from a discharge. Less serious offences, such as failure to have response, emergency or prevention plans on site or failure to provide

¹⁰¹ The *Canada Shipping Act* was amended in 1956 to give effect to the OILPOL Convention. 4 & 5 Eliz. II, c. 34 (Can). The Minister of Transport was authorised to draft regulations giving effect to the Convention and to “prevent pollution by oil from ships of any mainland, minor or other waters of Canada.” Such regulations were adopted in 1960: *Oil Pollution Prevention Regulations*, SOR 60-70, adopted 24 February 1960. Offenders were punished with a fine of up to CAD500 or imprisonment up to 6 months, or both. CSA 1956, s. 495A.

¹⁰² *House of Commons Debates 1970*, Vol. I, at 519 (Donald Jamieson (Minister of Transport)). Among the various amendments, the fines for illegal discharge and failure to report a discharge were increased to CAD100,000 to make crews and masters “more conscious of their responsibilities” to the environment. Prior to that, the maximum fines that could be imposed on the master, owner or person responsible for the unlawful spillage of oil from a vessel was CAD5,000 (Source: *Oil Pollution Prevention Regulations*, s. 5; *Garbage Pollution Prevention Regulations*, s. 4; *Pollutant Substances Regulations*, s.4). Imprisonment penalties were removed from the section without any apparent explanation. The fines were increased again in 1984 to CAD200,000 and to CAD250,000. Bill C-75, an *Act to Amend the Canada Shipping Act and the Arctic Waters Pollution Prevention Act*. *House of Commons Debates 1983–84*, pp. 14263-5.

¹⁰³ *Regulations for the Prevention of Pollution from Ships and for Dangerous Chemicals* (SOR/2007-86), implementing MARPOL Annex I, II, IV, V and VI, the *Code for the Construction and Equipment of Ships Carrying Dangerous Chemicals in Bulk*, 1971 (BCH Code), the *International Code for the Construction and Equipment of Ships Carrying Dangerous Chemicals in Bulk* (IBC Code), and the AFS Convention, n. 47 above, in all Canadian waters although stricter requirements are often required for inland waters.

information when requested, may result in lower fines.¹⁰⁴ These provisions were greatly influenced by consultations with the shipping industry, so that all but one of the stated offences were made subject to summary conviction.¹⁰⁵ Since 2004, Transport Canada has overall responsibility for enforcement of the pollution prevention provisions, while DFO is responsible for pollution response provisions.

Despite the apparent stringent pollution provisions, ongoing illegal discharges of oily ballast and waste engine room oil in Canada's EEZ in the Atlantic resulted in significant seabird mortality. The federal response to this problem was Bill C-15 amending the *Migratory Birds Convention Act* and the *Environmental Protection Act*. Bill C-15 was enacted to protect migratory birds and prevent oil pollution discharges from vessels by "expanding the zone where [Canada] can operate, bringing in tougher penalties and ensuring better protection for [Canadian] officers in the field."¹⁰⁶ The legislation was triggered by the perceived failure of the enforcement regime following the *Tecum Sea* incident. The *Tecum Sea* was observed trailing an oil slick, but charges against the vessel and master were dropped after several legal gaps were identified and a turf war between the various federal departments with related mandates could not be resolved.¹⁰⁷ During parliamentary deliberations, it was further noted that it was essential to extend Canadian law to its EEZ and to bring its sanctions in line with those imposed by courts in the United States because the vast majority of vessels were simply transiting the Canadian EEZ while trading to or from that country.¹⁰⁸ Because this trade did not include port entry in Canada, there

¹⁰⁴ Penalties for serious offences are up to CAD1 million in fines or 18 months imprisonment, or both, other offences are subject to fines of up to CAD100,000 or 1 year imprisonment, or both. CSA 2001, n. 34 above, ss.183–184, 187–188.

¹⁰⁵ The only exception is found in s. 253(1), intentionally or recklessly causing a disaster that results in the loss of life or serious damage to the environment, for which the guilty person may be liable on conviction on indictment to a fine (without maximum limits) or to imprisonment up to five years, or both. CSA 2001, n. 34 above, s. 253(1).

¹⁰⁶ *Bill C-15 an Act to amend the Migratory Birds Convention Act, 1994, and the Canadian Environmental Protection Act Discussion* (Standing Committee on Environment and Sustainable Development (ENVI) Evidence, 4 November 2004), available: <<http://cmte.parl.gc.ca/cmte/CommitteePublication.aspx?SourceId=125178#T1020>> (retrieved 10 November 2008), per Hon. Stephan Dion (Minister of Environment), p. 1035.

¹⁰⁷ *Id.*, p. 1040 per Mr. Bryon Wilfert (M.P.) The members also highlighted the need for an adequate enforcement budget, in particular Mr. Nathan Cullen (M.P.) stated that: "I want to put the fear of God into some of these captains so that they know there's a good chance they're going to be inspected," because these enforcement difficulties apparently resulted in a culture within the shipping community that "if you're going to spill, you spill in Canada, because (a) they won't find you, and (b) if they do find you, they won't fine you." *Id.*, p. 1055.

¹⁰⁸ *Id.*, p. 1055, per Trevor Swerdfager (Director General, Canadian Wildlife Service, Environmental Conservation Service, Department of the Environment).

was a perceived gap in the exercise of port state and coastal state enforcement. The federal government justified the tougher sanctions in the interest of conformity with the contemporary shipping business, change of the risk-benefit assessment of polluting, and harmonisation of sanctions with those imposed in the United States to ensure that polluters no longer enjoy safe haven.¹⁰⁹

Political will ensured that the proposed legislation passed, but concerns were expressed. The role of Environment Canada as the lead agency was clarified. The power of arrest, entry, search and seizure, detention, and direction of movement to vessels in the Canadian EEZ was extended.¹¹⁰ Tougher sanctions were introduced and new penalties for tampering with or destruction of records were added to penalties for discharges, all to deter shipowners and operators from discharging pollutants in Canadian waters.¹¹¹ There were issues of consistency with MARPOL commitments. At the same time, Courts were provided with sentencing guidelines.¹¹² The bill contained hasty and vague drafting and could have given better consideration to the problem of legislative and institutional overlaps in Canada's vessel-source pollution regime.

Most significantly, strict and vicarious liability provisions applicable to masters and chief engineers, owners, operators, or directors of the corporate owner, with imprisonment as penalty, was legislated.¹¹³ The hope was that these measures would encourage whistle-blowing and strengthen the evidentiary base for the prosecution of offences. The new criminal offences

¹⁰⁹ In a subsequent declaration, the Minister of Environment added: "The European Union is preparing legislation that will have about the same effect as Bill C-15. We are going in the same direction according to international law and international morality." Hon. Stephan Dion, "Announcing the proclamation of the *Migratory Birds Convention Act* and the *Canadian Environmental Protection Act* as Amended by Bill C-15" (St. John's Newfoundland, 25 June 2005), available: <http://www.ec.gc.ca/media_archive/minister/speeches/2005/050625_s_e.htm> (retrieved 10 November 2008).

¹¹⁰ MBCA, n. 72 above, s. 2.1 and 18.3.

¹¹¹ The MBCA now provides for convictions on indictment a maximum fine of CAD1 million and, if the vessel is over 5000 DWT a minimum of CAD500,000, and imprisonment for up to three years, or both, for vessels caught depositing or permitting harmful substances to be deposited, whether accidental or intentionally, regardless of amount, in areas frequented by migratory birds. The same punishment is applicable for the destruction or alteration of the vessel's records. The only defence available is that of due diligence. MBCA, n. 72 above, s. 13(1.1), 13(1.11), 13(1.8).

¹¹² *Id.*, s. 13(4.1).

¹¹³ *Id.*, s. 5.4-5.5 and 13(1.6)-13(1.7). Under the MBCA, the accused must establish that he took all reasonable care to avoid the commission of the offence by others on board the vessel; such vicarious strict liability is unprecedented in Canadian law. S. Kirby, "The Criminalization of Seafarers Involved in Marine Pollution Incidents" (2008) (unpublished), p. 24. Corporate liability is found in the proposed amendments of the EU Ship Source Pollution Directive (2005/35/EC).

could potentially infringe on the human rights of seafarers, who are invariably more visible than the shipowners. However, no such convictions have as yet occurred.¹¹⁴ While much has been said about the rising trend of criminalisation of seafarers in Canada, it would appear that seafarers have been faced with the prospect of criminal liability for such offences since the inception of marine pollution regulation. Although there was a brief period during the 1970s in which shipping interests succeeded in removing the possibility of imprisonment for pollution offences, the victory was only brief, and perhaps the only remaining example of such legislation is found in the Arctic Waters Pollution Prevention Act (AWPPA).

Vessel-source pollution offences are also established and enforced under other statutes. Contemporaneous and parallel amendments to the *Canadian Environmental Protection Act*, 1999 establish similar sanctions for the disposal or incineration of polluting substances at sea, import or export of pollutants for disposal at sea, and the loading of a substance onto a ship for disposal at sea, unless done with a permit.¹¹⁵ As mentioned earlier, vessel-source pollution prosecutions may also be pursued under the *Fisheries Act*, implementation responsibility for which rests with DFO, and enforcement with Environment Canada. The Act prohibits “throwing prejudicial or deleterious substances overboard” or depositing such substances in fish habitats.¹¹⁶ It also establishes a duty to report an incident of pollution and to take measures to minimise the effects.¹¹⁷ Tough sanctions similar to those under the AWPPA and CEPA are imposed, possibly because of the socio-economic significance of fisheries for the Canadian economy. The *Canada National Marine Conservation Areas Act*,¹¹⁸ provides similar offences and sanctions for discharges in conservation

¹¹⁴ Kirby, *id.*, p. 25, citing pers. comm. with James Martin, Federal Department of Justice (20 May 2008).

¹¹⁵ CEPA, n. 69 above, Part VIII, Div. 3 – Disposal at Sea and s. 272. In addition, CEPA contains a broad prohibition against intentional or reckless damage to the environment (causing a disaster) and risk of death or harm to person, contravention of which may be punished on indictment by a fine without maximum limits and/or up to five years imprisonment or on summary conviction with a fine up to CAD300,000 or imprisonment up to six months, or both. CEPA, s. 274(1).

¹¹⁶ A contravention may be punished on indictment by a fine up to CAD1 million, in the case of a first offence and in the case of subsequent offences to the same fine plus imprisonment for up to three years. If the offence is prosecuted on summary conviction, first time offenders may be punished by a fine up to CAD300,000 and subsequently by fine or imprisonment up to six months or both.

¹¹⁷ Failure to do so may be punished on summary conviction by a fine up to CAD200,000 for a first offence and fine plus imprisonment up to six months for subsequent offences.

¹¹⁸ *Canada National Marine Conservation Areas Act*, S.C. 2002, c. 18 [hereinafter NMCA].

areas.¹¹⁹ Discharges in Arctic waters are enforced by Transport Canada by virtue of the *Arctic Waters Pollution Prevention Act* and the *Arctic Shipping Pollution Prevention Regulations*.¹²⁰ *Inter alia*, the AWPPA prohibits all waste disposal into Arctic waters and permits the removal or destruction of any vessel, cargo, or bunkers when a serious pollution discharge occurs.¹²¹ Curiously, and inconsistently, the AWPPA marine pollution sanctions appear to be less severe than those under the *Canada Shipping Act, 2001*, the *Migratory Birds Convention Act*, and *Canadian Environment Protection Act*.¹²² This situation is inconsistent with the particular needs and difficulties of protecting the sensitive Arctic marine environment. Consistent, if not tougher sanctions, are likely justifiable to enhance deterrence and heighten vessel operational standards in a remote region where pollution response and monitoring are extremely difficult, at best.

It is appropriate to enquire to what extent this legislative activity has managed to harmonise overlapping statutes addressing vessel-source pollution and equally overlapping mandates of multiple federal departments. Although the *Canada Shipping Act, 2001* streamlined the prosecution of offences by providing only for summary conviction offences, that new and innovative effort was not carried through to the *Fisheries Act*, Bill C-15, and the *National Marine Conservation Areas Act*. The latter two continue to provide for prosecution by indictment or summary conviction. Despite serious concerns in the shipping and legal community about Bill C-15's vicarious strict liability offences and stiff sanctions, in practice most oil pollution offences have been prosecuted by Transport Canada under the *Canada Shipping Act, 2001* or the *Fisheries Act*, rather than under the *Migratory Birds Convention Act* or the *Canadian Environmental Protection Act*.¹²³ Since 1996, Environment Canada

¹¹⁹ This Act punishes anyone who disposes of pollutant substances in a marine conservation area; offenders may be punished by indictment to a fine up to CAD500,000 and on summary conviction to a fine of up to CAD100,000. NMCA, id., s. 24(1).

