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Boleslaw Adam Boczek

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Global and Regional Approaches to the Protection and Preservation of the Marine Environment

*by Boleslaw Adam Boczek**

ABSTRACT

The study of global versus regional alternatives in organizing international relations has been traditionally associated with "land" regionalism. However, this choice has now acquired special relevance in its application to the management of the oceans. Both global and regional approaches have been utilized in protecting the marine environment. This study reviews and appraises the international legal and organizational dimensions of the two approaches and examines the position of the United Nations Convention on the Law of the Sea (1982) on the subject. Despite the progress already achieved in the global regulation of marine pollution, gaps in the coverage of some forms of pollution still remain. However, the trend seems to be toward marine regionalism which takes into account specific features and needs of a particular marine area. The international legal and organizational environmental protection network must be tightened, better coordinated and harmonized by establishing links between the global and regional arrangements and programs within the one region while not losing sight of the global dimension of the human environment.

I. INTRODUCTION

One of the fundamental issues confronting authoritative decision-makers in managing international problems is whether to adopt a global solution to a problem or a geographically more limited "regional" approach. Various theories of regionalism are well known to those interested in the fundamental organizational patterns of international relations. Traditionally, however, this theoretical conflict has been associated with land, rather than with oceans. Political scientists, motivated especially by developments in Western Europe, have developed various conceptual

* Professor of Political Science, Kent State University, Kent, Ohio; formerly advisor to the U.N. Economic Commission for Latin America; LL.M., S.J.D., Jagiellonian University, Krakow, Poland; Ph.D., Harvard University, Cambridge, Massachusetts.

frameworks and theories related to regionalism and land, which are familiar to students of international relations and international organization. However, as a result of rapid technological changes, economic pressures and political circumstances, management of the oceans has emerged as a vital task for many nations and the international community as a whole and the issue of the global versus regional alternative, or perhaps a balance between them, has acquired special relevance to the management of the sea and its resources. While the issue is not entirely new in the international practice of ocean law and policy, it is only recently that, as part of the debate on the future regime of the oceans, the regional approach to ocean management has been subjected to a more systematic theoretical scrutiny.¹ This study will examine the extent to which global and regional options have been utilized in international practice to protect the marine environment, and arrive at some generalizations which will be helpful in suggesting policy recommendations for the most appropriate regime of controlling marine pollution.

One important assumption which underlies this analysis is that a unilateral approach is inadequate for the regulation of marine pollution, although this approach may be necessary for enforcement purposes and in emergency situations. Unilateralism is objectionable on a number of grounds.² First, since the oceans are a commonly shared environment, any assumption of unilateral legislation may jeopardize the legitimate interests of other nations. Second, unilateral initiative may become a vehicle for a coastal state to expand its jurisdiction to include matters totally unrelated to the protection of the marine environment. Third, in the final analysis, only joint efforts can successfully cope with the environmental

¹ Pioneering work in conceptualizing "marine regionalism" has been done by Lewis M. Alexander, a geographer at the University of Rhode Island and cofounder of the Law of the Sea Institute which is now headquartered at the University of Hawaii. On marine regionalism, see Alexander, *Regionalism and the Law of the Sea: The Case of Semi-Enclosed Seas*, 2 OCEAN DEV. & INT'L L. 151-87 (1974); Alexander, *Regional Arrangements in the Oceans*, 71 AM. J. INT'L L. 84-109 (1977) [hereinafter cited as Alexander, *Regional Arrangements*]. The 11th Annual Conference of the Law of the Sea Institute was devoted to marine regionalism. See REGIONALIZATION IN THE LAW OF THE SEA (D. Johnston ed. 1978). Marine regionalism was the subject of a symposium at the Marine Affairs Program of the University of Rhode Island in 1979. See PROCEEDINGS OF THE SYMPOSIUM ON MARINE REGIONALISM (L. Juda ed. 1979). For a review of the theory and practice of marine regionalism as of 1978, with a rich bibliography, see Alexander, *Regional Co-operation in Marine Science* (Dec. 1978) (report prepared for the Inter-governmental Ocean Committee of UNESCO, U.N. Ocean Economics and Technology Office, and FAO). On regional tendencies in the law of the sea, see also Quéneudec, *Les tendances régionales dan le droit de la mer*, in RÉGIONALISME ET UNIVERSALISME DANS LE DROIT INTERNATIONAL CONTEMPORAIN 257-62 (1977).

² For a critical comparative analysis of the unilateral, regional and global options in regulating marine pollution, see Okidi, *Toward Regional Arrangements for Regulation of Marine Pollution: An Appraisal of Options*, 4 OCEAN DEV. & INT'L L. 1-25 (1977).

challenge. Finally, the protection of the marine environment is closely related to navigation, fishing and other marine activities which, as experience has shown, are of international concern and can be governed predictably and effectively only by international agreement.³ Consequently, an international approach to the protection of the marine environment is endorsed either explicitly or implicitly in all major international acts, such as the Stockholm Declaration of the United Nations Conference on the Human Environment of 1972⁴ and the Convention on the Law of the Sea produced by the Third United Nations Conference on the Law of the Sea (UNCLOS III) in 1982⁵ (hereinafter referred to as the UNCLOS Convention).

Following general comments concerning the nature and sources of marine pollution, this study will first survey and appraise the legal and organizational dimensions of existing global arrangements, including in particular the role of global international organizations which protect and preserve the marine environment. Next, the analysis will focus on regional protection and preservation efforts, including the rationale for the regional approach, the concept and types of marine regions, an inventory of marine regional arrangements for the protection of the environment and integrative and disintegrative forces affecting the viability of such arrangements. How the UNCLOS Convention approaches the issue under discussion is briefly examined in a subsequent section. This study in international marine policy and the law of the sea will conclude with an evaluation of the global-regional alternatives for controlling marine pollution and some policy recommendations.

II. MARINE POLLUTION

Over the past fifteen years a number of dramatic maritime disasters have made nations acutely aware of the urgent need to undertake concerted action in order to protect the marine environment against the hazards of pollution. The oceans, which cover about 70 percent of the planet, play a vital role in maintaining the global fundamental biological

³ *Id.* at 2-8. In appraising the unilateral option, Okidi uses the example of Canada's Arctic Waters Pollution Prevention Act, CAN. REV. STAT. ch. 2 (Supp. 1970) (asserting Canadian jurisdiction to control pollution in zones up to 100 nautical miles off Canada's Arctic coast). For the effects of this Canadian legislation in the decade following its enactment, see Newbury, *The International Environmental Law of the Sea: The Canadian Arctic Waters Pollution Prevention Act and its Effects*, 4 SUFFOLK TRANSNAT'L L.J. 139-61 (1980). See also McDotman, *National Legislation and Convention Obligations: Canadian Vessel-Source Pollution Law*, 7 MAR. POL'Y 302 (1983).

⁴ UN Doc. A/CONF. 48 (1972), reprinted in 11 I.L.M. 1416-69 (1972), with the Action Plan and Resolution on Institutional and Financial Arrangements.

⁵ United Nation Convention on the Law of the Sea, Oct. 7, 1982, UN Doc. A/Conf. 62/122, reprinted in 21 I.L.M. 1261 (1982) [hereinafter cited as UNCLOS Convention].

and ecological balance. Not only do the oceans supply a rich reservoir of protein, but also they supply oxygen upon which life on earth ultimately depends. Marine pollution is usually associated with dramatic shipping accidents, such as the *Torrey Canyon* (1967)⁶ and the *Amoco Cadiz* (1978)⁷ disasters, or oil blowouts in offshore drilling operations, such as the *Ekofisk* in the North Sea (1977),⁸ the *Ixtoc* (1979) off the Mexican Gulf coast⁹ and the oil spill in the Persian Gulf caused by the hostilities in the Iraqi-Iranian War.¹⁰ These oil-related cases of pollution receive the most attention because of the visibility of an oil spill, the threat they pose to marine life and public amenities and—in the case of vessel-source pollution—because of the international nature of the shipping industry. However, even though oil is a major source of marine pollution worldwide, it is not the only pollutant of the ocean environment.¹¹ What ex-

⁶ See the Report of the Liberian Board of Investigation, reprinted in 6 I.L.M. 480 (1967). See also Brown, *The Lessons of the Torrey Canyon*, 21 CURRENT LEGAL PROBS. 223 (1968); Utton, *Protective Measures and the Torrey Canyon*, 9 BRIT. COLUM. INDUS. & COM. L. REV. 613 (1968).

⁷ On this disaster off the French coast, see U.S. DEP'T OF COMMERCE & U.S. ENVIRONMENTAL PROTECTION AGENCY, *THE AMOCO CADIZ OIL SPILL: A PRELIMINARY SCIENTIFIC REPORT* (Aug. 1978). See also Martray, *Les leçons de la catastrophe de l'Amoco Cadiz*, 4 ENVTL. POL'Y & L. 172-76 (1978); Martray, *Premières conséquences du drame de l'Amoco Cadiz sur le droit de la mer et sur l'organisation de la lutte contre la pollution en France*, 4 ANNUAIRE DE DROIT MARITIME ET AÉRIEN 157-68 (1979); Nagel, *Parliamentary Action on the Amoco Cadiz*, 4 ENVTL. POL'Y & L. 167-69 (1978).

⁸ See Bollecker-Stern, *A propos de l'incident d'Ekofisk: problèmes posés par la pollution provoquée par les installations de production pétrolière off-shore*, 24 ANNUAIRE FRANÇAIS DE DROIT INTERNATIONAL 772-91 (1978); Wallenberg, *The Ekofisk Accident: Its Environmental and Political Implications*, 88 OECD OBSERVER 9-12 (1977). See also Birnie, *Did Failure in the North Sea Legal Regime Contribute to the Ekofisk Blowout?*, 4 OCEAN MGMT. 119-35 (1978).

⁹ See *Mexican Offshore Blow-Out Rivals Ekofisk*, 10 MARINE POLLUTION BULL. 215-16 (1979); Leonhard, *IXTOC I: A Test for the Emerging Concept of the Patrimonial Sea*, 17 SAN DIEGO L. REV. 617-27 (1980); Preston, *Domestic and International Liability for the Bay of Campeche Oil Spill*, 6 INT'L TRADE L.J. 55 (1981). See also *Blowout of the Mexican Oil Well IXTOC I: Hearings Before the House Comm. on Merchant Marine and Fisheries and Subcomm. on Water Resources of the Committee on Public Works and Transportation*, 96th Cong., 1st Sess. 1-363 (1980); *Campeche Oil Spill: Hearing Before the Joint Senate Comm. on Commerce, Science, and Transportation and Comm. on Energy and Natural Resources*, 96th Cong., 1st Sess. 1-237 (1980).

¹⁰ See N.Y. Times, Apr. 18, 1983, at A16, cols. 1-2. *Id.*, Apr. 12, 1983, at A3, cols. 1-3.