¹²⁰ *Arctic Shipping Pollution Prevention Regulations*, C.R.C., c. 354.

¹²¹ It also permits seizure and forfeiture of ship and equipment in cases of pollution offences. AWPPA, n. 55 above, s. 23 et seq.

¹²² The AWPPA provides for summary conviction offences punishable by a fine of up to CAD500,000 if the offender is an individual and CAD100,000 if the offender is a ship. Id., s. 18.

¹²³ Marine Pollution Prevention, "Successful Prosecutions - Marine Pollution Prevention (2000-2007)" (June 2007), available: <http://www.marinepollution-pollutionmaritime.gc.ca/eng/succes_pros/prosecutions/menu.htm> (retrieved 10 November 2008) [hereinafter *Successful Prosecutions*]. See also statistics published by Environment Canada, Enforcement Branch, "National Statistics, Legal Activities Report, and Annual Reports for CEPA and FA," available: <<http://www.ec.gc.ca/alef-ewe/default.asp?lang=En&n=5C63F879-1>> (retrieved 10 November 2008) [hereinafter Environment Canada, "Statistics"].

has charged only five vessels under the *Migratory Birds Convention Act*.¹²⁴ Of these, only one was convicted under that Act.¹²⁵ In the other cases, federal prosecutors preferred to proceed under the *Canada Shipping Act, 2001* for various reasons.¹²⁶ Further, to date only one master has been charged and fined for an oil pollution offence under the *Canada Shipping Act, 2001*.¹²⁷ Imprisonment has not been applied. Considering the political fanfare accompanying Bill C-15, in hindsight it appears that the principal effect has been to “send a message” to the shipping community and to assuage public concern. Government wanted to be seen to be “getting tough on polluters.” However, the significance of the Bill C-15 amendments should not be underestimated. The enhanced sanctions therein accompany the practice of Canadian courts to progressively increase the fines assessed for pollution incidents and orders to pay contributions into the Environmental Damages Fund.¹²⁸

¹²⁴ These were: *Elm*, *Brandenburg*, *Atlantic Cartier*, *Donau Ore*, and *Sandviken*. F. Wiese, *Seabirds and Atlantic Canada’s Ship-Source Oil Pollution: Impacts, Trends, and Solutions* (World Wildlife Fund, 2002), p. 23.

¹²⁵ The M/V *Donau Ore*. A fine of CAD30,500 was paid after the owners pleaded guilty. Environment Canada, “Government of Canada announces successful prosecution of marine oil polluter,” *News Release* (21 March 2001), available: <<http://www.ns.ec.gc.ca/press/01-03-21.html>> (retrieved 10 November 2008). It will be noted that this conviction precedes the enactment of Bill C-15. Similarly, there appear to be no prosecutions for disposal at sea or ocean dumping offences under CEPA, and only one Environmental Protection Compliance Order (EPCO) issued. Environment Canada, “Statistics,” n. 123 above at CEPA 1999 for Fiscal Year 2004–2005. See also letter from Chuck Brumwell (Environment Canada, MGP Review Manager) to Paula Pacholek (7 November 2006) regarding Environment Canada’s Response to the Joint Review Panel’s Information Request JRP_R5_10, available: <http://www.ngps.nt.ca/Upload/Intervenors/Environment%20Canada/061107_EC%20IR%20R%20response%205%2010.pdf> (retrieved 10 November 2008).

¹²⁶ Wiese, n. 124 above.

¹²⁷ *Successful Prosecutions*, n. 123 above. Prosecution of F/V *Hime Maru* and its Master for Oil Record Book violations. See also Transport Canada, “Precedent Set as Marine Polluter Ordered to Pay Substantial Penalty,” *News Release* No. A001/05 (14 February 2005), available: <<http://www.tc.gc.ca/mediaroom/releases/atl/2005/05-a001e.htm>> (retrieved 10 November 2008).

¹²⁸ *Successful Prosecutions*, id. See, e.g., most recent incidents with respect to the jack-up oil rig *Rowan Gorilla VI* (prosecuted March 2007, CAD70,000 fine imposed, CAD35,000 going to EDF), the M/V *Point Valiant* (prosecuted November 8, 2007, CAD18,000 fine imposed, CAD10,000 going to the EDF) and the M/V *Cicero* (prosecuted April 17, 2008, CAD15,000 fine imposed, CAD10,000 were paid in the EDF). The EDF adds a restorative component to vessel-source pollution sanctions.

17.6.2.2. Places of Refuge for Ships in Need of Assistance

The international custom of granting refuge to ships in distress has been recognised in Canada at least since the 18th century.¹²⁹ Canadian courts have enforced the international custom in a domestic context at least from the last quarter of the 19th century.¹³⁰ In more recent times, ships in distress have been permitted to enter a Canadian port as a place of refuge only after their threatening condition was stabilised.¹³¹ This practice is consistent with that of other maritime states. While on the one hand recognising the humanitarian right of a ship in need of assistance to enter a place of refuge, Canada also takes the steps necessary to protect its interests, which may also include directing the ship to a particular location or possibly, in rare situations, to refuse admission. Canada supported efforts in the IMO to develop and adopt the 2003 Guidelines on Places of Refuge for Ships in Need of Assistance as an attempt to standardise international practice and the use of a risk assessment framework.¹³² Following the adoption of the IMO Guidelines, Canada embarked on a lengthy process to develop the National Places of Refuge Contingency Plan (PORCP), which was finalised in 2007.¹³³ Overall, the adoption of the PORCP in Canada was a relatively straightforward, non-contentious task, unlike the EU where public concern has delayed the adoption of a further directive in the Erika III package addressing this issue. The purpose of the PORCP is “to establish a national framework and approach which, with associated regional measures, will provide for an effective and efficient response to requests from ships in need of assistance seeking a place of refuge.” Based on the IMO Guidelines,

¹²⁹ *Treaty of Amity, Commerce and Navigation between His Britannick Majesty and the United States of America*, London, 19 November 1794, *Parry*, Vol. 52 (1969), Article 23, p. 243. For a historical assessment of the custom, see: A. Chircop, “Ships in Distress, Environmental Threats to Coastal States, and Places of Refuge: New Directions for an *Ancien Regime*?” *Ocean Development and International Law* 33, no. 2 (2002): 207–226, p. 208; and by the same author, “The Customary Law of Refuge for Ships in Distress,” in A. Chircop and O. Linden, eds, *Places of Refuge for Ships: Emerging Environmental Concerns of a Maritime Custom* (Leiden: Nijhoff, 2005), pp. 161–229.

¹³⁰ *Canada (Attorney-General) v. MacDonell*, (1883), 1 Ex. C. R. 99; *Canada v. Valiant (The)* (1914), 15 Ex. C. R. 392; *May (The) v. Canada*, [1931] S. C. R. 374; *Queen City (The) v. Canada*, [1931] S.C. R. 387; *Canada (Attorney-General) v. Natalie S. (The)*, [1932] Ex. C. R. 155; *Rex v. Flahaut*, [1935] 2 D.L.R. 685.

¹³¹ The *Eastern Power* (leaking oil, 2000) and the *M/V Kitano* (fire onboard, 2001) entered ports of refuge in Atlantic Canada in such circumstances. “Canada to let leaking oil tanker in Newfoundland,” CBC News Update, 9 December 2000; “Ship ‘safe’ to enter harbour,” *Halifax Chronicle Herald*, 24 March 2001.

¹³² *Guidelines on Places of Refuge for Ships in Need of Assistance*, IMO Assembly Resolution A.949(23), adopted on 5 December 2003, IMO Doc. A 23/RES.949, 5 March 2004.

¹³³ Transport Canada, *National Places of Refuge Contingency Plan (PORCP)* (3 July 2007).

but contextualised for Canada, the PORCP aims at promoting a consistent approach to a national response plan for Canada's oceans. By identifying the responsible authority for providing assistance, Canada also appears to have implemented an IMO resolution accompanying the Guidelines concerning maritime assistance services.¹³⁴ PORCP has been prepared by Transport Canada and within it the regional Marine Safety directors are expected to engage in a thorough and balanced risk assessment exercise as a basis for a timely decision on providing safe assistance to such ships, refuge as may be appropriate, and any related conditions.

17.6.2.3. Pollution Liability and Compensation Regime

Canada has long been a party to the CLC and IOPCF conventions, and has recently become a party to the LLMC. Canada is not yet a party to HNS and Bunkers, but neither convention is yet in force. Under Canadian law, a shipowner who is not covered by the CLC Convention (e.g., he is flying the flag of a non-party) is entitled to claim limitation of liability under the LLMC. This is similar to other jurisdictions. However, the two most significant aspects of Canada's pollution liability and compensation regime, and a significant departure from the practice of EU Member States, are (1) standing arrangements with response organisations and (2) Canada's long-standing Ship-Source Oil Pollution Fund (SOPF).

In its attempt to implement the polluter pays principle in relation to accidental oil pollution, Canada introduced a system of private responders across the country who would be equipped and certified as institutions with whom persons trading in oil in Canadian waters would be required to enter into a standing arrangement.¹³⁵ The idea is that private response organisations would take on much of the response work of the Canadian Coast Guard, for a fee, and be available to respond promptly. They would operate under the authority of the master of the vessel that needs such assistance. Response organisations are entitled to claim their intervention costs as described further below.

¹³⁴ *Maritime Assistance Services*, IMO Assembly Resolution A.950, adopted on 5 December 2003, IMO Doc. A 23/Res.950, 26 February 2004.

¹³⁵ CSA 2001, n. 34 above, ss. 167–171. See further *Response Organizations and Oil Handling Facilities Regulations*, SOR/95-405; Transport Canada, *Response Organizations Standards*, TP 12401 (Transport Canada, 1995), available: <<http://www.tc.gc.ca/marinesafety/tp/TP12401/menu.htm>> (retrieved 10 November 2008). See generally, Transport Canada, *Environmental Response Systems: Managing Canada's Marine Oil Spill Preparedness and Response Regime*, TP 14471 (Transport Canada, 2006), available: <<http://www.tc.gc.ca/marinesafety/TP/TP14471/menu.htm>> (retrieved 10 November 2008).

Originally established in 1973 as the Marine Pollution Claims Fund in response to the *Arrow* casualty, the SOPF was launched in 1989 and is probably the first compensation fund for marine oil pollution damage that is separate from, but complements, the international liability and compensation regime.¹³⁶ The SOPF interweaves with the CLC and IOPCF regimes, and to a lesser extent with the LLMC, which are implemented through the *Marine Liability Act* and regulations.¹³⁷ The shipowner remains the first line of liability within the strict liability limits based on tonnage of the ship set out in the CLC, with the second line of liability consisting of the cargo-owners share in the form of the IOPCF, liability under which is also governed by the principle of strict liability.¹³⁸ In a suit for compensation, the directors of the IOPCF and SOPF are joined to the suit by law.

The SOPF interacts with this combined regime in a number of ways. First, the SOPF is responsible for the imported oil contribution calls which are at the basis of the IOPCF. This is in contrast to the other IOPCF state parties, who have legislated direct contributions from qualifying major oil importers in their jurisdictions.¹³⁹ Second, the SOPF covers a wider range of spills than the international regime. Any ship qualifies (not just tankers), the oil covered is not restricted to persistent oils, and the polluting oil does not need to be carried as cargo. CLC is limited to cargo, bunker oil, and slops. Third, the claims covered are similar to the CLC and IOPCF, such as oil pollution damage, and cleanup costs (including reasonable preventive measures, actually incurred). Pollution damage and cleanup where the ship's identity is not established, such as mystery spills are covered, unlike the CLC and IOPCF. Anticipatory and remedial expenses are covered.¹⁴⁰ Economic loss claims are also covered, but

¹³⁶ K. A. MacInnis, "The Canadian SSOPF Fund and Environmental Damage Assessment (EDA) in Canada," in F. Maes, ed., *Marine Resource Damage Assessment: Liability and Compensation for Environmental Damage* (Dordrecht: Springer, 2005), pp. 67–84.

¹³⁷ *Marine Liability Regulations*, SOR/2002-307 (8 August 2002).

¹³⁸ The only conduct that bars limitation is a "Personal act or omission of the owner, committed with the intent to cause the oil pollution damage or recklessly and with knowledge that the oil pollution damage would probably result." CLC, n. 51 above, and *Marine Liability Act*, n. 35 above. The "owner" includes shipowner, ship operator, and person who has possession or control of ship.

¹³⁹ Since 1989, the SOPF has contributed over CAD42 million in calls to the IOPCF. Ship-Source Oil Pollution Fund (SOPF), *The Administrator's Annual Report 2006–2007* (Ottawa: SOPF, 2007), p. i.

¹⁴⁰ Costs and expenses incurred by the Minister of Fisheries and Oceans, response organisation, any other person in Canada "in respect of measures to prevent, repair, remedy or minimise oil pollution damage from the ship, including measures taken in anticipation of a discharge of oil from that ship, to the extent that the measures taken and the costs and expenses are reasonable, and for any loss or damage caused by such measures," and costs and expenses of the Minister or any person directed to take action or otherwise. *Marine Liability Act*, n. 35 above, s. 51.

they are limited to those connected with loss of income from fisheries (including sport fishing, and workers involved in handling and processing), aquaculture, and subsistence hunting in Canada. This is significantly narrower than the CLC and IOPCF parameters. In any case, claimants must show that they have no other right of recovery under any other law, and relational economic loss is not covered.¹⁴¹ Fourth, the SOPF is a fund of both first and last resort for Canadian claimants. Canadian claimants, except response organisations, may file a claim against the SOPF in an administrative procedure, so that they avoid the cumbersome judicial procedure of a suit against the shipowner and the IOPCF. The SOPF would then be subrogated into their claim against the shipowner and the IOPCF. Empowered as a commissioner under the *Inquiries Act*,¹⁴² the SOPF Administrator will investigate and assess all claims, and in practice rarely grants the entire amount claimed. The Administrator will make an offer to the claimant. If the claimant is dissatisfied, s/he will still have the right to appeal the Administrator's decision to the Federal Court.

Originally, the SOPF consisted of the receipts from a legally imposed levy of CAD 45.61 cents per metric ton of imported or exported oil in Canada. However, this levy was discontinued in 1976 as it was thought sufficient funds had accumulated to cover the claims that could arise. Although the idea of re-introducing the levy has surfaced from time to time, it has not been re-established. The SOPF has remained self-sufficient and has thus been able to pay off claims from its own growth. At the end of March 2008, the SOPF accumulated surplus stood at CAD376,425,567, with CAD152,110,416 being available for all claims from one major spill. This amount is significant when it is considered that it complements the CLC and IOPCF amounts. Thus a major spill that would necessitate combined compensation efforts would have CAD495,257,000 for claims. However, it is possible these funds might not be sufficient for a *Prestige* type scenario, and consequently it has been proposed that Canada should join the 2003 IOPC Protocol.¹⁴³ Cleanup costs in the cases of *Prestige* and the earlier *Exxon Valdez* exceeded USD2 billion each; a *Prestige* scenario in Canada has been estimated at USD1.5 billion. Under the 2003 protocol, combined CLC and IOPCF compensation amounts would be in

¹⁴¹ This is similar in all three funds, based on the pragmatic rule and principle of remoteness. See *Landcatch v. IOPC Fund*, 1999 SLT 1208 (Court of Session: Inner House (Second Division)).

¹⁴² *Inquiries Act*, R.S.C. 1985, c. I-11.

¹⁴³ Transport Canada, *Maritime Law Reform Discussion Paper*, TP 14370E (May 2005), available: <<http://www.tc.gc.ca/pol/en/Report/tp14370/menu.htm>> (retrieved 10 November 2008), p. 14.

the region of CAD1.3 billion, thus bringing compensation levels closer to those of the United States' *Oil Pollution Act of 1990*.

In comparison, the EU does not have an EU-wide compensation fund, although it did obtain a higher level of compensation by successfully lobbying for the 2003 IOPCF Protocol. Nevertheless, some Member States, such as Finland, do have a separate national fund similar to the SOPF.

17.7. Conclusion

In general, and like EU Member States, Canada has pursued its shipping and marine environment protection interests within the global international maritime law regime serviced by IMO. Canada has been an active participant, frequently taking initiatives that have produced change in international regulations and standards. Canada has been able to do so even though it has not always embraced international conventions in a timely manner, if at all. However, its approach to the implementation of international standards has generally been solid: Canada has tended to legislate the amendments prior to or at the same time as it became a party to an international convention.

In a contemporary setting, Canadian policy and regulation making for maritime safety and marine pollution, frequently under pressure from stakeholders and lack of resources, strives to produce results in an efficient (cost-effective) manner. Current policies are ostensibly geared towards the achievement of outcomes. It may be too soon to determine the extent to which intended results are being achieved, as the expected outcomes speak to medium- to long-term change. For successful results-based management, it should be expected that institutional efforts should be proactive. The Canadian experience appears to be more a mixture of proactive and reactive policy, institutional, and regulatory responses. The *Canada Shipping Act, 2001* reform process can be seen as a proactive approach to legislative modernisation. Similarly, the PORCP constitutes proactive planning for the likelihood that ships in need of assistance that may pose environmental and other threats might require and be given refuge in Canadian waters. Differently, the complicated legislative response to oil pollution as a result of illegal discharges from ships is indicative of a reactive approach. It is arguable that reactive approaches are less efficient than well-thought-out proactive approaches which are spared development under the heat of the moment. In this example, the response to oil pollution has produced a fragmented, laborious, and inefficient approach to dealing with the problem.

A handicap Canadian maritime administration has laboured under since the 1990s is the split of maritime responsibilities between two departments, and

especially the migration of the Canadian Coast Guard from the core of the maritime administration. The issue of conflicting institutional cultures has not been resolved, and will likely not be resolved. The approach to maritime administration remains unnecessarily fragmented.

Annex. Ship Pollution Offences in Canada (all figures in CAD)

Statute & Regulations	Offences	Sanctions	Enforcement Responsibility
Oceans Act	<p>Carry out any activity — including depositing, discharging or dumping any substance, or causing any substance to be deposited, discharged or dumped — that is likely to result in the disturbance, damage, destruction or removal of a living marine organism or any part of its habitat.</p> <p>(various Marine Protected Areas Regulations, made pursuant to s. 35(3) <i>Oceans Act</i>)</p>	<p>Summary conviction: Fine max. \$100,000</p> <p>Indictment: Fine max. \$500,000 (s. 37)</p>	<p>DFO names “enforcement officers” (s. 39)</p>
CSA 2001	<p>Failure to: (s. 183(1))</p> <ul style="list-style-type: none"> • Have arrangement with RO • Have procedures, equipment and resources for immediate use • Implement oil pollution <i>prevention</i> plan • Implement oil pollution <i>emergency</i> plan • Have equipment and resources at the site • Implement response plan • Obey direction resulting from a discharge or possible discharge of a pollutant 	<p>Summary conviction: Fine max. \$1 million and/or imprisonment maximum 18 months (s. 183(2))</p>	<p>TC names “Pollution Prevention Officers” (s. 174)</p> <p>DFO names “Pollution Response Officers” (s. 174.1)</p>
	<p>Failure to: (s. 184(1))</p> <ul style="list-style-type: none"> • Have a declaration on board • Have a declaration on site • Have oil pollution prevention plan on site • Have oil pollution emergency plan on site • Have a response plan • Provide or arrange for training • Undertake and participate in activities to evaluate response plan • Provide information • Provide information officer considers appropriate • Obey directions given under s. 	<p>Summary conviction: Fine maximum \$100,000 and/or imprisonment maximum 1 year (s. 184(2))</p>	<p>TC & DFO s. 175.1(2) Powers of PRO re discharges</p>

	175(1)(b)(c)(d) or (e) and 176(1)(b)(c) or (d)		
	<ul style="list-style-type: none"> • Illegal discharge of pollutant (s. 187) • Failure to implement shipboard oil pollution emergency plan (s. 188) • Failure to proceed to a place and unload a pollutant (s. 189) • Contravention of the regulations made under this Part (s. 190) <p>Regulations include:</p> <ul style="list-style-type: none"> • Carrying of pollutants on board a vessel, whether as cargo or fuel • Control and prevention of pollution of the air by vessels • Reception facilities • Ballast water management • Design, construction, manufacture and maintenance of vessels or classes of vessels • Inspecting and testing • Obtaining certificates 	Summary conviction: <ul style="list-style-type: none"> • Fine maximum \$1 million and/or imprisonment maximum 18 months (s. 191) 	TC (s. 185)
	Failure to obey directions: (s. 189) <ul style="list-style-type: none"> • To provide information • To proceed by a specified route • To proceed to a place and remain there 	Summary conviction: <ul style="list-style-type: none"> • Fine maximum \$100,000 (s. 192) 	
	<ul style="list-style-type: none"> • Intentionally or recklessly causing a disaster that results in the loss of life or serious damage to the environment (s. 253(1)(a)) 	Indictment: <ul style="list-style-type: none"> • Fine (no limits) and/or imprisonment maximum 5 years (s. 53) 	
MBCA	<ul style="list-style-type: none"> • Depositing or permitting harmful substances to be deposited <p>in waters or an area frequented by migratory birds or in a place from which the substance may enter such waters or such an area (s. 5.1)</p>	Indictment: <ul style="list-style-type: none"> • Fine maximum \$1 million and/or imprisonment maximum 3 years • If vessel over 5000 DWT minimum fine \$500,000 <p>Summary conviction:</p>	EC: <ul style="list-style-type: none"> • Game Officers • RMCP (s. 6(1))

		<ul style="list-style-type: none"> • Fine max. \$300,000 and/or imprisonment maximum 6 months • If vessel over 5000 DWT minimum fine \$100,000 (ss. 13(1.1), (1.11)) 	
	<ul style="list-style-type: none"> • Destruction or alteration of records • Omissions or false entries in records. • Obstruction of Game Officers • Providing false or misleading information (s. 5.2) 	Ibid.	
FA	<ul style="list-style-type: none"> • Throwing prejudicial or deleterious substances (incl. ballast, coal ashes, stones) overboard <p>in any river, harbour or roadstead, or in any water where fishing is carried on (s. 36(1))</p>	<p>Indictment:</p> <ul style="list-style-type: none"> • First offence: fine maximum \$1 million • Subsequent offence: fine maximum \$1 million and/or imprisonment maximum 3 years <p>Summary conviction:</p> <ul style="list-style-type: none"> • First offence: fine maximum \$300,000 • Subsequent offence: fine maximum \$300,000 and/or imprisonment maximum 6 months (s. 40(2)) 	EC per MOU with DFO
	<ul style="list-style-type: none"> • Depositing or permitting deposit of deleterious substances of any type in water frequented by fish or in any place under any conditions where the deleterious substance or any other deleterious substance that results from the deposit of the deleterious substance may enter any such water (s. 36(3)) 	Ibid.	
	<ul style="list-style-type: none"> • Failure to report deposits of deleterious substances that occur “out of normal course of events” (s. 38(4)) 	<p>Summary conviction:</p> <ul style="list-style-type: none"> • First offence: fine max. \$200,000 • Subsequent offence, fine max. \$200,000 and/or imprisonment maximum 6 months (s. 40(3)) 	