¹¹ There is abundant literature on the nature and kinds of marine pollution. For a social scientist a good comprehensive introduction to the problem is Schachter & Serwer, *Marine Pollution Problems and Remedies*, 67 AM. J. INT'L L. 84-112 (1971). For more detailed studies, see WHO PROTECTS THE OCEAN? (J. Hargrove ed. 1975); NATIONAL ACADEMY OF SCIENCES, *ASSESSING OCEAN POLLUTANTS* (1975); M. WALDICHUK, *GLOBAL MARINE POLLUTION: AN OVERVIEW* (1978); Abrams, *The Environmental Problem of the Oceans*, 5 ENVTL. AFF. 3-32 (1976); Hardy, *Definition and Forms of Marine Pollution*, in 3 NEW DIRECTIONS IN THE LAW OF THE SEA 73-78 (1973); Kindt, *Prolegomenon to Marine Pollution and the Law of the*

actly constitutes pollution is not agreed upon. The UNCLOS Convention, following the definition prepared by the United Nations Joint Group of Experts on the Scientific Aspects of Marine Pollution (GESAMP), defines pollution of the marine environment as "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."¹² The UNCLOS Convention further distinguishes six sources of marine pollution.¹³ The major threat to the oceans is pollution from land-based sources. These include municipal, industrial and agricultural wastes which reach the ocean from rivers, estuaries, pipelines and outfall structures.¹⁴ The second potential pollution source is offshore sea-bed activity, such as drilling for oil, which has created new hazards in recent decades when exploration and exploitation of offshore oil and gas resources has rapidly expanded throughout the world.¹⁵ Dumping, defined as "any deliberate disposal of wastes or other matter from vessels, aircraft, platforms or other man-made structures at sea,"¹⁶ either dispersed

Sea: An Overview of the Pollution Problem, 11 ENVTL. L. 67 (1980); Thacher & Meith-Avcin, *The Oceans: Health and Prognosis*, 1 OCEAN Y.B. 293-339 (1978). For the most recent and fairly optimistic review of the marine pollution problem, see UNEP REGIONAL SEAS PROGRAMME, *THE HEALTH OF THE OCEANS* (1982).

¹² UNCLOS Convention, *supra* note 5, at art. 1(4). For the GESAMP formulation, see U.N. Doc. A/7750 pt. 1, at 25 (1969).

¹³ See UNCLOS Convention, *supra* note 5, at arts. 207-12.

¹⁴ *Id.* at art. 207. International legal aspects of land-based pollution are discussed in Hickey, *Custom and Land-Based Pollution of the High Seas*, 15 SAN DIEGO L. REV. 409-75 (1978). See also Burchi, *International Legal Aspects of Pollution of the Sea from Rivers*, 3 ITAL. Y.B. INT'L L. 115-42 (1977); Kildow, *Political and Economic Dimensions of Land-Based Sources of Marine Pollution*, in *THE NEW NATIONALISM AND THE USE OF COMMON SPACES* 68 (J. Charney ed. 1982); McManus, *Legal Aspects of Land-Based Sources of Marine Pollution*, in *THE NEW NATIONALISM AND THE USE OF COMMON SPACES* 90 (J. Charney ed. 1982); Whipple, *Land-Based Sources of Marine Pollution and National Controls*, in *THE NEW NATIONALISM AND THE USE OF COMMON SPACES* 29 (J. Charney ed. 1982).

¹⁵ UNCLOS Convention, *supra* note 5, at art. 208. On this kind of pollution, see de Mestral, *The Prevention of Pollution of the Marine Environment Arising from Offshore Mining and Drilling*, 20 HARV. INT'L L.J. 469-518 (1979); Hardy, *Offshore Development and Marine Pollution*, 1 OCEAN DEV. & INT'L L. 239-73 (1973); Houston-Lay, *Pollution from Offshore Oil Wells*, in 3 *NEW DIRECTIONS IN THE LAW OF THE SEA* 103-09 (1973); Note, *Pollution of the Marine Environment from Outer Continental Shelf Oil Operations*, 22 S.C.L. REV. 228 (1970). See also Gayman, *Offshore Dredging Study: Environmental Ecological Report*, 4 OCEAN MGMT. 51-104 (1978); Kwiatkowska-Czechowska, *States' Responsibility for Pollution Damage Resulting from the Exploration and Exploitation of Seabed Mineral Resources*, 10 POLISH Y.B. INT'L L. 157 (1979-80).

¹⁶ UNCLOS Convention, *supra* note 5, at art. 210. On pollution caused by ocean dumping, see generally *Ocean Dumping: Hearing Before the Subcomm. on Oceanography, and*

or in containers, is another source of pollution. The dumping of nuclear waste, nerve gas and highly toxic substances is a particularly dangerous and controversial procedure.¹⁷ Pollution from vessels by oil and other potentially hazardous substances is the fourth source of marine pollution.¹⁸ However, it must be remembered that the major part of ship-generated pollution is attributable not to the widely publicized shipping disasters but to deliberate oil spillage in the course of standard operating procedures followed in maritime navigation. Pollution from or through the atmosphere is the least explored and publicized area, but is potentially dangerous.¹⁹ Finally, the expected mining of manganese nodules in the deep sea-bed beyond the limits of national jurisdiction involves pollution

the Subcomm. on Fisheries and Wildlife Conservation and the Environment of the House Comm. on Merchant Marine and Fisheries, 96th Cong., 1st Sess. 40 (1980); Rogers, *Ocean Dumping*, 7 ENVTL. L. 1-23 (1976); Weinstein-Bacac, *The Ocean Dumping Dilemma*, 10 LAWYER OF THE AMERICAS 868-920 (1978).

¹⁷ Disposal of radioactive waste in the ocean is discussed in de Pontavice, *Réflexions sur la pollution maritime d'origine radioactive*, in DROIT MARITIME FRANÇAIS 643-76, 707-31 (1976); Finn, *Ocean Disposal of Radioactive Waste: The Obligation of International Cooperation to Protect the Marine Environment*, 21 VA. L. REV. 621 (1981); Frosch, Hollister & Deese, *Radioactive Waste Disposal in the Oceans*, 1 OCEAN Y.B. 340-49 (1978); Reyners, *La Pratique des évacuations en mer des déchets radioactifs et nécessité d'une réglementation internationale*, in DROIT NUCLÉAIRE ET DROIT OCÉANIQUE 95-115 (1977). A different kind of hazard is posed by nuclear power plants located in coastal areas which cause thermal or possibly radioactive pollution. See Kindt, *Offshore Siting of Nuclear Power Plants*, 8 OCEAN DEV. & INT'L L. 57-103 (1980).

¹⁸ UNCLOS Convention, *supra* note 5, at art. 211. Vessel-source pollution is the most discussed form of marine pollution. Among the more recent accounts, see M. M'GONIGLE & M. ZACHER, *POLLUTION, POLITICS, AND INTERNATIONAL LAW: TANKERS AT SEA* (1979). For the shipping industry's point of view, see E. NAESS, *OIL POLLUTION OF THE OCEANS: A TANKER OWNER'S PERSPECTIVE* (1979). For other studies of the vessel-source pollution, see D. ABE-CASSIS, *THE LAW AND PRACTICE RELATING TO OIL POLLUTION FROM SHIPS* (1978); H. BURMESTER, *VESSEL-SOURCE POLLUTION: THE INTEGRATION OF INTERNATIONAL AND DOMESTIC RESPONSES IN THE SEARCH FOR AN EFFECTIVE LEGAL FRAMEWORK* (1979); IMCO, *SYMPOSIUM ON PREVENTION OF MARINE POLLUTION FROM SHIPS* (1976); WATERS, HEAVER & VERRIER, *OIL POLLUTION FROM TANKER OPERATIONS: CAUSES, COSTS AND CONTROLS* (1980); *THE PREVENTION OF OIL POLLUTION* (J. Wardley-Smith ed. 1979); Cycon, *Calming Troubled Waters: The Developing International Regime to Control Operational Pollution*, 13 J. MAR. L. & COM. 35 (1981); Gold & Johnston, *Ship-Generated Pollution: The Creator of Regulated Navigation*, in *LAW OF THE SEA: STATE PRACTICE IN ZONES OF SPECIAL JURISDICTION* 156 (T. Clingan ed. 1982); Schneider, *Prevention of Pollution from Vessels or Don't Give Up the Ship*, in *THE NEW NATIONALISM AND THE USE OF COMMON SPACES* (J. Charney ed. 1982). For a historical perspective of oil pollution from ships, see E. GOLD, *MARITIME TRANSPORT: THE EVOLUTION OF INTERNATIONAL MARINE POLICY AND SHIPPING LAW* 284-91, 321-39 (1981). For a review of the relevant literature, see Brown, *Marine Oil Pollution Literature: An Annotated Bibliography*, 13 J. MAR. L. & COM. 373 (1982). Pollution incidents are reported annually in *REPORTS OF THE ADVISORY COMMITTEE ON THE POLLUTION OF THE SEAS (ACOPS)* (London).

¹⁹ UNCLOS Convention, *supra* note 5, at art. 212.

hazards.²⁰

Even a very general survey of pollution sources reveals the diverse and complex problems inherent in protecting the marine environment. Hence, depending upon the nature and source of the pollutant and the specific hydrographical and ecological features of the sea, action to prevent, reduce and control marine pollution must be effectively undertaken at different levels: national, subregional, regional and global. For example, vessel-source pollution by deliberate oil discharges is a global issue because of the worldwide traffic of oil tankers and chemical carriers. However, land-based pollution in a semi-enclosed sea, such as the Baltic Sea, is a primary concern of the regional, littoral states. All of these considerations will be developed further when the global and regional frameworks of cooperation are discussed in the following sections of this study.

III. GLOBAL APPROACH

The theoretical rationale for a global regulatory system of marine pollution is a corollary of the rationale for the freedom of the seas: if the high seas are open to all nations, then control over any detriment to the marine environment caused by a nation, otherwise representing disregard of the interests of other members of the international community, ought to be comprehensively regulated by a global agency authorized not only to set standards but also to carry out enforcement measures for the protection of the common enjoyment of the oceans. According to this view, purely regional regulation is incompatible with the fundamental principle of the law of the sea. Moreover, the global approach is supported by the scientific propositions that pollution does not recognize any political boundaries and that the oceans constitute a united ecosystem.²¹ Yet, however perfect and rational this is in theory, it is not possible or even advisable to establish a comprehensive global regime to protect the marine environment from all sources of pollution. As evidenced by international practice, the growth of the legal and institutional frameworks for the control of marine pollution has proceeded gradually and in a pragmatic, though piecemeal, fashion at both the global and regional or subregional levels. However, a general consensus does exist that pollution from ships must be governed by global standards, with procedures for their enforcement.²² Over the past two decades a number of sectoral conventions have been concluded, and U.N. agencies such as the International Maritime

²⁰ *Id.* at art. 209. See also R. FRANK, *DEEPSEA MINING AND THE ENVIRONMENT* (1976).

²¹ Arguments for the global approach are presented in Okidi, *supra* note 2, at 8-12.

²² Reasons supporting global standards for the control of vessel-source pollution are cogently stated in the Working Paper submitted by the United States to the UN Seabed Committee, UN/Doc. A/AC.138/SC.III/L.36 (Apr. 2, 1973).

Organization (IMO), formerly the Intergovernmental Maritime Consultive Organization (IMCO),²³ have set sectoral standards, leaving enforcement in the hands of the national authorities. The methods of establishing global sectoral regimes have varied depending upon the nature of the pollution problem, but vessel-source pollution standards have been largely developed under the auspices of IMO. Adopting a global regime for the environmental protection of the sea-bed "Area" is, under the UNCLOS Convention, a mandate for the future International Seabed Authority.²⁴

In general, global legal rules to combat marine pollution have evolved from the initial focus on ship-generated oil pollution, through a more comprehensive approach to vessel-source pollution, to subsequent regulation of dumping and finally to the comprehensive but very general provisions of the UNCLOS Convention (which devotes far more attention to pollution from vessels than other types of environmental hazards to the marine environment). No global conventions dealing specifically with pollution from land-based sources or from offshore drilling exists, these being types of hazards more amenable to regional, rather than global, treatment. Pollution through or from the atmosphere has not yet been regulated by any global convention.