	<ul style="list-style-type: none"> • Failure to take reasonable measures to mitigate or remedy adverse effects of deposits regarding s. 38(4) (s. 38(5)) 	Ibid.	
	<ul style="list-style-type: none"> • Failure to comply with direction of inspectors re deposit per s. 38(4) (s. 8(6)) 	Ibid.	
CEPA	<ul style="list-style-type: none"> • Disposal or incineration of substances at sea • Importation or exportation of a substance for disposal at sea • Loading of a substance onto a ship for disposal at sea unless done with a permit (Part VIII Div. 3 – Disposal at Sea) 	<p>Indictment:</p> <ul style="list-style-type: none"> • Fine maximum \$1 million and/or imprisonment maximum 3 years <p>Summary conviction:</p> <ul style="list-style-type: none"> • Fine maximum \$300,000 and/or imprisonment maximum 6 months (s. 272) 	EC
	<ul style="list-style-type: none"> • Failure to prepare and implement environmental emergency plans in respect of listed substances (s. 199) • Failure to report and minimise environmental emergency in respect of listed substances (s. 201) 	Ibid.	
	<ul style="list-style-type: none"> • Intentional or reckless damage to environment (causing disaster) (s. 274(1)(a)) 	<p>Indictment:</p> <ul style="list-style-type: none"> • Fine (no limit) and/or imprisonment maximum 5 years 	
NMCA	<ul style="list-style-type: none"> • Disposal of any substance (s. 14) <p>within a marine conservation area except as authorised under CEPA</p>	<p>Indictment:</p> <ul style="list-style-type: none"> • Fine maximum \$500,000 <p>Summary conviction:</p> <ul style="list-style-type: none"> • Fine maximum \$100,000 (s. 24(1)) 	Parks Canada Agency
	<ul style="list-style-type: none"> • Failure to mitigate degradation or injury caused by discharge or deposit of a substance capable of degrading the environment or injuring any animal, fish or plant within a marine conservation area (s. 29(1)) • Failure to comply with Minister's directions (s. 29(2)) 	Ibid. (s. 24(1))	
AWPPA	<ul style="list-style-type: none"> • Deposit of waste of any type (s. 4(1)) <p>in the Arctic waters or in any place on</p>	<p>Summary conviction:</p> <ul style="list-style-type: none"> • Individual: fine maximum \$5,000 	TC named Pollution Prevention

	the mainland or islands of the Canadian Arctic under any conditions where the waste or any other waste that results from the deposit of the waste may enter the Arctic waters	<ul style="list-style-type: none"> • Ship: fine maximum \$100,000 (s. 18) 	Officers per Governor in Council Authority Delegation Order (C.R.C., c. 355)
	<ul style="list-style-type: none"> • Failure to report deposit of waste or accident or other occurrence (s. 5(1)) • Failure to provide evidence of financial responsibility when required (s. 8(1)) 	Summary conviction: <ul style="list-style-type: none"> • Fine maximum \$25,000 (s. 19(1)) 	
	<ul style="list-style-type: none"> • Navigating in shipping safety control zone without meeting standards • Navigating in shipping safety control zone contrary to regulations • Failure to comply with reasonable directions given by pilot • Failure to comply with orders given by pollution prevention officer in response to deposits or threat of deposit • Failure to report deposit (master of ship) • Obstructing PPO or making false statements (master of ship) 	Summary conviction: <ul style="list-style-type: none"> • Fine maximum \$25,000 (s. 19(2)) 	
	<ul style="list-style-type: none"> • Obstructing or hindering a pollution prevention officer (other than master) • Making false or misleading statements to a pollution prevention officer (other than master) (s. 17) 	Summary conviction (no minimum/maximum)	

Key: CEPA, Canadian Environmental Protection Act; CSA, Canada Shipping Act, 2001; DFO, Department of Fisheries and Oceans; EC, Environment Canada; FA, Fisheries Act; MBCA, Migratory Birds Convention Act; MOU, memorandum of understanding; NMCA, Canada National Marine Conservation Areas Act; PRO, pollution response officer; PPO, pollution prevention officer; RO, response organisation; TC, Transport Canada.

Workshop Discussion Summary

Management of Maritime Safety and Vessel-Source Pollution

Susan Rolston

Moira McConnell, Marine & Environment Law Institute, Dalhousie University (making a joint presentation on behalf of Lotta Viikari, Faculty of Law, University of Lapland); Malgorzata Nesterowicz, European Maritime Safety Agency; and Aldo Chircop and Eric Machum, Marine & Environment Law Institute, Dalhousie University, presented their papers focussing on invasive species and ships' ballast water, and maritime safety and vessel-source pollution control from both Canadian and EU perspectives.

Discussion centered on the issue of transport of alien species, including the unaddressed issue of transport of introduction of alien species to land as a result of maritime transport (e.g., introduced beetles from wooden shipping platforms). It was agreed that we must also consider the issue from the perspective of what we are exporting, and identify means of reducing the transport of invasive species from this perspective.

Appendix

Rapporteur's Report

EU–Canada Relations in Law of the Sea and Ocean Governance Universitaire Stichting, Brussels, 4–5 December 2008

Prepared by Susan Rolston

The Workshop commenced with Opening Remarks by Prof. Erik Franckx, Department of International and European Law, Vrije Universiteit Brussel, who welcomed participants and provided a brief outline of the history of the project and the venue of the workshop, the Universitaire Stichting.

Timo Koivurova, Arctic Centre, University of Lapland, and David VanderZwaag, Marine & Environmental Law Institute, Dalhousie University, welcomed workshop participants making a short presentation on behalf of the Project Directors (including Erik Franckx; Erik Molenaar, Netherlands Institute of the Law of the Sea, Utrecht University; and Aldo Chircop, Marine & Environmental Law Institute, Dalhousie University). Timo Koivurova provided background information on the rationale for the project, focussing on the lessons to be learned from the implementation of the European Union's Integrated Maritime Policy and Canada's Ocean Policy. David VanderZwaag suggested a framework for the workshop based on a comparison of the challenges in implementing both of these policies, critical review of the presentations, and collaborative opportunities for European and Canadian researchers to work together to develop a common vision in law of the sea and ocean governance. They also thanked the workshop organisers and participants for their efforts and the European Commission for their financial support of the project and workshop.

Session One: Ocean Governance and Maritime Policy Making

The "Challenges to Ocean Policy Making" paper was presented in three parts: Erik Franckx on "National Ocean Policies: The General Framework"; Timo Koivurova on "Integrated Maritime Policy of the EU: Evaluation from the International, Canadian and EU Perspectives" and David VanderZwaag on

“Oceans Policy: A Canadian Case Study” (with Camille Mageau and Susan Farlinger).

Erik Franckx reviewed the findings of the International Oceanographic Commission report entitled “National Ocean Policy: The Basic Texts from Australia, Brazil, Canada, China, Colombia, Japan, Norway, Portugal, Russian Federation, United States of America” (Paris: IOC, 2007). National ocean policies adopted by these states since 1982 are diverse in form but generally have sustainability as their cornerstone.

Timo Koivurova provided a comparative perspective on EU–Canada approaches to ocean policy. A pioneer, Canada established its legal framework in 1996 and its strategic Oceans Action Plan in 2005. The EU has more recently adopted its Integrated Maritime Plan after a long policy-making process. Both approaches offer substantive similarities in regard to institutional arrangements, underlying principles, transparency, and participation, and offer flexible implementation mechanisms. Challenges in implementing the European Integrated Management Plan include its lack of a single legal basis (Member States must adopt their own laws) and potential coordination problems with the Marine Strategy Framework Directive (Member States must have national plans in place by 2010). In the long-term, there is a clear need to enhance educational opportunities for ocean managers.

David VanderZwaag outlined several lessons that can be learned from implementation of Canada’s *Oceans Act* and National Oceans Strategy. Although Canada has moved beyond a narrow focus on fisheries management, integrated coastal and ocean planning efforts are still in the early stages with only five large ocean management areas chosen as pilots for integrated planning and only seven marine protected areas established. The federal system of Canada has offered special challenges in achieving integrated coastal and ocean planning, as has limited funding for implementing policy. The key principles guiding integrated management are clearly set out. However, scientific understanding of marine ecosystems remains limited and the coastal land’s impact on oceans has not yet been fully addressed.

Nicole Schäfer, DG Mare, European Commission, outlined the maritime spatial planning (MSP) process implemented by the European Union. Responding to uncoordinated and competitive activities and uses on European coasts and seas, the EU adopted a MSP process to map maritime activities building on the ecosystem approach. Different from the Integrated Management Planning process, the MSP process adopts an oceans management approach and covers all maritime sectors. Within the process, Member States will adopt a national approach (to date only Germany has developed legally-binding maritime spatial plans, excluding fisheries). Regional approaches will be adopted as necessary. The Roadmap recently adopted by the European

Commission identifies ten key principles for MSP in the EU. The Roadmap seeks to facilitate development of MSP in Member States, encourage MSP implementation at the national and regional levels, and stimulate debate on development of a common approach to MSP in Europe. In 2009, the Commission will hold a series of workshops with Member States to discuss these key principles, launch cooperative pilot projects, and issue a progress report.

Erik Molenaar presented the Arctic Ocean governance paper (written together with Timo Koivurova and David VanderZwaag) which addresses the rights, interests and obligations of Canada and the EU in the Arctic region, the role of the Arctic Council, and recent developments in Arctic governance and future directions. Although not an Arctic littoral state like Canada, the EU retains jurisdiction in the region through flag state and port state interests. In the EU, there is a distribution of competence between the European Commission and the Member States. Canada has had a pioneering role in Arctic governance, with the introduction of the *Arctic Waters Pollution Prevention Act* in 1970. The Arctic Council provides a high level platform for cooperation on projects to protect the Arctic marine environment. Its broad mandate excludes in practice several topics, including fisheries and marine mammals. Canada, the European Commission and EU Member States have played an active role in the Council, and the European Commission is seeking observer status at the Council. Recent initiatives in the United States (regarding management of fish stocks in the Arctic Ocean) and the EU (Parliamentary resolution of 9 October 2008 and Commission Communication of 20 November 2008), and adoption of the Ilulissat Declaration by the five Arctic Ocean coastal states point to new interest in Arctic Ocean governance. Adjustments to existing regional agreements such as the NEAFC Convention and the OSPAR Convention, among others, are options for future changes to the Arctic oceans governance framework.

Fernando Garces de los Fayos, DDG2 RELEX/Arctic and Black Sea Cooperation, European Commission, provided commentary on the EU's and European Commission's interests in the Arctic. Although not a littoral state, the EU has been a long-standing participant in the Arctic Council and a significant funder of scientific research in the Arctic. There are clear political interests that reinforce this activity by the Commission, e.g., climate change, fisheries and rights of indigenous peoples, and recent initiatives such as the Integrated Maritime Policy, that suggest a need for increased involvement in Arctic oceans governance mechanisms. However, the EU is not interested in reinventing the UN Convention on the Law of the Sea by adopting a regional treaty to govern the Arctic Ocean.

Several issues were raised in the discussion following the presentations. The legal authority of the EU to achieve integrated oceans management was discussed in the context of MSP. The Marine Strategy Framework Directive (June 2008) aims to enhance the quality of the marine environment by 2020; MSP is one tool to achieving this goal. Although the Commission does not take an integrated approach across all marine areas in Europe, the MSP process provides cross-cutting principles across diverse marine areas that will facilitate integrated oceans management. With regards to the Arctic, participants argued that EU interest in the Arctic region went well beyond climate change and environmental protection. Internationalisation of Arctic issues enhances the EU's interest in ensuring balanced responses by existing regional organisations. However, the EU must ensure that it has the moral authority to participate in Arctic Ocean governance. Its failures to manage fisheries have raised a potential obstacle to its expanded participation. It was noted, however, that increased EU participation in Arctic issues should not be interpreted as a threat to other states in the region.

Session Two: Ocean Energy Resources

Maria Pettersson, Department of Social Science, Luleå University of Technology, and Meinhard Doelle, Marine & Environmental Law Institute, Dalhousie University, offered perspectives on ocean renewable energy in the EU and Canada respectively.

Maria Pettersson outlined the legal aspects of implementation of renewable energy policy as part of the broader EU competence in energy matters. Over time, it is possible that Member States' choice of legal instruments or planning regimes might hinder development of renewable energy resources. Nonetheless, marine renewables hold immense potential to meet the EU energy policy goals of combating environmental degradation and energy supply volatility.

Meinhard Doelle presented a case study of the strategic environmental assessment (SEA) process for tidal energy development in the Bay of Fundy, Canada. After reviewing the context of tidal energy in the Bay, he outlined the goals and structure of the SEA process and reviewed its key recommendations. The use of this process suggests that Canada and Nova Scotia are moving beyond a project focus in assessing the environmental impact of marine activities. The case study revealed the need for an early start of a SEA process prior to introduction of government regulation, that stakeholder involvement

and their capacity is critical to the success of a SEA process, and that the design of a SEA process can feed into regional planning and other processes.

Jerome Davis, Department of Political Science, Dalhousie University, used the Melville Island Project in the Sverdrup Basin in the Canadian Arctic as an example of the potential for development and diversification of natural gas resources in the EU. The proven reserves in the Basin are extensive and relatively close to existing LNG ports in Europe. Their development potential depends on the cost of the ships used for transport and the rate of transfer possible through Greenland. As an option for the EU, the Melville Island Project must also be considered in light of the natural gas reserves found on the eastern Canadian/Greenland continental shelf, resource and ocean management planning processes in both Nunavut and Greenland, and provisions of NAFTA (Article 60) which oblige Canada to maintain exports to the United States, thereby limiting opportunities to divert production to the EU.

Giordano Rigon, DG Energy and Transport, European Commission, commented upon EU energy policy. At present, the Council has endorsed an energy policy that calls for a 20% reduction of greenhouse gas emissions, a 20% increase in energy efficiency, and a 20% increase in renewable sources by 2020. The continued reliance on oil and gas resources means that both diversification of supply and indigenous resource development are critical. Arctic resource development, particularly those within 200 nautical miles of the coast, with appropriate environmental protection standards, is a particularly important source to consider. Renewable energy resources, particularly tidal and wave, in offshore marine areas must be developed in tandem with maritime policy to ensure adequate environmental protection and integrated economic development.

Much of the discussion focussed on the moral argument that states should not invest or develop Arctic oil and gas resources because of the environmental costs (climate change) of their exploitation and use. It was noted, however, that the Melville Island Project would provide relatively inexpensive natural gas compared to other projects elsewhere and that there is limited environmental impact in transporting LNG as the carriers use natural gas for propulsion and would not cause oil pollution in the event of an accident. It was also noted that there is an equity question that must be considered as the relatively poor coastal communities in the Arctic are looking to exploit these resources to develop economically. In some cases, Arctic coastal residents see climate change as opening new opportunities for their communities. Regulations developed under OSPAR might serve as a model for development of Arctic offshore oil and gas resources.

Session Three: Maritime Security Issues

Kamrul Hossain, Arctic Centre, University of Lapland, and Hugh Kindred, Marine & Environmental Law Institute, Dalhousie University, compared the existing maritime security initiatives in the European Union and Canada, examining both the multilateral platform and the unilateral initiatives of the United States adopted since September 2001. The most important program internationally is IMO's International Ship and Port Security (ISPS) Code adopted under Chapter 11 of SOLAS. It includes mandatory measures for ship identification and and port security as well as recommendatory guidelines for their establishment and operation. The Code sets out three levels of security for ports, ships (both passenger and cargo) and mobile offshore drilling units. Ships must install a Ship Security Alert System and obtain an International Ship Security Certificate. Additional security measures are required under the Suppression of Unlawful Acts against the Safety of Maritime Navigation (SUA) Convention, the World Customs Organization's SAFE Framework Cargo guidelines, the ILO convention regarding seafarers' identity documents (No. C185), and the International Standards Organization's Standards for Freight Containers. Maritime security initiatives by the United States, in particular the *Maritime Transportation Security Act 2002* and the *Security and Accountability for Every (SAFE) Port Act 2006*, implement the ISPS Code in US law and also respond to a particular concern for threats to cargo with the Cargo Security Initiative (CSI) and the Secure Freight Initiative (SFI), which require advance notification and possible scanning of containers and freight respectively in a foreign port.

Both Canada and the EU apply the provisions of the ISPS Code relating to ships and ports with the EU extending its application to domestic ferries and Canada applying it to "non-SOLAS" (smaller) vessels. Likewise, both apply the SUA Convention and are moving towards implementation of its amendments of 2005 as well as ILO Convention No. C185. In addition, both are working with the IMO to establish a LRIT marine surveillance system. Three ports in Canada and the 23 in the EU accept unilateral extension of US cargo initiatives. Both meet the requirements of the CSI with Canada implementing additional measures, e.g., reciprocal recognition of ship security documentation and parallel cargo security programs (PIP & C-TPAT). With regard to the SAFE Port Act, the European Union has objected to the US target of 100% scanning of containerised cargoes citing the likely costs, delays and impracticality of such a target. Canada has not spoken on this issue. Overall, these maritime security measures provide a system of documentary screening and cargo scanning processes that is characterised by duplication of ship, cargo and

documentary checks on a single voyage resulting in waste and delay. This is an issue that is not being addressed; both Canada and the European Union should discuss it.

Adam Stepien, Arctic Centre, University of Lapland, and Hugh Williamson, Marine Affairs Programme, Dalhousie University, discussed the issue of illegal immigration by sea to the EU and Canada respectively, focussing on maritime security response approaches.

Adam Stepien, outlined the nature of illegal immigration by sea to the EU, which is primarily through the western and central Mediterranean and the Atlantic Ocean between Africa and the Canary Islands. Policy initiatives seek to distinguish between asylum seekers and illegal immigrants, offering the necessary protection to those seeking asylum in the EU and against those who are trafficking in humans. The legal policy framework adopted by the EU focuses on five priority areas: identification of immigration routes; cooperation with third countries; effective operational structures for coordination between Member States; identification of the best technologies; and legal instruments. Under the UN Law of the Sea Convention, the EU is obliged to rescue persons in distress at sea, however, the maritime zones established under the Convention complicate jurisdictional mandates with Member States. Although asylum and illegal immigration have been under the jurisdiction of the EU since 1999, border control remains the responsibility of Member States. Existing vessel surveillance systems to monitor shipping and fisheries have also been used to monitor illegal immigration, as have naval surveillance agencies and systems. FRONTEX is the primary EU agency involved in operational and research in this area, with responsibilities for assisting Member States with joint operations and border patrols. A proposed European Surveillance System for Borders, EUROSUR, will be operational in 2010.

Hugh Williamson outlined the parameters of illegal immigration by sea to Canada. In contrast to the EU, Canada does not have a significant influx of illegal immigrants by sea, with isolated instances of illegal immigrant ships and a few container stowaways or ship jumpers (crew and cruise ship passengers using false identification). Since most illegal immigrants are heading to the United States, Canada and the United States have adopted numerous joint border and security initiatives although none are focussed on illegal migration by sea. Canadian maritime anti-illegal immigration activities are generally components of these larger programs and integrated into security initiatives. Information sharing is a primary component of these programs and initiatives although this is complicated by legal confidentiality prohibitions and multiple reporting requirements. A case study on the M/V *Cala Puebla* demonstrates the problems of dealing with potential illegal immigrants by sea into Canada.

Louise Head, DG MARE B-1, European Commission, commented on initiatives of the European Commission regarding piracy off the coast of Somalia. In light of the recent increase in piracy attacks, the international community has increased its efforts through NATO, IMO, at the national level (e.g., The Netherlands protection of the World Food Programme (WFP) in Somalia under NAVCO) , the EU (e.g., naval mission Atalanta under the European Security and Defence Policy), and the United Nations (e.g., recent resolutions on piracy and the 10–11 December 2008 conference on piracy in Nairobi). Operation Atalanta will be the first under the second pillar of the EU and will be launched on 15 December 2008. Under the command of the UK, ships and patrol aircraft will escort WFP shipments and contribute to preventing acts of piracy and attacking pirate vessels. Only four Member States have provisions to try pirates under national criminal law and they might not be willing to use it; neighbouring countries such as Kenya and Djibouti may request support to do so. Under the Instrument for Stability, which offers financial assistance to countries threatened or undergoing severe political instability or suffering from disasters, the EU is conducting an ongoing study on critical maritime routes in the Horn of African and Arabian Peninsula. A possible follow-up to this study might be a ReCAPP style operation focussing on coordination of information, documentation and control operations. The upcoming UN conference on piracy, comprised of a technical meeting and a ministerial meeting, is expected to lead to agreement on recommendations to control piracy, e.g., closing the land bases of pirates with the assistance of authorities in Puntland, increasing intelligence on local structures and re-engaging the Somali peace process.

Discussion following the presentations largely focussed on the issue of piracy. Fishing vessels are not being targeted by pirates despite the argument that illegal fishing is largely responsible for the economic situation encouraging pirate activity off Somalia. It was suggested that the international community could offer to provide fisheries surveillance capacity in the region, thereby reducing the threat of pirate activity. The problem of laying criminal charges against pirates was also raised. International law allows national laws to be put in place, but very few countries have chosen to do so. For example, Canada has broadened the definition of piracy in its law, but it is applicable only within waters over which it has national jurisdiction. The SUA Convention does not deal with piracy. There is no widely defined international crime of “piracy” and even if there were, it would need to be implemented nationally. Piracy on the high seas has resulted in significant changes in the availability of marine insurance and its cost; some ships are now going around the Cape of Good Hope despite the increased fuel costs and time delay in order to avoid the waters off Somalia.

Session Four: Management of Maritime Safety and Vessel-Source Pollution

Moira McConnell, Marine & Environment Law Institute, Dalhousie University, made a joint presentation on invasive species and ships' ballast water based on papers from a Canadian perspective and an EU perspective (Lotta Viikari, Faculty of Law, University of Lapland). A complex issue that spans many aspects of ocean governance, the problem of invasive species requires prevention and a precautionary approach for regulatory effectiveness. Given the multiple vectors for introduction of invasive marine species, a multi-dimensional response is necessary, i.e., ecological, economic, human health, technological, legal and institutional. Outlining the extent and nature of species transfer illustrates the regulatory system design challenges faced by decision makers nationally and internationally. Targeting the point of intervention (e.g., vessel, import and/or export country) and the level of implementation (national and/or international) raises issues of coordination and integration. Canada and the EU have approached the issue largely in the context of shipping (flag state) but have moved to a more scientific approach (biodiversity protection). Canada has established a series of coastal ballast water exchange/discharge areas; it remains to be seen whether the problem has merely been shifted from ports to coastal waters. Both have ocean management policies (e.g., Canada's *Oceans Act* and the EU Maritime Strategy) that would support preventative measures but there has been limited direct action and potentially conflicting regulations. In Canada, binding regulations replaced guidelines only in the last year. The EU faces the challenges posed by diverse biogeographic regions and a fragmented regulatory approach (there is no direct regulation of ballast water management). The European Maritime Safety Agency held its first workshop on this issue in 2008. Opportunities for EU-Canada cooperation include joint support for ratification of the IMO Ballast Water Convention and support for addressing the problem of hull fouling, joint research on shipping and coasting trade issues, risk assessment processes, and joint promotion of "healthy oceans" as the basis of effective integrated institutional and regulatory activity.

Maritime safety and vessel-source pollution control was addressed from a European perspective (Malgorzata Nesterowicz, European Maritime Safety Agency) and Canadian perspective (Aldo Chircop and Eric Machum, Marine & Environment Law Institute, Dalhousie University).

Malgorzata Nesterowicz outlined the development of the EU maritime policy noting that EU Member States retain competency in maritime safety but at a certain point, the EU assumes competency. Most of the Council directives and regulations implement maritime safety rules established by the IMO. In

response to the *Erika* tanker incident, the EU adopted a series of measures (Erika I – III) with more stringent rules with regard to port state control measures (Erika I), vessel traffic monitoring and information systems and establishment of the European Maritime Safety Agency (Erika II), and additional flag and port state, monitoring and information, accident investigation and liability requirements (proposed under Erika III).

Aldo Chircop set out the context of shipping in Canada noting that as a shipper nation, Canada is heavily influenced by actions of the United States. Unlike the EU, shipping is solely a federal responsibility in Canada. Many shipping services have been privatised, which influences the regulatory framework. The recently modernised *Canada Shipping Act* has streamlined regulations to promote compliance. Other general policies (e.g., Oceans Strategy and Management Accountability Framework) and Transport Canada policies and strategies (e.g., Marine Safety Strategic Plan) provide the policy and legal framework for maritime safety. Nonetheless, shipping is not a high federal government priority, shipping policy and regulation remain sectoral and much is duplicative, and there is no dedicated and fully integrated marine transportation policy that includes directions for marine safety and vessel-source pollution. Active in international shipping safety and environmental spheres, Canada has used international marine conservation tools creatively and effectively.

In comparing Canadian and EU approaches, the mutual support for IMO maritime safety measures was noted, although the EU and its Member States implement these measures separately. Likewise the split jurisdiction influences industry involvement in the regulation-making process. Both Canada and the EU delegate various maritime inspection and documentation activities to classification societies. With regards to environmental protection measures, the EU led the way in IMO on the phasing out of single-hull vessels, with Canada following its lead. Places of refuge is a more contentious issue in the EU than Canada, with a proposed amendment under consideration. The EU has identified four PSSAs while Canada has favoured specific SOLAS routing schemes and reporting measures to achieve particular marine conservation objectives. Both the EU and Canada have similar approaches to penal offences for pollution with Canada having several overlapping statutes. Beyond international pollution liability and compensation schemes, Canada has a long-standing national compensation fund (SOPF); there is no EU-wide compensation fund but some Member States have a national fund.