Before tracing in more detail the evolution of the global international law of marine pollution control, two of the 1958 Geneva Conventions on the Law of the Sea must be mentioned.²⁵ These conventions codified contemporaneous customary law, and a relatively limited number of countries are still bound by them. These global conventions include explicit antipollution provisions. The Convention on the High Seas places upon its signatories the obligation to prevent pollution of the sea by the discharge of oil from ships or pipelines or resulting from the exploration and exploitation of the seabed and subsoil²⁶ as well as to take measures to prevent pollution from the dumping of radioactive waste.²⁷ The Convention on the Continental Shelf obliges the parties to protect the living resources of the sea from "harmful agents" in the process of offshore drilling.²⁸ Although the pollution-related provisions of these Conventions are drafted in cautious and general terms, the Convention on the High Seas,

²³ Convention on the Intergovernmental Maritime Consultive Organization (now International Maritime Organization), Mar. 6, 1948, art. 4, 9 U.S.T. 621, T.I.A.S. No. 4044, 289 U.N.T.S. 48.

²⁴ UNCLOS Convention, *supra* note 5, at arts. 145, 209.

²⁵ Convention on the High Seas, Apr. 29, 1958, 13 U.S.T. 2312, T.I.A.S. No. 5200, 450 U.N.T.S. 82; Convention on the Continental Shelf, Apr. 29, 1958, 15 U.S.T. 471, T.I.A.S. No. 5578, 499 U.N.T.S. 331.

²⁶ Convention on the High Seas, *supra* note 25, at art. 24.

²⁷ *Id.* at art. 25.

²⁸ Convention on the Continental Shelf, *supra* note 25, at art. 5.

by emphasizing the duty to exercise freedom of the sea with reasonable regard to the interests of other states,²⁹ has laid down a basic principle of the global pollution management framework. This principle is predicated upon the need to preserve a reasonable balance between nations in their use and utilization of the oceans.

As a result of accidents in sea transport and increases in oil discharges, vessel-source oil pollution was the initial focus of concern for the international community. As early as 1926 the first, although unsuccessful, attempt was made to combat this hazard when the United States hosted an international conference to develop an appropriate global convention.³⁰ However, it was not until 1954, on British initiative, that a convention was concluded to regulate vessel-source pollution. This Convention, as amended in 1962 and 1969, imposes limitations upon deliberate, "operational" discharges of oil or oily mixtures.³¹ It is now in force for some 67 countries, including the major maritime nations.³² Originally administered by the United Kingdom, the Convention has been operating under the auspices of IMO. The 1954 Convention was the first tentative move towards achieving a balance between the interests of the flag and port (coastal) states in the specific area of vessel-source pollution. However, even though the port state has the right to inspect ships, its powers are limited to reporting violations to the flag state which alone has the right to enforce the Convention.³³

Two global conventions, prepared under the aegis of IMO, deal with other problems related to vessel-source pollution.³⁴ Prompted by the *Torrey Canyon* disaster,³⁵ the 1969 Brussels Convention relating to intervention on the high seas in cases of oil pollution casualties³⁶ is designed to

²⁹ See Convention on the High Seas, *supra* note 25, at art. 2.

³⁰ For a summary of the early attempts to control oil pollution, see Letter of Secretary of State Herter to President Eisenhower, 4 DIG. INT'L L. 696 (1965).

³¹ International Convention for the Prevention of Pollution of the Sea by Oil, May 12, 1954, 12 U.S.T. 2989, T.I.A.S. No. 4900, 327 U.N.T.S. 2, amended by 17 U.S.T. 1523, T.I.A.S. No. 6109, 600 U.N.T.S. 332 (1962) and T.I.A.S. No. 8505 (1969). The 1971 amendments, reprinted in 11 I.L.M. 267 (1972), are not yet in force, but were incorporated into the Convention of 1973 (note 41 *infra*). The 1954 Convention is analyzed, e.g., in D. ABECASSIS, *supra* note 18; M. M'GONIGLE & M. ZACHER, *supra* note 18. See also Mensah, *International Environmental Law: Conventions Concerning Oil Pollution at Sea*, 8 CASE W. RES. J. INT'L L. 110-30 (1976).

³² For the status of ratifications, see U.S. DEP'T OF STATE, TREATIES IN FORCE 252 (1982).

³³ International Convention for the Prevention of Pollution of the Sea by Oil, *supra* note 31, at art. 10.

³⁴ Convention Relating to the Intervention on the High Seas in Cases of Pollution Casualties, Nov. 29, 1969, 26 U.S.T. 765, T.I.A.S. No. 8068; International Convention on Civil Liability for Oil Pollution Damage, Nov. 29, 1969, reprinted in 9 I.L.M. 45 (1970).

³⁵ See *supra* note 6 and accompanying text.

³⁶ Convention Relating to the Intervention on the High Seas in Cases of Pollution Cas-

mitigate the damage that has already occurred as a result of a maritime accident. It allows the coastal state, facing a grave and imminent danger from oil pollution, to take emergency measures, the right which that state would perhaps in any case possess under general international law. Some 42 states are now parties to the Convention.³⁷ The other international agreement, the 1969 Convention on civil liability for oil pollution damage, governs the question of liability.³⁸ A supplementary, IMO-prepared Convention of 1971 established an International Fund for Compensation for Oil Pollution Damage.³⁹

In the early 1970's, concern for the global protection of the environment substantially increased. This increase was highlighted not only by the Stockholm Declaration of the United Nations Conference on the Human Environment of 1972,⁴⁰ but also by efforts to broaden the coverage of the 1954 Convention to include other noxious substances besides oil. These efforts culminated with the adoption of the International Convention for the Prevention of Pollution from Ships of 1973 (MARPOL).⁴¹

ualties, *supra* note 34. For a review of this Convention, see Emauelli, *The Right of Intervention of Coastal States on the High Seas in Cases of Pollution Casualties*, 25 U. NEW BRUN. L. REV. 79-96 (1976). The Protocol of Nov. 2, 1973, *reprinted in* 13 I.L.M. 605 (1974), extending the Convention to cover harmful substances other than oil is not yet in force.

³⁷ For the status of ratifications, see U.S. DEP'T OF STATE, TREATIES IN FORCE 252 (1982).

³⁸ International Convention on Civil Liability for Oil Pollution Damage, Nov. 29, 1969, *reprinted in* 9 I.L.M. 45 (1970). On this Convention, see Healy, *The International Convention on Civil Liability for Oil Pollution*, 1 J. MAR. L. & COM. 317 (1969-70).

³⁹ International Convention for the Establishment of an International Fund for Compensation for Oil Pollution Damage, Dec. 18, 1971, *reprinted in* 11 I.L.M. 284 (1972). In addition, two compensation schemes have been set up by oil company tanker owners: The Tanker Owners Voluntary Agreement Concerning Liability for Oil Pollution (TOVALOP), Jan. 7, 1969, *reprinted in* 8 I.L.M. 497 (1969); and the Contract Regarding an Interim Supplement to Tanker Liability for Oil Pollution (CRISTAL), Jan. 14, 1971, *reprinted in* 10 I.L.M. 137 (1970).

⁴⁰ See *supra* note 4. For an analysis of this Declaration, see Mendelsohn, *Ocean Pollution and the 1972 United Nations Conference on the Environment*, 3 J. MAR. L. & COM. 385 (1971-72); Sohn, *The Stockholm Declaration on the Human Environment*, 14 HARV. INT'L L.J. 423 (1973).

⁴¹ International Convention for the Prevention of Pollution from Ships (MARPOL) of 1973, Nov. 2, 1973, *reprinted in* 12 I.L.M. 1319 (1973). Fifteen countries, representing at least 50 percent of world tonnage, had to ratify the Convention before it could enter into force. The first fifteen to ratify MARPOL were Colombia, Denmark, France, Federal Republic of Germany, Greece, Italy, Liberia, Norway, Peru, Sweden, Tunisia, United Kingdom, United States, Uruguay and Yugoslavia. *MARPOL 73/78 to Enter into Force*, 4 IMO NEWS 1 (1982). For critical assessments of this Convention, see G. TIMAGENIS, INTERNATIONAL CONTROL OF MARINE POLLUTION 319-574 (1980); Abrahamsson, *The Marine Environment and Ocean Shipping: Some Implications for a New Law of the Sea*, 31 INT'L ORGANIZATIONS 291, 301-05 (1977); Brown, *The Prevention of Marine Pollution by Oil from Ships: Competence to Establish Standards and Competence to Enforce Standards*, 28 CURRENT LEGAL PROBS. 199-222 (1975); de Mestral, *La Convention Internationale de 1973 sur la Prévention de la*

This major, innovative piece of global legislation entered into effect on October 2, 1983. According to MARPOL rules, which apply to oil and other harmful substances, enforcement is still with the flag state.⁴² However, the powers of the port state have been considerably extended and the jurisdiction of the coastal state could extend beyond its territorial waters, subject to any existing limitations.⁴³

Another attempt at global regulation is the 1972 Convention on the Prevention of Marine Pollution by Dumping Waste and Other Matter.⁴⁴ In force now for some 47 states, including the United States,⁴⁵ this Convention is administered by IMO. Adopted as a result of international protest against the dumping at sea of toxic, especially radioactive, waste and nerve gas, this global antidumping regime is modeled on a regional initiative of 12 North Atlantic region countries and formalized in the Oslo Convention of 1972.⁴⁶ Enforcement of the antidumping Convention is left to the flag state on the high seas and to the coastal state within its waters and the contiguous zone.

International conventions, intended to prevent accidents at sea whether or not an accident involves marine pollution, indirectly contribute to strengthening the global regime of marine environment protection against pollution by oil and other harmful substances. Among many such

Pollution par les Navires, 12 CAN. Y.B. INT'L L. 239-54 (1979); Horrocks, *The 1973 Marine Pollution Convention: Problems and Solutions*, 1 MAR. POL'Y 52-60 (1977). See also literature listed *supra* note 18. In 1978 an international conference on tanker safety and pollution prevention adopted a Protocol relating to the 1973 Convention, *reprinted in* 18 I.L.M. 546 (1978).

⁴² International Convention for the Prevention of Pollution from Ships, *supra* note 41, at arts. 4 & 6.

⁴³ *Id.* at arts. 5 & 6; UNCLOS Convention, *supra* note 5, at arts. 21 & 56.

⁴⁴ International Convention on the Prevention of Marine Pollution by Dumping Wastes and Other Matter, Nov. 13, 1972, 26 U.S.T. 2403, T.I.A.S. No. 8165. For appraisal of this Convention, see L. HUNTER, *THE QUESTION OF AN OCEAN DUMPING CONVENTION* (1972); G. TIMAGENIS, *supra* note 41, at 171-289; Caro, *Convenio sobre la prevención de la contaminación del mar por vertimiento y otras materias*, 42/43 BOL. DE LA FAC. DE DER. Y CIEN. SOC. UNIV. CÓRDOBA 367 (1978/79); de Mestral, *La Convention sur la prévention de la pollution resultant de l'immersion de déchets*, 11 CAN. Y.B. INT'L L. 226-43 (1973); de Yturriaga, *Convenio de Londres de 1972 sobre prevención de la contaminación por vertimiento de desechos y otras materias*, 4 ANUARIO DEL INSTITUTO HISPANO-LUSO-AMERICANO DE DERECHO INTERNACIONAL 343-92 (1973); Gündling, *Rechtsprobleme der Abfallbeseitigung auf See*, 4 NATUR UND RECHT 41 (1982); Leitzell, *The Ocean Dumping Convention, A Hopeful Beginning*, 10 SAN DIEGO L. REV. 502-13 (1973); Miller, *Ocean Dumping: Prelude and Fugue*, 5 J. MAR. L. & COM. 51-75 (1973-74). See also *supra* note 18. For the international legal aspects of dumping radioactive waste, see Lomio, *International Law and Disposal of Radioactive Wastes at Sea*, 15 NEW ENG. L. REV. 253-86 (1979-80). See also *supra* note 17.

⁴⁵ For the status of ratifications, see U.S. DEP'T OF STATE, PUB. NO. 9285, *TREATIES IN FORCE* 253 (1982).

⁴⁶ Convention for the Prevention of Marine Pollution by Dumping from Ships and Aircraft, Feb. 15, 1972, *reprinted in* 11 I.L.M. 262 (1972). See also *infra* note 76.

agreements are: the Convention for the Safety of Life at Sea (1960),⁴⁷ the Convention on the International Regulations for Preventing Collisions at Sea (1972),⁴⁸ the Convention on Load Lines (1966),⁴⁹ and the Convention on Standards for Seafarers (1978),⁵⁰ all drafted under the aegis of IMO.

Among international agreements of indirect concern to marine environment protection are the major arms control treaties: the 1963 Partial Nuclear Test Ban Treaty which bans nuclear weapons testing in the atmosphere, in outer space, and under water;⁵¹ the 1971 Seabed Arms Control Treaty banning weapons of mass destruction on the seabed and the ocean floor and in the subsoil thereof,⁵² and the Bacteriological (Biological) and Toxin Weapons Treaty of 1972 banning stockpiling of such weapons.⁵³ A number of other global agreements, unrelated to arms control, have been concluded to regulate the maritime transport of radioactive materials and the liability of operators of nuclear vessels.⁵⁴

Generally, while vessel-source pollution is covered by fairly detailed global regulations, no specific global regulation is applicable to offshore drilling, land-based pollution and pollution from the atmosphere.⁵⁵ However, the UNCLOS Convention deals with these types of pollution in general terms, calling upon states to take measures necessary for their control.⁵⁶

The piecemeal approach to global marine pollution legislation is

⁴⁷ Convention for the Safety of Life at Sea, June 17, 1960, 16 U.S.T. 185, T.I.A.S. No. 5780, 536 U.N.T.S. 27, replaced by the Convention of Nov. 1, 1974, T.I.A.S. No. 9700, reprinted in 14 I.L.M. 963 (1975).

⁴⁸ Convention on the International Regulations for Preventing Collisions at Sea, Oct. 20, 1972, 28 U.S.T. 3459, T.I.A.S. No. 8587.

⁴⁹ Convention on Load Lines, Apr. 5, 1966, 18 U.S.T. 1857, T.I.A.S. No. 6331, 640 U.N.T.S. 133.

⁵⁰ Convention on Standards of Training, Certification and Watchkeeping for Seafarers, July 7, 1978, IMO Doc. STW/Conf. 12 (1978). For a list of 21 conventions on maritime transport concluded under the auspices of IMO, see E. GOLD, *supra* note 18, at 340.

⁵¹ Nuclear Weapons Test Ban Treaty, Aug. 5, 1963, 14 U.S.T. 1313, T.I.A.S. No. 5433, 480 U.N.T.S. 43.

⁵² Treaty on the Prohibition of the Emplacement of Nuclear Weapons and other Weapons of Mass Destruction in the Seabed and the Ocean Floor and the Subsoil Thereof, Feb. 11, 1971, 23 U.S.T. 701, T.I.A.S. No. 7337.

⁵³ Convention on Biological Weapons, Apr. 10, 1972, 26 U.S.T. 583, T.I.A.S. No. 8062.

⁵⁴ For a list of these agreements, see L. HENKIN, R. PUGH, O. SCHACHTER & H. SMIT, *INTERNATIONAL LAW: CASES AND MATERIALS* 401-04 (1980).

⁵⁵ *But see* Convention on Civil Liability for Oil Pollution Damage Resulting from Exploration for and Exploitation of Seabed Mineral Resources, opened for signature May 1, 1977, reprinted in 16 I.L.M. 1451 (1977). This Convention is analyzed in de Yturriaga, *Convenio de Londres de 1977 sobre responsabilidad civil por daños por contaminación de hidrocarburos, derivada de la explotación de los recursos minerales del subsuelo marino*, 4 REVISTA DE INSTITUCIONES EUROPEAS 729-42 (1977).

⁵⁶ UNCLOS Convention, *supra* note 5, at arts. 207, 208 & 212.

more than matched by the rather disjointed and uncoordinated global structure of international organizations in this area.⁵⁷ At least eight United Nations agencies: IMO, United Nations Environmental Program (UNEP), Food and Agriculture Organization (FAO), World Health Organization (WHO), United Nations Educational, Scientific and Cultural Organization (UNESCO), World Meteorological Organization (WMO), International Atomic Energy Agency (IAEA) and one advisory committee, U.N. Joint Group of Experts on the Scientific Aspects of Marine Pollution (GESAMP),⁵⁸ have some kind of program related to the marine environment. The duplication of functions as well as the organizational and bureaucratic competition over programs and resources is magnified with respect to scientific advice by the existence of several international non-governmental organizations and other bodies. The Scientific Committee on Oceanic Research (SCOR), the Scientific Committee on Problems of the Environment (SCOPE) of the International Council of Scientific Unions (ICSU), and the Advisory Committee on Marine Resources Research (ACMRR) of FAO are only a few of the many bodies investigating some aspects of marine pollution. The functions of all of these bodies will not be detailed here. Suffice it to say that most are restricted to disseminating information, assessing particular marine pollution problems, and making recommendations on performance standards. None of the agencies has the competence to apply specific anti-pollution standards. However, IMO, UNEP and IAEA are involved in drafting conventions and prescribing performance standards. In addition to promoting maritime safety, IMO's function is to prevent and control ship-generated pollution, primarily through its Marine Environment Protection Committee (MEPC).⁵⁹ Its major achievement has been the drafting of a number of important conventions which have been listed above. IMO has now emerged as the nerve center of the political fight for securing the best possible standards of compliance by the flag state to meet vital environmental interests of the coastal and port countries.⁶⁰

⁵⁷ See Miles, *On the Roles of International Organizations in the New Ocean Regime in THE LAW OF THE SEA IN THE 1980's*, at 383, 394-402 (Choon-ho Park ed. 1983) (proceedings of the Law of the Sea Institute 14th Annual Conference, Oct. 20-23, 1980, Kiel); see also Kingham & MacRae, *Competent International Organizations and the Law of the Sea*, 3 MAR. POL'Y 106-32 (1979); MacDonald, *International Institutions for Environmental Management*, 26 INT'L ORGANIZATIONS 372-400 (1972); Smith, *The Role of Special Purpose and Non-Governmental Organizations in the Environmental Crisis*, 26 INT'L ORGANIZATIONS 302-26 (1972).

⁵⁸ See *supra* text accompanying note 12.

⁵⁹ For a critical appraisal, see Greenberg, *IMCO: An Environmentalist's Perspective*, 8 CASE W. RES. J. INT'L L. 131, 144-48 (1976).

⁶⁰ IMO's role in marine environmental protection is described in its publication *IMO AND ITS ACTIVITIES* (1978). See also M. M'GONIGLE & M. ZACHER, *supra* note 18, ch. VII; Greenberg, *supra* note 59; Juda, *IMCO and the Regulation of Ocean Pollution from Ships*,

The confusion at the global level caused by the number of organizations fighting against the various forms of marine pollution is not helped by the fact that the decisions of UNEP, which was originally conceived as the global coordinating body for all environmental protection, have no legal effect on other agencies unless explicitly endorsed by their governing bodies. As discussed later, UNEP's functions with respect to the marine environment have now focused almost exclusively on regional programs. The Administrative Committee on Coordination (ACC) of the United Nations system at large does reduce duplication to a certain extent, but it is not generally capable of providing consistent coordination. Another inter-agency cooperative body, GESAMP, which was established in 1967 to advise agencies and member states on scientific aspects of marine pollution and composed of experts nominated by IMO, FAO, UNESCO, WHO, IAEA and the United Nations, is not itself free from the charge of duplication. In sum, like other areas of the United Nations "functional" activities, the area of marine environmental protection suffers from a proliferation of institutions, dispersion of effort and a certain amount of confusion and inefficiency.

In conclusion, the discussion of the global treaty and organizational regime of marine pollution control shows the need for better integration, harmonization of legal rules, and coordination of institutional effort. Yet, at the same time it points to the difficulties inherent in attempts to establish global standards and agencies—let alone one super-agency—in such a complex and diverse field as the protection and preservation of the marine environment. Difficulties in the global approach point to the utility of the other, "regional," approach to the problem.

IV. REGIONAL APPROACH

Although marine pollution is recognized as a global problem requiring a certain minimum number of centrally coordinated anti-pollution standards such as the vessel-source pollution regime established under International Maritime Organization (IMO) auspices, the existence of local peculiarities suggests solutions which would take into account the heterogeneous nature of the oceans. The vulnerability of the marine environment varies greatly, depending upon the geography, depth, temperature, salinity and currents of the ocean. The marine environment is further affected by the intensity and nature of traffic and the economic and political development of the coastal area. All of these elements produce unique pollution problems for the littoral nations of a region. As discussed below, semi-enclosed seas typify ecological units of the ocean where global envi-

26 INT'L & COMP. L.Q. 558-84 (1977). For the early years, see Padwa, *The Curriculum of IMCO*. 14 INT'L ORGANIZATIONS 524-27 (1960).

ronmental pollution standards would not be appropriate. Even some larger portions of the oceans, such as the segments of the Indian Ocean with heavy tanker traffic or the North Sea with its oil exploration and exploitation, require adaptation of general standards to regional peculiarities. In fact, marine pollution is claimed by some to be a global issue only with respect to tropospheric transport of pollutants, appearing in most cases only as a set of localized or at most regional patterns.⁶¹ Generally, pollution from land-based sources, dumping and environmental protection of enclosed and semi-enclosed seas are primarily regional concerns while vessel-source pollution from oil and certain persistent toxic substances is a global problem. Protection of the marine environment against adverse effects of any future deep sea mining will also have to be dealt with at the global level.

The reasons why the regional approach is especially well suited for controlling marine pollution can be summarized as follows: First, a global approach to combat some types of pollution, such as that from land-based sources, is inappropriate because of the nature of the problem. Second, the heterogeneity of the oceans requires taking into account regional differences. Third, regionally organized anti-pollution mechanisms can be more readily made available in case of an emergency. Fourth, the regional approach encourages maximum participation by the regional nations, especially less developed countries which might otherwise stay away from a globally organized and technologically advanced system. Regional cooperation may thus favor cost-effectiveness and transfer of technology to the developing nations. Finally, a regional arrangement can serve as a forum for consultation and might even contribute to developing habits of cooperation eventually transcending matters relating to the protection of the marine environment.⁶²

The regional solution to the environmental problems of the oceans raises a theoretical question concerning the concept of the marine region itself, an issue analogous to the attempts of political scientists to define political regions on land.⁶³ Definitions focusing on certain geographico-political features of segments of land, however, cannot be readily applied to a marine region where a body of water is the point of reference. A region is, of course, a perceptual concept created by selecting certain features relevant to a certain issue, be it protection of the marine environment or management of the living resources of the sea. The boundaries of a region are not objectively fixed; the region is in the eyes of the beholder.

⁶¹ Miles, *supra* note 57, at 397.

⁶² Okidi, *supra* note 2, at 13-19.