Discussion centered on the issue of transport of alien species, including the unaddressed issue of transport of introduction of alien species to land as a result of maritime transport (e.g., introduced beetles from wooden shipping platforms). We must also consider the issue from the perspective of what we

are exporting, and identify means of reducing the transport of invasive species from this perspective.

Session Five: Marine Biodiversity and Fisheries

David VanderZwaag presented the joint paper on Canada, the EU and Regional Fisheries Management in the North Atlantic (with Koen van den Bossche, Centre for International Law, Vrije Universiteit Brussel, and Erik Franckx, Department of International and European Law, Vrije Universiteit Brussel). Canada and EU relations in fisheries in this region are characterised by conflict (e.g., *Estai* incident). However, they cooperate in the implementation of international instruments such as the UN Fish Stocks Agreement and in regional fisheries management organisations such as NAFO and NEAFC, and have introduced measures to strengthen and modernise RFMOs such as NAFO. Canada and the EU have also worked cooperatively to protect vulnerable marine ecosystems from bottom fishing activities under the December 2006 UN Sustainable Fisheries Resolution, introducing a proposal for bringing NAFO into conformity with these commitments. NAFO and NEAFC face similar challenges in putting the precautionary approach into action, implementing the ecosystem approach, reaching consensus on allocation criteria, and with regards to compliance and enforcement.

Erik Franckx elaborated upon a 2001 FAO analysis of national fisheries enforcement systems (FAO Legislative Study 71), which includes both NAFO and NEAFC. Although much has changed since 2001, the best practices identified in the study remain relevant. Both NAFO and NEAFC face the challenges associated with accepting new members and the unavailability of catch allocation and ensuring that states do not opt to join and continue to fish unregulated. Outlining the strengths (e.g., observer schemes implemented, established port state measures in place, review processes undertaken) and weaknesses (e.g., opting out of objection procedures, no dispute settlement procedures, absent non-contracting party provisions), it is clear that both NAFO and NEAFC are generally in line with the UN Fish Stocks Agreement and the 1993 FAO Compliance Agreement. NAFO and NEAFC cooperate on straddling stocks between the two convention areas, have a common list of IUU vessels, and similar port state control schemes (although NEAFC is more advanced with NAFO only adopting similar measures in September 2008). In ensuring effective compliance and enforcement, it is still a question as to the appropriate role of science in allocation decisions.

Discussion following the fisheries presentations focussed on the role of science in fisheries management and comparisons between managing shipping and fisheries. With regard to science, it was suggested that fishers often mistrust the scientific advice provided by fisheries managers, arguing that scientists use measurement tools inappropriately. It was noted that in The Netherlands, fishers are placed aboard marine research vessels, enhancing the fishers' acceptance of the data. NAFO has adopted an interim exploratory fisheries protocol that involves the fishing industry in the identification process of vulnerable marine ecosystems, e.g., corals. Other collaborative processes between fishers and managers include among others the Eastern Scotian Shelf Integrated Management Process (ESSIM) and other large ocean management area processes in Canada.

In comparing the shipping and fisheries management regimes it was noted that the outcome based management regime (shipping) was generally more successful than the input/output model used for fisheries management. The fisheries management regime reflected the primacy that social and economic pressures place on managers in the international (FAO), national and regional (RFMOs) spheres. An exhaustible resource (unlike shipping), fishers will shift practices (e.g., opting for flags of convenience) in order to maintain fishing effort despite measures put in place by national governments (flag state measures). Unlike shipping, there are no enforcement measures against fishing vessels (e.g., liens on vessels), only measures directed to managing the fishing activity. Measures such as the FAO Compliance Agreement are directed to the flag state, but states are not joining, thus it is seen as ineffective.

Technologies for monitoring ships on the high seas (e.g., long range satellite tracking systems) are difficult to translate into monitoring of fishing activity as the mere presence of a fishing vessel is not sufficient information for managing fishing activity. Generally much more frequent reporting would be required to determine fishing activity patterns, particularly on the high seas. Such technologies often do not work well in the poor sea and weather conditions that fishing vessels regularly work in. Private/public air surveillance programmes such as those in place in Canada might be a cost effective alternative for fisheries, shipping and environmental surveillance patrols. Both NAFO and NEAFC have cooperated in enforcement and compliance initiatives, and the tuna RFMOs have had some success in managing their stocks. A black listing system (i.e., IUU vessels as well as transshipment and resupply vessels) has been efficient in closing ports to flag states that do not respond to RFMO management initiatives. FAO has identified criteria against flag states that do not enforce their flag duties. Some states, e.g., Norway, have developed their own black lists for "non-cooperating" states; the EU is expected to adopt such a measure in the future.

Finally, the EU and the RFMO review processes were discussed with the complication of needing Member State agreement on fisheries policy being noted. The EU fisheries policy will be reviewed in 2009.

Erik Molenaar, Netherlands Institute for the Law of the Sea, Utrecht University, and Phillip Saunders, Marine & Environmental Law Institute, Dalhousie University, made a joint presentation on governance of marine biodiversity in areas beyond national jurisdiction. Given the value of biological diversity to humans both now and in the future and the transboundary nature of these resources, we need to manage biodiversity both within areas of national jurisdiction and in areas beyond national jurisdiction. Currently, most international legal instruments are implemented at the global and regional levels through international organisations (e.g., IMO, RFMOs, OSPAR Commission). Various regional instruments manage target species and their habitats (e.g., CMS, NAMMCO), fisheries resources and marine environmental protection. Bilateral arrangements also exist. There are several gaps in the regulatory and governance regime, including geographical areas and substantive issues (e.g., lack of a regime for new and emerging activities, no default mechanism or authority, sectoral nature of governance, no legal requirement for ecosystem-based management).

With regard to management of bottom fisheries, RFMOs and the UN Fish Stocks Agreement offer protection to a limited number of species in a restricted geographic area. With the exception of CCAMLR, there is an unacceptable balance between regimes in these two areas. Within RFMOs, it is left to user states to make management decisions raising the issue of equity in allocation of fishing opportunity in areas beyond national jurisdiction. Other area-based management tools can be used to regulate bottom fisheries to protect biodiversity, including marine protected areas, PSSAs, and seamount measures adopted by NAFO and NEAFC. However, the use of such measures is not integrated under one management authority. Similar issues can arise in the EEZ as well as the UN Law of the Sea Convention, which does not explicitly deal with marine protected areas. With regard to integrated ecosystem-based management in areas beyond national jurisdiction, there is also no legally binding commitment or agreed legal definition and it remains difficult to identify who should take the lead in determining which tools to use. Cooperation between Canada and the EU on implementing existing international measures in areas beyond national jurisdiction adjacent to their respective national areas is limited. Consideration might be given to negotiating a new global legal instrument or expanding the role of existing instruments or bodies such as the Convention on Biological Diversity (CBD) or the International Seabed Authority (ISA) to protect biodiversity in areas beyond national jurisdiction.

G ael de Rotalier, DG Maritime Affairs and Fisheries, European Commission, spoke on the work the EU is undertaking in the framework of the CBD and the UN General Assembly Biodiversity in Areas Beyond National Jurisdiction Working Group. Credible measures need to be put in place to protect high seas biodiversity and planning, governance and legal issues need to be settled. The EU is calling for a new international agreement to operationalise biodiversity conservation and sustainable use in areas beyond national jurisdiction using the ecosystem and precautionary principles as default mechanisms. With regard to marine protected areas, criteria for the identification of areas that need to be protected have to be developed as must the applicable measures to be taken by competent organisations (e.g., IMO, RFMOs). The EU proposal has not been well received by many states, suggesting that high seas biodiversity is best protected through measures adopted through RFMOs (regarding fisheries) and the IMO (regarding shipping). Developing countries are particularly interested in genetic resources in areas beyond national jurisdiction, regarding them as part of the common heritage of humankind. Canada and the EU have had limited discussions on this matter. The EU has called for immediate action to promote an integrated approach in existing agreements and within the CBD.

Discussion following the presentations and commentary focussed on opportunities for further regime building, particularly outcome-based approaches useful for areas beyond national jurisdiction (e.g., targets for marine protected areas). Compliance must also be considered in any new regime, particularly the control of extractive industries, as well as the integration of new science findings into any new legal instrument in a timely manner. The opportunity for managing biodiversity through regulation of companies under national laws was seen as being limited to intellectual property aspects. It was suggested, however, that challenges remain in determining the boundaries between the international law of the sea (i.e., UN Law of the Sea Convention) and the international law relating to patents and intellectual property. Determining why companies would be interested in working in areas beyond national jurisdiction was also raised as opportunities in the area are generally considered to be speculative although they are perceived as being economically valuable. Any new integrated ocean management regime must deal with bioprospecting for marine genetic resources. Given the lack of a responsible international organisation, there was general discussion about prospects for moving the issue under an existing organisation (e.g., International Seabed Authority). However many states (e.g., the United States) are not interested in new institutions; regional management organisations might be a more appropriate mechanism (e.g., CCAMLR or UNEP Regional Seas models). Despite the perceived need for sectoral implementation of measures, it was

suggested that there is a need for an overarching international instrument that was negotiated with the full participation of developing states.

The Way Forward: Conference Summary and Discussion

The Workshop concluded with a brief wrap-up of the next steps and possible avenues for future collaboration that was led by Timo Koivurova and David VanderZwaag. Erik Franckx thanked local organising staff members as well as participants for their contributions. The draft papers circulated at the Workshop will be updated and published by the Arctic Centre in a book by June 2009. The summary of the discussion will be shared amongst the Workshop participants.

Priorities for research and future collaboration between EU and Canadian researchers included a workshop on Canada/EU approaches to biodiversity in areas beyond national jurisdiction and assessing opportunities for developing a common Canada/EU view on providing joint surveillance capacity-building and technical support for developing countries. The possibilities for cooperation in marine research between EU/Canadian researchers in the Arctic and marine spatial planning (modeled on the Canadian Ocean Management Research Network – OMRN, or the Australia Canada Ocean Research Network – ACORN) were also discussed. It was suggested that promoting an EU/Canada marine research network would provide a vehicle for increased networking, broaden the base for collaborative research in areas of mutual interest, and promote project development and implementation. It was noted that there will be another round of proposals called for in November 2009 by the EU mechanism that funded the current project.

Index

- Antarctic Treaty, 125, 132, 281, 456
- Aquaculture, 37, 38, 47, 48, 59, 60, 62, 65, 76, 85, 104, 193, 200–202, 213, 223, 433–434, 438, 457, 459–461, 464, 470, 475, 561
- Aquatic ecosystems, 443, 491, 504
- Aquatic species, 60, 70, 434, 457, 460, 475, 485, 491, 498–499, 505
- Arctic
- archipelago, 116–117, 232, 242, 245–246, 248, 251, 409
 - High Arctic, 227, 236, 416, 466
 - Ocean, 108–112, 122, 124–134, 137, 139–145, 147–148, 227, 230, 428, 573–574
 - treaty (proposed), 124–125, 146
- Arctic Council (AC), 3, 47, 63, 66, 75, 108, 118–133, 136–137, 147, 230–231, 573
- Arctic Contaminants Action Program (ACAP), 120
 - Arctic Environmental Protection Strategy (AEPS), 119–121, 123
 - Arctic Marine Shipping Assessment (AMSA), 132–134
 - Arctic Monitoring and Assessment Programme (AMAP), 119, 123
 - Conservation of Arctic Flora and Fauna (CAFF), 119
 - Emergency Prevention, Preparedness and Response (EPPR), 119
 - Protection of the Arctic Marine Environment (PAME), 63, 75, 119, 121–123, 139
- Areas beyond national jurisdiction (ABNJs), 30–31, 72, 131–132, 136, 144, 301, 347–348, 583–585
- Ballast water, 60, 64, 70–71, 433–444, 448–458, 462–470, 473–479, 482–505, 541, 565, 569, 579
- Belgium, 1, 11, 98, 104, 160, 163, 167, 168, 237, 492, 501, 521
- Benthic ecology, 177, 179
- Biodiversity, 4, 30–31, 37, 68–69, 71, 83, 108, 112, 131, 180, 202, 230, 301, 346–348, 433–434, 437, 439–440, 444–446, 448, 456, 459, 472, 482, 487–490, 504, 581, 583, 585–587
- Biofuels, 164, 189
- Biosecurity, 351, 434–435, 452
- Brazil, 11, 13–15, 237, 421, 572
- Cabotage, 510, 527, 532
- Canada
- Department of Fisheries and Oceans (DFO), 4, 26, 28, 32, 39, 43, 46, 49–50, 55–57, 59, 64, 69, 74, 77–79, 81–83, 243, 246, 414, 419, 421, 460–462, 464, 466–467, 470, 534, 543–544, 549–550, 553, 555, 564
 - Labrador (note that the full name of the province is Newfoundland and Labrador), 2, 65, 69, 71, 200, 241, 250, 421
 - Newfoundland, 2, 56, 58, 69, 71, 77, 200, 241, 250, 266, 268, 294, 411, 416, 421, 539, 549
 - Oceans Act, 2, 22, 24, 26, 28, 32, 35, 39–46, 50–51, 54–55, 58, 61, 64, 67, 69, 70, 76–77, 79–86, 91, 100, 118, 233, 409, 461, 470, 534, 539, 543, 564, 572, 579
 - Oceans Action Plan, 24, 26–31, 35, 40, 41, 49, 55, 57, 62–65, 68, 78–82, 85, 86, 461, 534, 572
 - Oceans Strategy, 2, 21, 24, 26–29, 32, 35, 40, 42–50, 54, 58, 59, 78, 79, 82, 86, 91, 536, 543, 572, 580
 - Nova Scotia, 2, 4, 56, 57, 65, 69, 77, 117, 191–195, 200–206, 210, 211, 214, 217, 220–224, 250, 257, 263, 384, 431, 441, 424, 539, 551, 574

- Nunavut, 135, 236, 242, 243–247, 249, 250, 256, 575
- provincial jurisdiction/regulations, 1–3, 33, 36, 38–39, 47, 54, 63, 64, 84–85, 193, 194, 199–206, 458, 460, 461
- Cargo, 108, 237, 342, 351–353, 355, 357–363, 366, 397, 373–376, 379, 380–386, 389, 397, 412, 415, 417, 435, 440–443, 455, 473, 510, 514, 520, 532, 548, 556, 560, 565, 576
- residues, 482–484, 512
- Catch allocation, 581
- total allowable catch (TAC), 140, 266–267, 270–272, 289–292, 301, 341
- bycatch, 290–293, 297–298
- Certification, 161, 164, 165, 176, 451, 452, 466, 481, 494, 518, 519, 546–548
- China, 11–16, 75, 91, 120, 141, 172, 361, 412, 429, 474, 572
- Classification societies (*society*), 452, 507, 513, 518–519, 532, 533, 546–547, 580
- Climate change, 90, 104, 107, 120, 123, 124, 128–129, 132, 141, 147, 152–154, 188, 207, 216–217, 229, 232, 233, 242, 252, 293, 345, 433, 444, 573–575
- Coast guard, 115, 135, 361, 377, 413–412, 418, 424–425, 462–464, 543–544, 547–549, 559, 562–563
- Conservation, 1, 3, 42–44, 51–57, 63, 64, 69, 76, 77, 92, 100, 108, 124, 195, 216, 265, 268, 271, 274, 278, 279–288, 294, 295, 297–306, 320, 338, 347, 448, 461, 487, 532, 539, 544, 549–551, 555, 556, 567, 580, 584
- conservation and management
- measures, 15, 76, 113, 269, 283–284, 299, 300, 304, 317, 321, 323, 329, 334, 339
- conservation and enforcement
- measures, 275, 303, 309–319, 341–343
- habitat, 51–54, 63, 71, 77, 178, 179, 196, 198, 295, 433, 456, 522, 550, 564
- Continental shelf, 33, 37, 42, 67, 110, 111, 117, 118, 128, 203, 232, 356, 575
- Convention on Biological Diversity (CBD), 31, 66, 68–72, 347, 433–437, 443, 445, 448, 452, 455–459, 462, 465, 468, 470, 478–479, 486, 488, 583–584
- Convention on the Protection of the Marine Environment of the North–East Atlantic (OSPAR), 108, 137, 138, 141–143, 291, 301, 375–376, 491, 492–496, 573, 575, 583
- Cross-border cooperation and consultation, 18, 98, 231, 232, 253
- Customs, 357, 358–362, 368–374, 378–380, 383, 398, 412, 414, 416, 421–424
- Decision-making process, 18, 21, 29, 136, 194
- EU, 90, 93, 508–509
- SEA, 219–224
- Decommissioning (of offshore and onshore installations), 184, 186–188, 196
- Denmark, 110, 111, 114, 117, 121, 129, 132, 133, 137, 166, 168–169, 240, 303, 304, 307, 322, 409, 494
- Development plans, 168, 244, 248
- Distress, 395, 397, 524, 525, 558, 577
- Ecoregion, 54–55
- Ecosystem approach, 29, 51, 84, 94, 102, 123, 133, 166, 273, 287, 293–295, 298, 299, 243, 485, 487, 500, 572, 581
- objectives, 45, 51, 52, 54, 63, 76
- ecosystem-based management, 15, 45, 51–54, 79, 102, 131, 293, 283
- Endangered species, 37, 71, 75, 85, 197–198, 202–203, 296, 457, 459, 550
- Energy
- consumption, 188,
- efficiency, 165, 252–253, 345, 575
- hydro electricity, 170
- policy (incl. EU), 67, 151–155, 159, 164–166, 207, 228–230, 252–253, 345, 574–576
- renewable (see also EU > Renewables Directive), 3, 38, 92, 93, 151–193, 204, 205, 210–218, 252, 345, 574,
- tidal, 38, 157, 175–176, 191–219, 222–224, 574–575

- Environmental assessment/ environmental impact assessment (EA/EIA), 58, 119, 126, 177, 193–197, 200, 201, 206–210, 218–221, 223, 249, 489, 539
 strategic environmental assessment (SEA), 151, 177–194, 191, 193, 205–225, 466, 488, 489, 574, 575
- Environmental protection (see also Conservation), 13, 38, 58, 64, 73, 77, 89, 113, 114, 118, 119, 134, 125, 133, 142, 152–125, 166, 188, 190, 230–232, 283, 286, 345, 364, 409, 414, 418, 437, 444, 449, 469, 482, 500, 501, 521, 539, 544, 549–550, 553–557, 568, 575, 580
- European Economic Area (EEA), 110, 112, 130, 132
- European Union
 Arctic policy, 3, 121, 129, 131, 135, 232, 247
 Biocides Directive, 483–485, 492
 Blue Book (Integrated Maritime Policy for the European Union), 3, 25–26, 90, 97, 129, 365, 368, 399
 Common Fisheries Policy (CFP), 28, 29, 93, 271, 276, 279, 286–288
 Council (of Ministers, of EU), 10, 12, 233, 266, 270, 272, 283, 385, 286, 290, 345, 389–395, 482, 508–516, 519–523, 528, 573, 575, 579
 European Council, 19, 25, 90, 164, 402
 DG Maritime and Fisheries (DG MARE), 4, 25, 26, 29, 129, 147
 European Commission, 4, 5, 89, 97, 98, 113, 121, 129, 147, 229, 242, 266, 283, 345, 347, 365, 371, 429, 488–491, 493, 498, 503, 504, 508–509, 518, 525, 526, 572–573, 575, 578, 584
 European Parliament, 131, 132, 156, 158, 159, 166, 482, 486, 508–510, 512–515, 517, 520, 522, 528
 Green Paper/s, 30, 89, 90, 233, 365, 366, 369
 Internal market, 155, 157, 166, 252
- Marine Strategy Framework Directive (MSFD), 19, 25–26, 32–33, 147, 365, 369, 572, 574
 Northern Dimension, 230–232, 252, 253, 587
 Renewables Directive I and II, 151, 152, 157–175, 188
 reporting mechanism, 157–159
- Exclusive economic zone (EEZ), 42, 67, 99, 101, 110, 115, 117, 118, 126, 168, 189, 280, 296, 416, 463, 522–523, 548, 553, 554, 583
- Exploration, 37, 108, 111, 112, 133, 154, 174, 175, 203, 210, 216, 227, 230, 234, 235, 241, 244, 245, 248
- Faroe Islands, 141, 137, 303, 305
- Finland, 110, 118, 121, 132, 323, 486, 494, 496
- Fisheries (fishing)
 illegal, unregulated and unreported fishing (IUU), 4, 68, 273, 295, 314, 317, 319, 329, 331, 332, 334, 336, 340, 342, 347, 581, 582
 management (see also RFMOs), 16, 53, 77, 85, 127, 286–288, 293, 298, 301, 340, 342, 342, 346, 572, 581, 582
 management plans (FMPs), 126
 fish stocks, 4, 37, 62, 126, 127, 138, 140, 141, 181, 266–268, 272, 280, 286, 341
 fishing vessels, 1, 9, 126, 285, 296, 312, 316, 319, 320, 323–332, 334, 339, 340, 346, 378, 389, 415, 419, 430, 521, 533, 550, 578, 582
- Flag of convenience, 314, 332, 395
- Food and Agriculture Organization of the United Nations (FAO), 10, 60, 72, 127, 137, 138, 139, 280, 282, 284, 285, 294, 307, 319–322, 339, 340, 343, 346, 347, 437, 438, 581, 582
 Committee on Fisheries (COFI), 127
- France, 121, 160, 169–170, 237, 303, 307, 398, 409, 440 470, 492, 501, 512, 518–522

- Germany, 98, 104, 121, 166, 205, 237, 238, 322, 384, 410, 475, 480, 481, 492, 494, 572
- Greenland, 37, 108, 110–112, 114, 117, 128, 129, 132, 133, 137, 232–242, 247, 248–255, 260, 266–270, 288, 290, 295, 303–305, 307, 322, 409, 575
- High seas (international waters), 1, 4, 30, 31, 66–68, 71, 82, 101, 111, 112, 131, 140–144, 269, 276, 278, 282, 285, 299, 316, 319, 320, 339, 346, 347, 351, 369, 394, 409, 430, 476, 522, 578, 582–584
- Hydrocarbons, 4, 37, 38, 58, 67, 77, 104, 108, 123, 200, 203, 223, 227–229, 232–247, 375–376, 539, 575
 - exploration, 37, 133, 136, 210, 245
 - natural gas (see also LNG), 157, 193, 227, 232–264, 345, 575
 - oil, 72, 73, 95, 114, 115, 134, 154, 188, 193, 227, 228, 234, 237, 241, 248–250, 345, 439, 441, 452, 473, 497, 507, 511, 512–514, 517, 519, 520, 526, 528, 529, 532, 540–541, 544, 547–549, 552, 553, 556–565, 575
 - reserves, 229, 233–236, 241, 242, 248, 575
- Hydrography, 42, 138, 413, 475, 543
- Ice cap, 107, 227
- Iceland, 75, 110, 119, 122, 128, 132, 137, 141, 231, 300, 303–305, 307, 322, 490, 492
- Ilulissat Declaration, 108, 128, 134, 573
- Immigration (illegal/irregular), 4, 387–402, 405–412, 415–418, 426, 427, 577
- Indigenous peoples, 2, 27, 37–43, 46–50, 54, 56, 57, 61–65, 75, 82–86, 119, 123, 147, 213, 230, 236, 242, 573
- Information sharing, 54, 65, 78, 395, 399, 401, 403, 406, 421–422, 577
- Integrated ocean management and governance (see also Ocean policy), 16, 19–29, 31, 33, 56, 91, 92, 98, 100, 129, 131, 133, 230, 348, 365, 470, 584
- Integrated coastal management (ICM), 16, 51, 84–85, 534
- Integrated coastal zone management (ICZM), 10, 13, 84–85, 98, 99, 103
- Intelligence, 354, 376, 400, 410, 414, 415–426, 429, 578
- Intergovernmental Oceanographic Commission (IOC), 11, 58, 95, 572
- Internal waters, 1, 101, 110, 116, 197, 236, 245, 246, 409, 447, 513
- International Convention on the Safety of Life at Sea (SOLAS), 354, 356, 366, 367, 373–374, 381, 385, 397, 442, 477, 540, 576, 580
- International Council for the Exploration of the Sea (ICES), 138, 266, 282
- International Maritime Organization (IMO), 2, 47, 72, 114, 128, 134, 347, 353–359, 366, 372–377, 481, 397, 459, 435, 437, 438, 445, 449–458, 462–463, 477–479, 482, 484, 490, 495, 499, 503, 511, 516, 519, 521, 524, 529, 535, 538–542, 545, 548–551, 558, 559, 562, 576, 578, 580, 583, 584
- International Seabed Authority (ISA), 348, 584
- International Ship and Port Facility Security (ISPS) Code, 352–356, 359, 360, 366–367, 373–385, 419, 576
- Invasive species, 21, 37, 68, 433, 434, 443–482, 485–488, 494–504, 569, 579, 580–581
- Ireland, 160, 170, 171, 231, 278, 492, 521
- Japan, 11–17, 141, 208, 267, 303, 307, 323, 361, 362, 438, 473, 572
- Land claim agreements, 39, 42, 64, 243, 244
- Land-based activities (protection from), 20, 64, 66, 74, 122
- Large marine ecosystems (LMEs), 22, 138, 139
- Large ocean management areas (LOMAs), 32, 47, 51, 52, 57, 61, 63, 78, 82, 83, 234, 236, 243, 246–250
- Liquefied natural gas (LNG) 232, 233, 235, 236–241, 243, 248, 250, 255, 259–264, 345, 575