⁶³ See L. CANTORI & S. SPIEGEL, *THE INTERNATIONAL POLITICS OF REGIONS: A COMPARATIVE APPROACH* (1970); B. RUSSETT, *INTERNATIONAL REGIONS AND THE INTERNATIONAL SYSTEM: A STUDY IN POLITICAL ECOLOGY* (1967).

Three connotations of the marine region are distinguished by a leading marine geographer.⁶⁴ First, one can conceptualize a "physical" marine region as an expanse of water which is set aside from other parts of the world ocean by some distinctive feature or features. Ocean basins and semi-enclosed seas, concepts devised by scholars and adopted in international practice, are the two sub-categories of the physical marine region. The North and South Atlantic, Indian Ocean, Arctic Ocean, Antarctic Ocean, and North, West and East Pacific are recognized as the eight basins. Four criteria have been suggested to differentiate a semi-enclosed sea from other marginal bodies of water. A semi-enclosed sea has been defined as an area which has at least 50,000 square nautical miles, the quality of being a primary sea rather than an arm of another semi-enclosed water body, at least 50 percent of its periphery occupied by land and which is surrounded by at least two states. There are some 23 seas that adhere fairly closely to these criteria: Gulf of Aden, Andaman Sea, Baffin Bay-Davis Strait, Baltic Sea, Bay of Bengal, Bering Sea, Black Sea, Caribbean Sea, Celebes Sea, East China-Yellow Seas, Gulf of Guinea, Sea of Japan, Mediterranean Sea, Gulf of Mexico, North Sea, Sea of Okhotsk, Gulf of Oman, Persian (Arabian) Gulf, Red Sea, Solomon Sea, South China Sea, Sulu Sea and Timor-Arafura Seas.⁶⁵ The UNCLOS Convention defines "enclosed or semi-enclosed sea" as "a gulf, basin, or sea surrounded by two or more States and connected to the open seas by a narrow outlet or consisting entirely or primarily of the territorial seas and exclusive economic zones of two or more coastal States."⁶⁶ Under these criteria some other bodies of water, such as the Coral, Norwegian and Barents Seas, the Greenland Sea, the Bay of Biscay and perhaps the Arabian Sea would have to be added to the list of the semi-enclosed seas. A semi-enclosed sea may have a subregion. For example, the Gulf of Bothnia is a subregion of the Baltic Sea and the Gulf of Aqaba is a subregion of the Red Sea. The Atlantic and Pacific basins are sometimes subdivided into regions, such as the Northwest and the Northeast Atlantic, and the Southeast Pacific. It must be remembered, however, that while some marine regions, for example the Baltic, Black, Red and Mediterranean Seas, are more distinguishable than others, any marine regional unit is only a perceptual concept created by selecting certain features relevant to a certain issue.

While a marine region is a spatial, geographical concept, the second connotation adopts a "functional" approach which may or may not con-

⁶⁴ Alexander, *Regional Arrangements*, *supra* note 1. Compare Gonçalves, *Concepts of Marine Region and the New Law of the Sea*, 3 MAR. POL'Y 255-63 (1979).

⁶⁵ Alexander, *Regional Co-operation in Marine Sciences*, *supra* note 1, at I-12.

⁶⁶ UNCLOS Convention, *supra* note 5, at art. 122. See also Vukas, *Enclosed and Semi-Enclosed Sea*, 11/12 REVUE IRANIENNE DES RELATIONS INTERNATIONALES 171-96 (1978).

form to the limits of a physical marine region. The functional marine region is defined in terms of an identifiable management problem, such as water pollution control, which can be handled as a discrete issue by the coastal nations.⁶⁷ This second connotation of a marine region should in theory correspond, and in the cases of the Baltic and Mediterranean seas does correspond, to the third category of a marine region. This is the "institutional" or "operational" region, a site of one or more formal arrangements set up by international agreement to handle a certain management problem or problems.⁶⁸ The vulnerable semi-enclosed Baltic Sea, for example, is a pioneering operational region and is the site of two arrangements: one on the conservation of the living resources⁶⁹ and the other on the protection of the marine environment.⁷⁰

The framers of a regional operational arrangement must confront the spatial dimension of their region in a realistic fashion. They must take into account both the nature of the regional problem and the interests and possible contribution of each potential member of the arrangement. The concept of geographical coverage of a marine region is not entirely clear. It is, however, closely related to the problem of membership in the institutional marine region. Whether the region should include not only the littoral states but also non-littoral up-river states as well as states which contribute air-borne pollutants is an important question. For example, should landlocked Czechoslovakia and Switzerland participate in the Baltic and North Seas marine environment arrangements? Should Portugal be a party to the Mediterranean Action Plan or the Bahamas to the environmental project for the Caribbean? Questions of this kind, involving positive and negative inputs of the "regional" states, must be carefully thought through by the initiators of the regional action. They must balance legitimate interests of all potential members of the arrangement with the need to provide for an effective, non-exclusive but manageable joint mechanism for achieving the objectives of the operational regional unit.

The states of a marine region which initiate an arrangement for the protection of the marine environment of their region must be aware of the strengths and weaknesses of their program. They must assess the reasonableness of their objectives, both as stated in the formalized agreement and as perceived by the parties over time. Several other concerns confront evolving regional systems, especially those involving developing

⁶⁷ Alexander, *Regional Arrangements*, *supra* note 1.

⁶⁸ *Id.* at 92-93.

⁶⁹ See Convention on Fishing and Conservation of the Living Resources on the Baltic Sea and the Belts, Sept. 13, 1973, *reprinted in* 12 I.L.M. 1291 (1973).

⁷⁰ See Convention on the Protection of the Marine Environment of the Baltic Sea Area, Mar. 22, 1974, *reprinted in* 13 I.L.M. 546 (1974).

countries. First, once the international organization which initially funded the arrangement has ceased its support, alternative financial resources must be in place; second, threats to the arrangement's effectiveness, such as competition for leadership in the region, political or ideological conflicts and uneven enthusiasm among the participants may be present. In terms of a regional system's ability to protect the marine environment, success depends very much on the coastal states' perception of the gravity of environmental deterioration in their region. The perception must be strong enough to transcend any differences that may otherwise divide them.⁷¹ The chances of success are reinforced further if all or most of the littoral states are linked by other integrative forces such as the European Economic Community (EEC) or the Council of Europe, or the ethnic and religious ties of the Arab League which bind almost all the countries of the Red Sea and Gulf of Aden action plan.

Although the regional approach has vast appeal in the management of the ocean environment, it may give rise to problems in international law, especially insofar as vessel-source pollution is concerned. As already noted, this type of pollution requires a global rather than regional approach. However, if states of several marine regions establish regional pollution standards for vessels entering their internal waters or even passing their territorial sea or Exclusive Economic Zone (EEZ), foreign ships may be subjected to unpredictable harassment as they ply different regions of the oceans. Multiplicity of pollution regulations may also cause transregional pollution damage. Moreover, an extra-regional state may argue that the regional pollution regulations unreasonably interfere with its freedom of navigation in the EEZ or in the exercise of its right of innocent passage and therefore are unenforceable against its vessels. The matter would be even more controversial if, through a uniform regional or subregional policy, a coastal state were to enforce special port entry requirements governing the design, construction, manning and equipment of extra-regional vessels, which are subject to lesser anti-pollution standards in their home regions.⁷² The need to protect the marine environment against the adverse effects of tanker disasters, however, is likely to cause states to adopt regional or subregional regulations establishing a special regime for the marine region, even though such regulations involve potential conflict with states from outside the region.

⁷¹ The Baltic and Mediterranean operational marine regions are examples of coastal States acting upon this perception.

⁷² The complex problems of the jurisdictional conflict between the port, coastal and EEZ states are the subject of fairly detailed regulations in the UNCLOS Convention, but this issue goes far beyond the topic under discussion.

V. REGIONAL ARRANGEMENTS

The 1970's witnessed a proliferation of regional arrangements for the protection of the marine environment, primarily in semi-enclosed seas which, as noted above, are especially suited for regional action. The movement toward regionalization has continued into the 1980's and currently seems to be the major trend in international ocean management, including fisheries and the protection of the marine environment. It is impossible within the scope of this survey to deal at length with the diverse legal and organizational rules developed by the regional schemes for the management of the marine environment.⁷³ Generally, however, such schemes can be categorized as one of three approaches: piecemeal, framework and comprehensive. Furthermore, regional arrangements which are implemented within the U.N. system can be separated from those implemented outside the U.N. system. For example, the United Nations regional system does not, in general, extend to the area of the Northeast Atlantic and its regional seas.

The piecemeal approach, initiated in the Northeast Atlantic, was the first tactic adopted in regional attempts to combat marine pollution. The 1969 Bonn Agreement for cooperation in dealing with accidental oil pollution of the North Sea⁷⁴ became the first foundation of a composite structure of the North Sea's environmental protection by its coastal states. It was basically a regional response to the need for cooperation so dramatically revealed by the *Torrey Canyon* disaster of 1967.⁷⁵ This agreement and similar subregional agreements mentioned below focus on combating pollution produced by accidental oil spills which, unlike operational spills, are suited for regional rather than global action. The next stage in building a regional system of protecting the Northeast Atlantic was the

⁷³ For the most detailed comparative analysis, see de Yturriaga, *Regional Conventions on the Protection of the Marine Environment*, 162 *ACADÉMIE DE DROIT INTERNATIONAL-RECUEIL DES COURS* 323-449 (1980). See also INTERNATIONAL LAW ASSOCIATION, *THE ROLE OF REGIONAL AGREEMENTS IN PROTECTION AND PRESERVATION OF THE MARINE ENVIRONMENT* (1978) (report of the British Branch of the I.L.A. to the 50th Conference of the I.L.A. in Manila); Alhérière, *Marine Pollution Control Regulation: Regional Approaches*, 6 *MAR. POL'Y* 162 (1982); Boehmer-Christiansen, *Marine Pollution Control in Europe: Regional Approaches, 1972-1980*, 8 *MAR. POL'Y* 44 (1984); Schulte-Braucks, *La collaborazione regionale per la protezione dell'ambiente marino dall'inquinamento*, 23 *COMUNITÀ INTERNAZIONALE* 231-54 (1981); Zukrowska, *Traktaty regionalne a koordynacja ochrony morza przed zanieczyszczeniem [Regional Agreements and Coordination of the Protection of the Sea against Pollution]*, 32 *PAŃSTWO I PRAWO* 73-81 (1977).

⁷⁴ Agreement Concerning Pollution of the North Sea by Oil, June 9, 1969, 704 *U.N.T.S.* 3; See P. FOTHERINGHAM & P. BIRNIE, *THE EFFECTIVE MANAGEMENT OF RESOURCES: THE INTERNATIONAL POLITICS OF THE NORTH SEA* 168-223 (1979); Koopmann, *Internationale Massnahmen zur Reinhaltung des Meeres: Umweltschutzbereich Nordsee*, in *DIE WIRTSCHAFTLICHE NUTZUNG DER NORDSEE UND DIE EUROPÄISCHE GEMEINSCHAFT* (1979).

⁷⁵ See *supra* note 6.

1972 Oslo Convention concluded by 11 states of that region. This Convention deals with pollution caused by dumping.⁷⁶ It is this regional regulation that served as a model for the global convention of the same year.⁷⁷

The Convention for the Prevention of Marine Pollution from Land-Based Sources, signed in Paris in 1974,⁷⁸ was the next step. This convention is a novelty both because the European Economic Community (EEC) is a party to it and because it is open for accession to the non-coastal, riparian states of the rivers flowing into the Northeast Atlantic marine region (Austria, Czechoslovakia, German Democratic Republic, Luxembourg, and Switzerland). This region is also covered by the first ever Convention on airborne pollution,⁷⁹ concluded in 1979 under the auspices of the United Nations Economic Commission for Europe. Furthermore, civil liability for oil pollution damage resulting from the exploration and exploitation of oil in the Northeast Atlantic region is regulated by the 1976 London Convention.⁸⁰ Finally, 14 states of Western Europe concluded an agreement in 1982 designed to harmonize and improve the control of the port state in implementing agreements on maritime safety and protection of the marine environment.⁸¹

Piecemeal approaches to marine pollution also include numerous bilateral and subregional agreements mainly concerning accidental vessel-source pollution in the North Atlantic and Mediterranean areas: the 1971 Agreement among Denmark, Finland, Norway, and Sweden on cooperation in taking measures against pollution of the sea by oil;⁸² the Franco-Spanish Agreement of 1975 on Oceanographic Cooperation;⁸³ the Interim Canada-Denmark marine pollution plan of 1977 (pollution from offshore

⁷⁶ Convention for the Prevention of Marine Pollution by Dumping from Ships and Aircraft, *supra* note 46. For a review of this Convention, see de Yturriaga, *Convenio de Oslo de 1972 para la prevención de la contaminación marina provocada por vertidos desde buques y aeronaves*, 1 REVISTA DE INSTITUCIONES EUROPEAS 121-30 (1974).

⁷⁷ International Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter, *supra* note 44.

⁷⁸ Convention for the Prevention of Marine Pollution from Land-Based Sources, Feb. 21, 1974, *reprinted in* 13 I.L.M. 352 (1974).

⁷⁹ Convention on Long-Range Transboundary Air Pollution, Nov. 13, 1979, *reprinted in* 19 I.L.M. 1442 (1980) (entered into force Mar. 16, 1983). See U.N. Chronicle, Jan. 1984, at 102.

⁸⁰ See Dubais, *The 1976 London Convention on Civil Liability for Oil Pollution Damage from Offshore Operations*, 9 J. MAR. L. & COM. 61-77 (1977-78); Fitzmaurice, *Liability for North Sea Oil Pollution*, 2 MAR. POL'Y 105-11 (1978).

⁸¹ Memorandum of Understanding, Jan. 26, 1982, *reprinted in* 21 I.L.M. 1 (1982).

⁸² Kiss, *International Co-operation for the Control of Accidental Marine Pollution*, 23 GERMAN Y.B. INT'L L. 231, 243-44 (1981) (commenting on the Nordic Agreement, Sept. 16, 1971).

⁸³ *Id.* at 243 (commenting on the Agreement on Oceanographic Cooperation, Dec. 11, 1975, France-Spain).

seabed activities);⁸⁴ the United States-Canada Agreement on contingency plans for spills of oil and other noxious substances (1974);⁸⁵ the United States-Mexican Agreement of 1980;⁸⁶ the Denmark-Sweden Agreement on the protection of the Sund of 1974;⁸⁷ the France-Italy-Monaco Agreement of 1976;⁸⁸ and the Italo-Yugoslav Agreement of 1976 on the protection of the Adriatic.⁸⁹ Finally, four Nordic countries (three of them on the Baltic littoral and parties to the Baltic arrangement) cooperate in the preservation of their environment, including the marine environment (but excluding vessel-source pollution), under the Nordic Stockholm Convention of 1974.⁹⁰

Under the framework approach the coastal states of a semi-enclosed sea adopt a framework or "umbrella" convention, spelling out general principles to govern control of various types of pollution and the organizational structure of the arrangement. Detailed rules covering specific sources of pollution are left to special protocols and technical annexes which, in principle, constitute individual agreements. This system was first adopted (after some coastal states' initial failure to approach the problem by the piecemeal method) by the states of the Mediterranean littoral under the Mediterranean Action Plan in 1976. This international conference, held in Barcelona under the auspices of the United Nations Environmental Programme's (UNEP) Regional Seas Programme (*see* Map on facing page), agreed on a Convention for the protection of the Mediterranean against pollution and two Protocols: the first on dumping and the second on cooperation in combating pollution by oil and other

⁸⁴ *Id.* (commenting on the Interim Marine Pollution Plan of 1977, Canada-Denmark).

⁸⁵ Agreement Relating to the Establishment of Joint Pollution Contingency Plan for Spills and other Noxious Substances, June 19, 1974, 25 U.S.T. 1280, T.I.A.S. No. 7861, *expanded by* Agreement of Aug. 30, 1977, 29 U.S.T. 2569, T.I.A.S. No. 8957. *See* A. ROVINE, *DIGEST OF UNITED STATES PRACTICE IN INTERNATIONAL LAW* 1974, at 369-70 (1975).

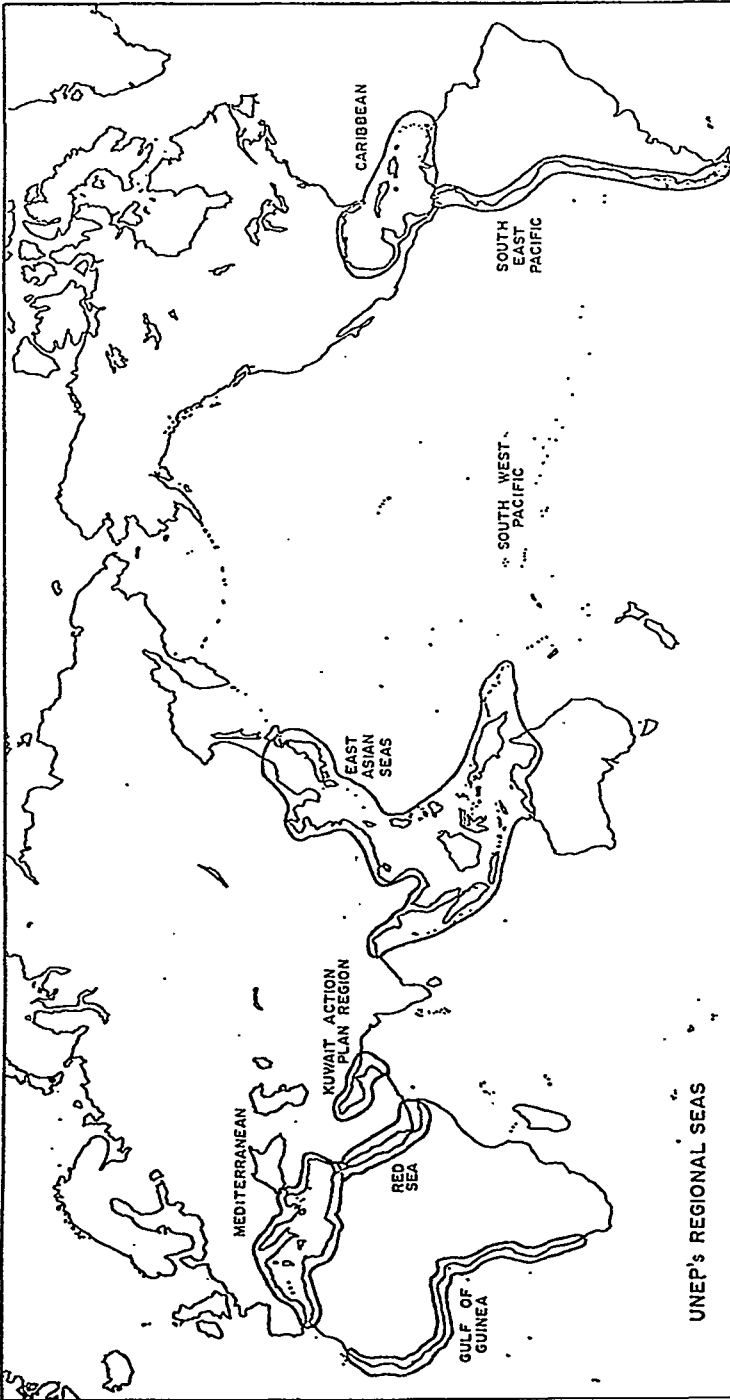
⁸⁶ Agreement of Cooperation Regarding Pollution of the Marine Environment by Discharges of Hydrocarbons and Other Hazardous Substances, July 24, 1980, United States-Mexico, T.I.A.S. No. 10021.

⁸⁷ Kiss, *supra* note 82, at 243 n.10 (commenting on the Agreement on the Protection of the Sund, Apr. 5, 1974, Denmark-Sweden).

⁸⁸ *Id.* (commenting on the Protection of Water of the Mediterranean Shores, May 10, 1976, France-Italy-Monaco).

⁸⁹ *Id.* (commenting on the Agreement on Co-operation to Protect the Waters of the Adriatic Sea and Coastal Zones against Pollution, Oct. 31, 1976, Italy-Yugoslavia).

⁹⁰ Convention on the Protection of the Environment, Feb. 19, 1974, Denmark-Finland-Norway-Sweden, *reprinted in* 13 I.L.M. 591 (1974). On this Nordic Convention, *see* Fleischer, *Nordisk miljøvernkonvensen jon*, *TIDSSKRIFT FOR RETTSVITENS KAP* 83-116 (1976); Kiss, *La Convention Nordique sur L'environnement*, 21 *ANNUAIRE FRANÇAIS DE DROIT INTERNATIONAL* 808-14 (1975).



Source: Alexander, *Regional Co-operation in Marine Science* (note 1) II-47.

harmful substances in cases of emergency.⁹¹ The third Protocol, on land-based pollution, was signed in Athens in 1980,⁹² and the fourth Protocol within the framework of the Barcelona Convention, on specially protected marine and coastal areas, was signed in 1982.⁹³ Under the rules of the Mediterranean Action Plan, no country may participate in the Barcelona Convention without at the same time becoming a party to at least one of its Protocols, but a state party to the Convention need not necessarily be a party to all of its Protocols.⁹⁴ The Mediterranean Action Plan has raised a number of interesting problems because of the political and economic heterogeneity of the region. It is worth noting that every Mediterranean state except Albania has signed the Barcelona Convention. Consequently, following the entry of the Convention and the two Protocols into effect, both Israel and some Arab countries, including Libya, are cooperating in some areas of pollution control.⁹⁵ The EEC is also a party to the Barcelona Convention and the non-coastal states, riparian of rivers flowing into the Mediterranean (Switzerland, the Sudan, Ethiopia, Uganda,

⁹¹ Convention for the Protection of the Mediterranean Sea Against Pollution, Feb. 16, 1976, *reprinted in* 15 I.L.M. 290 (1976); Protocol for the Prevention of the Pollution of the Mediterranean Sea by Dumping from Ships and Aircraft, *id.* at 300; and Protocol Concerning Co-operation in Combating Pollution of the Mediterranean Sea by Oil and Other Harmful Substances in Cases of Emergency, *id.* at 306. The Mediterranean Action Plan is examined in Boxer, *Mediterranean Pollution: Problems and Response*, 10 OCEAN DEV. & INT'L L. 315 (1982); De Hoyos, *The United Nations Environment Program: The Mediterranean Conferences*, 17 HARV. INT'L L.J. 639-49 (1976); de Yturriaga, *Convenio de Barcelona de 1976 para la Protección del Mar Mediterráneo contra la Contaminación*, 3 REVISTA DE INSTITUCIONES EUROPEAS 63-96 (1976); Juda, *The Regional Effort to Control Pollution in the Mediterranean Sea*, 5 OCEAN MGMT. 125-50 (1979); Robinson, *Convention for the Protection of the Mediterranean Sea against Pollution*, EARTH L.J. 289-95 (1976); Saliba, *Protecting the Mediterranean: Coordinating Regional Action*, 2 MAR. POL'Y 171-80 (1978); Sciolla-Lagrange, *The Barcelona Convention and its Protocols*, 6 AMBIO 328-32 (1977); Sisto, *La Convenzione di Barcellona del 1976 sulla Protezione del Mediterraneo contro l'inquinamento*, 63 RIVISTA DI DIRITTO INTERNAZIONALE 355-73 (1980); Vellou, *Certain Remarks on the Pollution of the Sea with Reference to the Mediterranean Sea and the Barcelona Conference*, 7 THESAURUS ACROASIMUM 573-79 (1977).