- trade, 232, 236–238, 248–250, 260–261
- transit terminal, 241, 248, 261
- Mapping, 56, 57, 63, 96, 275, 295, 298, 300
- Marine environment, 10, 14, 21, 22, 24, 25, 29, 30, 32, 36, 40, 42, 43, 51, 64, 74–77, 84, 89, 90, 93, 95, 100–105, 108, 109, 112, 117–119, 122, 123, 133, 134, 147, 178, 274, 286, 298, 301, 445, 446, 448, 461, 475, 485, 491, 494, 504, 522, 543, 545, 551, 556, 562, 573, 574
- Marine protected areas (MPAs), 4, 22, 30–32, 39, 42, 43, 47, 54, 55, 57, 58, 61–65, 68–70, 72, 76, 81–84, 123, 131, 145, 347, 461, 549, 550, 564, 572, 583–584
- Marine resources, 29, 44, 58, 64, 102, 104, 105, 108, 133, 298, 299, 301
- Maritime boundaries, 37, 110, 138, 194, 387, 388, 392, 394, 401, 402, 405, 406, 408–409
- Maritime traffic, 374, 397, 473, 562
- Maritime transport, 21, 89, 93, 104, 260, 352, 360, 368, 369, 437, 443, 508, 510, 511, 515, 532–534, 569, 580
- Mexico, 66, 69, 237, 250, 379, 438, 430, 459
- Military, 3, 15, 104, 108, 118, 184, 185, 398, 415, 419
- Multilateral environmental agreements, 125, 145, 437, 445
- National jurisdiction, 110, 132–133, 140, 144, 319, 334, 405–406, 430, 449, 578, 593
- national regulation, 126, 452, 490, 499
- National ocean policies, 9–17, 21–23, 42, 82, 571, 572,
- Navigation, 1, 2, 38, 95, 108, 116, 117, 180, 181, 195, 224, 351, 356, 369, 394, 458, 464, 511, 522, 533, 540, 542, 543, 549–552, 576
- The Netherlands, 1, 98, 104, 121, 237, 346, 429, 578, 582
- Non-governmental organizations (NGO), 5, 61, 65, 71, 74, 124, 295, 341, 364
- Nordic Council, 124–125, 230–231
- Northwest Atlantic Fisheries Organization (NAFO), 1, 62, 265–270, 273, 275, 288–290, 293–298, 300, 302–304, 306–321, 323, 333, 341–344, 346, 347, 581–583
- North East Atlantic Fisheries Commission (NEAFC), 108, 109, 130, 137–143, 265, 266, 274, 279, 281–292, 298–301, 304–307, 314–316, 318, 321–342, 347, 573, 581–583
- North Pacific Fishery Management Council (NPFMC), 126
- North Pole, 108, 229–230, 301
- Norway, 11, 16, 98, 104, 110–111, 118, 121–122, 128, 132, 167, 228, 231, 237, 242, 252, 303, 305, 307, 322, 347, 474–476, 672, 682
- Ocean floor, 11, 110
- Ocean management / governance / policy (See also Integrated ocean management and governance), 2–5, 9, 11–28, 32, 33, 40, 42, 44, 47–58, 61, 68, 78–80, 82–85, 91, 100–101, 147, 299, 365, 534, 571–573, 575, 579
- Pipelines, 95, 108, 110, 112, 233, 236, 239, 241, 255, 258–259, 263
- Places of refuge, 507, 524–525, 532, 535, 558, 580
- Poland, 99, 121, 252, 253, 303, 322, 494, 501
- Polar Bear Treaty, 118
- Pollution
- control, 73, 507–509, 524–526, 535, 569, 579
 - damage, 526–528, 541, 560
 - liability, 532, 559, 580
 - offence, 557
 - prevention, 58, 60, 64, 73, 76, 79, 115, 135, 152, 423, 447, 452, 461, 483, 512, 513, 516, 536, 537, 539, 542–544, 548, 552–556, 564, 568, 573
 - vessel source, 4, 73, 134, 507, 508, 522, 531, 534, 537, 540, 551–557, 569, 579
- Port/ship security, 4, 352–355, 359–384, 409–414, 417, 419, 502, 507, 511, 558, 576

- Ports, 4, 31, 61, 123, 230, 236, 261, 263, 311, 314, 316, 330–331, 333, 336, 347, 416, 435, 436, 439, 441, 450–452, 466, 469, 478, 495, 500, 502, 511, 512, 517, 520, 522, 523, 528, 529, 537, 543, 548, 558
- Port state control, 112, 316, 321, 329–333, 335, 336, 339–343, 445, 447–455, 483, 501, 507, 512, 513, 515–517, 522–524, 528, 529, 554, 580
- Portugal, 11, 12, 14, 15, 23, 171, 172, 189, 237, 267, 282, 297, 322, 365, 370, 397–398, 438, 492, 501, 521, 572
- Precautionary principle, 15, 16, 29, 58, 45, 60, 61, 130, 286–287
- Regional fisheries (management)
 organizations (RFMOs) (see also Fisheries > management / management plans), 3, 47, 114, 137, 141, 144, 145, 265, 266, 274, 279–282, 301, 306, 307, 317, 318, 320, 334, 342–347, 581–583
- Research, 21, 40, 63, 64, 78, 91, 93, 100, 108, 111, 112, 117, 124, 126, 135, 136, 147, 152, 168, 171, 174–176, 188, 210–214, 216, 217, 223, 247, 282, 293, 294, 297–299, 302, 323, 346, 400, 449, 457–458, 462, 496, 579, 582
 networks, 48, 49, 61, 585
- Resource management, 39, 42, 64, 91, 133, 193, 213, 217, 218, 245
- Risk management, 355, 358, 359, 368, 371, 384–386, 537
- Russian Federation, 11–16, 75, 108, 111, 127, 129, 134, 137, 141–143, 228–232, 236, 237, 242, 252, 253, 267, 300, 303, 305, 307, 322, 494–496, 572
- Scotland, 18, 98, 177–187, 189, 219, 231
- Seabed, 11, 38, 56, 57, 64, 95, 110, 179–185, 192, 203, 227–229
 mapping, 57, 63
 resources, 245
- Seafarers, 352–353, 359–360, 374, 382, 442, 463, 512, 528, 553, 555, 586
- Sea-ice, 107, 229, 377
- Seascape, 108, 122–124, 180, 182
- Sector-by-sector approach, 14, 103, 362, 532, 578, 582–583
- Ships
 cruise, 38, 356, 377, 412, 417, 423, 577
 ferry, 417, 441, 512,
 passenger, 355, 366, 512, 517
 ship security (see port/ship security)
 tall, 377
 tankers, 239, 261, 507, 511, 512, 517, 560
 single-hull, 513, 519–520, 539, 547–548
- Shipowners, 355, 435, 515, 520, 526, 528, 533, 554, 555, 559–561
- Shipping
 coastal, 378
 containers (freight), 352, 353, 360–362, 371, 374, 376, 378, 383, 384, 385, 411, 412, 415, 417, 539, 576
- Soviet Union, 115, 118, 143
- Spain, 99, 121, 166, 173, 237, 267–270, 278–281, 388, 389, 393, 397, 311, 320, 438, 440, 474, 492, 501, 514, 521, 548
- Spatial planning, 15, 33, 89–99, 103–105, 572, 585
- Subsidiarity, 25, 27, 29, 97, 113, 364, 508
- Subsoil, 11, 110, 203
- Surveillance (maritime), 21, 32, 64, 76, 79, 93, 302, 313, 314, 323, 325, 326, 339, 346, 347, 368, 369, 377, 382, 387–390, 394–406, 414, 415, 419, 430, 514, 535, 550, 576–578, 582
 vessel tracking, 369, 382, 419
 vessel identification, 313, 331, 576
- Sustainable development, 10, 22, 25, 28–31, 37, 40, 41, 44, 45, 49, 50, 58, 69, 81–84, 86, 89, 99, 113, 119, 153, 207, 230, 534, 535
- Sustainable management, 15, 53, 89, 91, 92, 101, 102
- Sweden, 98, 110, 119–121, 124, 128, 132, 160, 163, 174, 231, 322, 478, 492, 494

Territorial sea/waters, 23, 42, 67, 99, 100, 101, 110, 117, 118, 168, 175, 197, 356, 394, 398, 447, 467, 522, 523
 Terrorism, 4, 351–358, 362, 368–371, 375–376, 379–382, 387, 389, 407, 420–421, 425
 Tourism, 21, 38, 61, 93, 95, 104, 108, 180, 182, 202, 212, 213, 475
 ecotourism, 37, 61
 Tradable green certificate (TGC), 160, 167, 168, 174–176
 Trade, 1, 3, 67, 119, 129, 207, 229, 250, 276, 352–362, 366, 368, 371, 372, 376–384, 412, 419, 435, 436, 441, 444, 457, 467–470, 473, 474, 476, 477, 480, 481, 492, 500, 507–508, 532, 533, 539, 547, 548, 553, 579
 Transshipment, 260, 263, 329
 United Kingdom (UK), 98, 104, 121, 160, 175–176, 362, 430, 522
 United Nations (UN), 31, 67, 69, 143, 144, 208, 274, 347, 356, 359, 395–396, 429, 452, 578
 United Nations Commission for the Limits of the Continental Shelf, 42, 67
 United Nations Conference on Environment and Development (Rio Conference), 9–10, 22, 30, 433
 United Nations Convention on the Law of the Sea 1982 (LOS Convention), 9, 11, 22, 23, 30, 36, 37, 42, 66–68, 73, 90, 91, 101, 102, 108–111, 115–118, 126, 130, 131, 137, 143–145, 183, 186, 194, 230, 273, 276, 351, 357, 376, 383, 384, 394, 396, 406, 409, 437, 444–449, 451–452, 455, 458, 459, 503, 523, 542
 United Nations Environment Programme (UNEP), 102, 124, 125, 348, 434, 435, 437, 452, 584
 United Nations Fish Stocks Agreement, 273, 274, 289, 303–307, 320–323, 349, 350, 581, 583
 United Nations Framework Convention on Climate Change (UNFCCC), 154–155
 United Nations Sustainable Fisheries Resolution, 273, 274, 581
 United States, 3, 11, 12, 15, 23, 28, 37, 58, 63, 66, 69, 91, 108, 109, 111, 115–119, 121, 126–128, 133, 139–143, 208, 231, 233, 234, 237–242, 249, 250, 263, 280, 281, 297, 307, 348, 352, 353, 360–363, 365, 368–374, 378–386, 407, 408–413, 416–418, 420, 424–426, 433, 441, 443, 450, 455, 458–466, 471–474, 486, 519, 532, 547, 548, 553, 554, 558, 562, 572–577, 580
 United States Congress, 12
 Water quality, 41, 184, 185, 459
 Weapons of mass destruction (WMD), 363
 World Customs Organisations, 352, 357, 576
 World Trade Organization (WTO), 1, 2, 501
 Zoning, 96, 97, 10