⁹² Protocol for the Protection of the Mediterranean Sea against Pollution from Land-Based Sources, May 17, 1980, *reprinted in* 19 I.L.M. 869 (1980). On this Protocol, see Timagenis, *Protocol for the Protection of the Mediterranean Sea against Pollution from Land-Based Sources*, Athens, 1980, 1 HELLENIC REV. INT'L REV. 123 (1980); *Protocollo relativo alla protezione del mar Mediterraneo contro l'inquinamento di origine terrestre* (Atene, 17 maggio 1980), 63 RIVISTA DI DIRITTO INTERNAZIONALE 821-29 (1980); Note, *Mediterranean Protocol on Land-Based Pollution: Regional Response to a Pressing Transnational Problem*, 13 CORNELL INT'L L.J. 329-49 (1980).

⁹³ See Allaby, *Environment*, in BRITANNICA BOOK OF THE YEAR 352, 354 (1983).

⁹⁴ Convention for the Protection of the Mediterranean Sea Against Pollution, *supra* note 91, at art. 23.

⁹⁵ This results from the fact that these two states are signatories of the Convention.

and Kenya), may accede to the arrangement.⁹⁶

The Mediterranean Action Plan served as a model for other regional seas programs. Its framework approach has been adopted, first, by the states bordering the Persian (Arabian) Gulf and the Gulf of Oman.⁹⁷ A conference, held in Kuwait in 1978 under the auspices of UNEP, adopted a framework Convention and a Protocol on cooperation in combating pollution by oil and other harmful substances in cases of emergency.⁹⁸ The Kuwait Action Plan follows, in general, the pattern of the Mediterranean arrangement, but it establishes a special regional organization for the protection of the marine environment. Other framework action plans, already initiated, include the Action Plan for West and Central African Region (Gulf of Guinea), adopted by the Conference of Abidjan in 1981,⁹⁹ and the Red Sea and Gulf of Aden Plan,¹⁰⁰ coordinated by the Arab League Educational, Cultural and Scientific Organization (ALECSO). The Gulf of Aden Plan, initiated in Jeddah in 1976, was finally adopted in 1982.¹⁰¹ It is interesting to note that UNEP acts here only in an advisory role because the Arab coastal states (except Egypt) refused to permit Israel to participate.¹⁰² Both Plans follow the framework approach with interrelated protocols similar to those of the Kuwait Action Plan. Another plan for the protection of semi-enclosed seas is the Action Plan for the Caribbean and the Gulf of Mexico (1981).¹⁰³ Action plans for the East Asian

⁹⁶ Convention for the Protection of the Mediterranean Sea against Pollution, *supra* note 91, at art. 36, para. 2.

⁹⁷ Regional Convention for the Protection of the Marine Environment from Pollution, Apr. 23, 1978, *reprinted in* 17 I.L.M. 501 (1978).

⁹⁸ The Action Plan, the Protocol Concerning Regional Co-operation in Combatting Pollution by Oil and Other Harmful Substances in Cases of Emergency, and the Resolutions adopted by the Conference are *reprinted id.* at 511, 526, and 536. On the Kuwait Action Plan, see Amin, *The Gulf States and the Control of Marine Pollution: Regional Arrangements and National Legislation*, 1982 LLOYD'S MAR. & COM. L.Q. 104; Amin, *Marine Pollution Regulations in the Persian Gulf*, 5 MAR. POL'Y REP. (1982); Momtaz, *Une Convention pour la Protection du Golfe Persique contre la Pollution*, No. 11/12 REVUE IRANIENNE DES RELATIONS INTERNATIONALES 387-99 (1978).

⁹⁹ The Final Act, Resolutions, Action Plan, Convention, and Protocol of the Conference of Plenipotentiaries on Co-operation in the Protection and Development of the Marine and Coastal Environment of the West and Central African Region are *reprinted in* 20 I.L.M. 729, 734, 738, 746, 756 (1981).

¹⁰⁰ On Feb. 14, 1982, the governments of Jordan, Saudi Arabia, Sudan, Somalia, Yemen Arab Republic, People's Democratic Republic of Yemen and the Palestine Liberation Organization (P.L.O.) signed the Final Act of the Jeddah Regional Conference of Plenipotentiaries on the Conservation of the Regional Environment and Coastal Areas in the Red Sea and Gulf of Aden. The Conference adopted a Convention and a Protocol which deals with pollution by oil and other harmful substances. *See note reprinted in* 22 I.L.M. 219 (1983).

¹⁰¹ *Id.*

¹⁰² Alexander, *Regional Co-operation in Marine Science*, *supra* note 1, at II-49.

¹⁰³ Convention for the Protection and Development of the Marine Environment of the Wider Caribbean Region, Mar. 24, 1983, *reprinted in* 22 I.L.M. 227 (1983). Protocol Con-

Seas, the Southeast Pacific, and the Southwest Pacific (including the Solomon Sea) are in various stages of preparation,¹⁰⁴ and the East African and the Southwest Atlantic Plans are being explored. As a result of all these plans and preparatory schemes, among semi-enclosed seas only the Baffin Bay-Davis Strait, the Bering Sea, the Black Sea and the Sea of Okhotsk are not covered by any existing or planned regional arrangements for environmental protection.

The Baltic Sea stands out as a unique marine operational region. Set up by the 1974 Helsinki Conference of the seven Baltic states (Denmark, Finland, East and West Germanys, Poland, Sweden, and the Soviet Union),¹⁰⁵ the Baltic arrangement represents the only comprehensive regional approach to the protection of the marine environment from pollution of all sources. It is also notable in that the agreement incorporates in an annex,¹⁰⁶ virtually unchanged, the rules of the International Convention for the Prevention of Pollution from Ships of 1973 (MARPOL) on vessel-source pollution, which would otherwise have been binding for the Baltic states only as of October 2, 1983. The Baltic arrangement, which incidentally complements the Convention on Fishing and Conservation of the Living Resources of the Baltic Sea and the Belts,¹⁰⁷ is a remarkable example of international cooperation among states situated in the same marine region but divided by ideology and different foreign policy orientations. Three are members of the Soviet-sponsored Council of Mutual Economic Aid (CMEA) and Warsaw Pact (Poland, East Germany, U.S.S.R.), two (Denmark and West Germany) belong to the EEC and the North Atlantic Treaty Organization (NATO), and two are among the European "neutralist" nations (Sweden and Finland).

It has been noted that an impenetrable thicket of international organizations and other bodies participate in one way or another in matters related to the global protection of the marine environment. The situation appears to be even more complex in regional management where regional

cerning Co-operation in Combatting Oil Spills in the Wider Caribbean Region, Mar 24, 1983, *reprinted in id.* at 240 (1983). On the Caribbean marine region, see Thacher & Meith, *The Caribbean Example*, 3 OCEAN Y.B. 223 (1982).

¹⁰⁴ See JOHNSTON, ENVIRONMENTAL MANAGEMENT IN THE SOUTH CHINA SEA: LEGAL AND INSTITUTIONAL DEVELOPMENTS (1982); Meith, *UNEP Southeast Asian Seas Programme*, 4 OCEAN Y.B. [forthcoming 1984].

¹⁰⁵ Convention on the Protection of the Marine Environment of the Baltic Sea Area, *supra* note 70. This Convention is analyzed in Boczek, *International Protection of the Baltic Sea Environment against Pollution: A Study in Marine Regionalism*, 72 AM. J. INT'L L. 782-814 (1978).

¹⁰⁶ Convention on the Protection of the Marine Environment of the Baltic Sea Area, *supra* note 70, art. 7 and Annex IV.

¹⁰⁷ Convention on Fishing and Conservation of the Living Resources in the Baltic Sea and the Belts, Sept. 13, 1973, *supra* note 69. See Boczek, *The Baltic Sea: A Study in Marine Regionalism*, 23 GERMAN Y.B. INT'L L. 196 n.7 (1981).

bodies either independently or in cooperation with global agencies take part in various aspects of marine pollution control in regional seas. Generally, a distinction can be made between regional arrangements within the framework of the United Nations system and those outside of it. Among the former, UNEP's regional seas action plans occupy a prominent place. This specialized agency of the United Nations has become the central force behind the coastal states of regional seas mobilizing them for action to protect and preserve their marine environment. UNEP also acts as an overall coordinator for an integrated approach to a given marine region. A typical UNEP action plan is adopted by an international conference following: (1) the identification of the region;¹⁰⁸ (2) an assessment of the pollution problem in the marine region in collaboration with other United Nations agencies;¹⁰⁹ (3) the preparation of a draft action plan in consultation with the governments concerned and appropriate U.N. agencies; and, (4) a review of the draft by experts nominated by the participating governments.¹¹⁰ The second category of U.N. bodies are associated with the regional protection of the marine environment through ad hoc regional projects, such as cooperative research projects of the IOC and regional seminars and workshops. Some global programs also have their own regional components. For example, the Global Investigation of Pollution in the Marine Environment (GIPME) has been concerned with a number of regional pollution projects involving UNEP. Further, regional Economic Commissions of the Economic and Social Council (ECOSOC) and regional offices of some specialized agencies, such as the FAO and UNESCO, are also involved in the study of marine pollution in the regional seas. Finally, those specialized agencies of the United Nations which are otherwise not related to marine affairs have contributed to the UNEP Regional Seas Programme. Intervention of U.N. agencies in the regional management of ocean pollution does bring certain advantages to the states of the region, especially in the developing world. The organization provides funding, administrative services and a certain coordination. However, inasmuch as U.N. agencies cannot impose legally binding management measures upon states participating in global activities, neither can such measures legally bind the participants of regional plans.

Regional organizations and other bodies outside the United Nations system which play some role in the regional programs of marine pollution

¹⁰⁸ Eight regional seas have been identified for action by UNEP.

¹⁰⁹ Such as the Intergovernmental Oceanographic Commission (IOC) of the United Nations Educational, Scientific and Cultural Organization (UNESCO), the Food and Agriculture Organization (FAO), World Meteorological Organization (WMO) or International Maritime Organization (IMO).

¹¹⁰ Alexander, *Regional Co-operation in Marine Science*, *supra* note 1, at II-42.

control are of two kinds. First, some agreements which complement U.N.-sponsored arrangements, whether in the UNEP Regional Seas Programme or in marine regions, are not covered by any U.N. organization. Among these are organs created by independent regional conventions, such as the Commissions under the 1972 Oslo dumping¹¹¹ and the 1974 Paris land-based pollution¹¹² Conventions as well as the Baltic Marine Environment Commission.¹¹³ Also in this category are independent regional marine science organizations, the most important of which is the International Council for the Exploration of the Sea established in 1902.¹¹⁴ The other kind of regional organizations involved in the regional protection of the marine environment are the familiar "land-based" regional organizations, such as the EEC, Council of Europe, CMEA, Association of South East Asian Nations (ASEAN), Organization of African Unity (OAU) and the Arab League. Some of these organizations have played an important role in formulating regional principles of the law of the sea. The EEC is a party to regional marine environment conventions and issues environmental regulations which are binding upon its members.¹¹⁵ One problem to be explored is whether and to what extent such "land-based" regional organizations which link the nations of one region by economic, political, ideological, cultural or ethnic ties strengthen, in a "spill-over" effect, the unifying forces of a marine regional arrangement.

VI. UNCLOS CONVENTION

Preservation of the marine environment was one of the major issues before the Third United Nations Conference on the Law of the Sea (UNCLOS). The relevant environmental protection provisions of the UNCLOS Convention form part XII of the Convention.¹¹⁶ Since the UN-

¹¹¹ See Convention for the Protection of Marine Pollution by Dumping from Ships and Aircraft, *supra* note 46.

¹¹² See Convention for the Prevention of Marine Pollution from Land-Based Sources, *supra* note 78.

¹¹³ See Convention on the Protection of the Marine Environment of the Baltic Sea Area, *supra* note 70.

¹¹⁴ The United States has been a party to the ICES Convention since 1973. See Convention for the International Council for the Exploration of the Sea, Sept. 12, 1964, 24 U.S.T. 1080, T.I.A.S. No. 7628, 652 U.N.T.S. 237.

¹¹⁵ See Cremona, *The Role of the EEC in the Control of Oil Pollution*, 17 COMMON MKT. L. REV. 171-89 (1980); Mastellone, *The External Relations of the EEC in the Field of Environmental Protection*, 30 INT'L & COMP. L.Q. 104-17 (1981).

¹¹⁶ Protection and preservation of the marine environment is comprehensively dealt with in the UNCLOS Convention, *supra* note 5, at pt. XII (arts. 192-237). In addition, Article 145 deals with the protection of the marine environment of the "Area," that is, the seabed and the ocean floor and its subsoil, beyond national jurisdictions. Part XII is reviewed critically in G. TIMAGENIS, *MARINE POLLUTION AND THE THIRD UNITED NATIONS CONFERENCE ON THE LAW OF THE SEA: THE EMERGING REGIME OF MARINE POLLUTION* (1977); Kiss, *La*

CLOS Convention more or less authoritatively reflects international consensus and current trends in the law of the sea, it is of interest to inquire into its position vis-à-vis the global and regional approaches to the preservation of the marine environment.

The UNCLOS Convention is the first global attempt at a comprehensive, though general, regime adopted to deal with pollution from all sources, although it does place much emphasis on vessel-source pollution.¹¹⁷ Its provisions bind the parties without prejudice to their specific obligations assumed under other conventions¹¹⁸ (such as the conventions reviewed in this study). These obligations, however, must be carried out in a manner consistent with the general principles of the UNCLOS Convention.¹¹⁹ While imposing upon states the obligation to protect and preserve the marine environment and take all necessary unilateral and joint measures to prevent, reduce and control pollution, the UNCLOS Convention does not show any special preference for a global or regional approach. On the contrary, both are explicitly endorsed in a special section on "Global and Regional Cooperation" of Part XII and in numerous references to global and regional cooperation and international organizations at both global and regional levels.¹²⁰ The UNCLOS Convention provides that "States shall co-operate on a global basis and, as appropriate, on a regional basis, directly or through competent international organizations . . . taking into account characteristic regional features."¹²¹

While making references to "regional" and "subregional" cooperation and organizations, the UNCLOS Convention fails to provide definitions of "region" and "subregion" for purposes of marine regionalism.¹²² How-

pollution du milieu marin, 38 ZEITSCHRIFT FÜR AUSLÄNDISCHES ÖFFENTLICHES RECHT UND VÖLKERRECHT 902-32 (1978); Livingston, *Marine Pollution Articles in the Law of the Sea Single Informal Negotiating Text* (Occasional Paper of the Law of the Sea Institute 1976). See also T. McDORMAN, N. LETALIK, H. MILES, D. JOHNSTON & E. GOLD, *THE MARINE ENVIRONMENT AND THE CARACAS CONVENTION ON THE LAW OF THE SEA: A STUDY OF THE THIRD UNITED NATIONS CONFERENCE ON THE LAW OF THE SEA AND OTHER RELATED MARINE ENVIRONMENTAL ACTIVITIES* (1981); Rucker, *The Politics of Ocean Pollution: The Third Law of the Sea Conference and International Structures for Environmental Protection*, 1 B.C. INT'L & COMP. L.J. 283-320 (1977); Schneider, *Codification and Progressive Development of International Environmental Law at the United Nations Conference on the Law of the Sea: The Environmental Aspects of the Treaty Review*, 20 COLUM. J. TRANSNAT'L L. 243, 253-75 (1981).

¹¹⁷ UNCLOS work in this area of vessel-source pollution is analyzed in Bernhardt, *A Schematic Analysis of Vessel-Source Pollution: Prescriptive and Enforcement Regimes in the Law of the Sea Conference*, 20 VA. J. INT'L L. 265-311 (1980); Kiss, *supra* note 92.

¹¹⁸ UNCLOS Convention, *supra* note 5, at art. 237.

¹¹⁹ See *id.*, pt. XII, § 2 (arts. 197-201).

¹²⁰ *Id.* at art. 197.

¹²¹ *Id.*

¹²² The reference to five specific geographical regions of the world, included in article 161(1)(e) of the UNCLOS Convention, dealing with the selection of the 36 members of the

ever, as quoted above,¹²³ the Convention defines the "enclosed or semi-enclosed sea" in Part XI, which governs this type of marine region. States bordering such a sea "should cooperate with each other . . . [and] shall endeavour, directly or through an appropriate international organization . . . [t]o co-ordinate the implementation of their rights and duties with respect to the protection and preservation of the marine environment."¹²⁴ This is one of the many explicit references to international organizations, global or regional, in the provisions dealing with the preservation of the marine environment. However, as a rule, the use of these mechanisms is not mandatory. For example, in combating pollution from land-based sources and from sea bed activity on the continental shelf, states shall only "endeavour" to harmonize their national policies at the appropriate regional level.¹²⁵ It is also significant that states bordering a semi-enclosed sea are under no obligation to coordinate the implementation of their rights and duties; they shall only "endeavour" to coordinate them.¹²⁶ Using this language, the UNCLOS Convention avoids imposing a regional regime upon coastal states which for various reasons would not be willing to join it.

The tasks assigned to competent international organizations largely involve cooperation, promotion of research, dissemination of information and extending scientific and technical assistance to less developed countries. Insofar as standards for combating pollution are concerned, the UNCLOS Convention calls upon states "acting especially through competent international organizations or diplomatic conference" to "endeavour to establish global and regional rules, standards and recommended practices and procedures to prevent, reduce and control pollution."¹²⁷ There are ample opportunities for regional cooperation under the UNCLOS Convention, but the text lacks specificity and a mandatory nature. References to the regional approach appear to be a favorite position to take in the face of otherwise difficult or unresolved issues. Still, in practice much will depend on global and regional organizations' initiative in exploring opportunities existing in the references to their role in the text of the UNCLOS Convention. In this respect there are special possibilities for IMO and UNEP to lead in the development of rules concerning vessel-source pollution and pollution from land-based sources respectively.

The conclusions to be drawn concerning the position of the UNCLOS

International Sea-Bed Authority Council, has nothing to do with marine regionalism.

¹²³ See *supra* note 66 and accompanying text.

¹²⁴ UNCLOS Convention, *supra* note 5, at art. 123.

¹²⁵ *Id.* at arts. 207(3), 208(4).

¹²⁶ *Id.* at art. 123.

¹²⁷ *Id.* at arts. 207(4) (pollution from land-based sources), 210(4) (pollution from dumping) and 212(3) (pollution from or through the atmosphere). "Shall establish," a more mandatory formulation, is found in article 208(5) (pollution from sea-bed activities).

Convention are, first, that it basically confirms the international practice of the two-track, global and regional (and subregional) approach and, second, that the UNCLOS Convention endorses marine regionalism for reasons that are noted in this study. The UNCLOS Convention does not provide any consistent and harmonizing framework for the control of marine pollution. Rather it relies on the discretionary power of the parties to choose the best practicable approach in meeting their legal obligation to preserve the marine environment. The chances are, therefore, that regionalism will continue to be the best reasonable alternative to the global solution. It is being strengthened by the otherwise prevailing trend among the developing countries toward regional and subregional cooperation and decentralization of the activities of the global international organizations in the name of regionalism proclaimed as an integral part of the New International Economic Order.

VII. CONCLUSIONS AND POLICY RECOMMENDATIONS

This survey of the international approaches to the protection and preservation of the marine environment allows the conclusion that both global and regional approaches have been applied in states' practice. Regionalism serves as a intermediate method between the global regulation of marine pollution and the basically inadequate unilateral national approach. In addition to avoiding the high level of abstraction of global law, the regional approach, used either alone or as a complement of global action, is better suited to the specific environmental features and needs of a particular marine region. In this way, both approaches coexist in international marine law and policy. Moreover, some global conventions encourage regionalization of their provisions, and regional conventions, in turn, influence the contents of global agreements and other regional regulations. Regional solution has proved particularly suitable in managing and controlling pollution in semi-enclosed seas.

Insofar as the network of operational marine regions and global regulations is concerned, the situation depends on the type of pollution. The coverage is perhaps more satisfactory in the area of dumping than in others because pollution from this source is being covered both by a global regime and some regional arrangements. Vessel-source pollution caused by operational discharges is regulated by the 1954 London Convention¹²⁸ and, since October 1983, by the 1973 MARPOL Convention¹²⁹ which provides for more stringent rules in "special areas" particularly vulnerable to oil pollution. Protection against accidental spills is now gov-

¹²⁸ See International Convention of Pollution of the Sea by Oil (1954), *supra* note 31.

¹²⁹ See International Convention for the Prevention of Pollution from Ships (MARPOL) (1973), *supra* note 41.

erned by numerous regional plans, mostly under the UNEP Regional Seas Programme. As yet there are no global arrangements for the control of pollution resulting from offshore sea bed exploration and exploitation, pollution from land-based sources and pollution from or through the atmosphere. However, pollution hazards from offshore drilling in the Baltic region are covered by the operational arrangement of the comprehensive, regional Baltic Convention,¹³⁰ which is independent of the United Nations system. These hazards will also be dealt with in a special protocol under the Mediterranean Action Plan and similar plans of UNEP's Regional Seas Programme. Pollution from land-based areas in the most vulnerable areas of the European waters (Northeast Atlantic, Baltic, Mediterranean) is now managed and controlled by regional regimes. Pollution from and through the atmosphere requires urgent action since it is dealt with only in the Baltic regional and subregional arrangements. Finally, the UNCLOS Convention includes provisions comprehensively, but generally, regulating marine pollution from all sources.¹³¹

Experience has shown that the choice of a global or regional solution depends primarily on the nature of the problem. Thus pollution from vessels, as an essentially global problem, requires global action, especially in the case of the operational discharges. Global action will also have to be undertaken to protect the ocean environment against pollution that may arise from sea bed mining. Yet, states appear ready to engage in regional initiatives when unilateral action is obviously not sufficient and global regulation non-existent or inappropriate, when the challenge to their common marine environment has reached crisis proportions and when they perceive a realistic chance of coping with their challenge.

Despite gaps that still exist both in global and regional coverage of marine pollution, much progress has been made, especially at the regional level, over the last decade or so.¹³² This positive development has been codified by the UNCLOS Convention of 1982.¹³³ Despite initial opposition on the part of some developing countries, the UNCLOS Convention endorses the dual-track approach and explicitly refers to global and regional solutions and organizations.

In conclusion, a number of policy recommendations, which are designed to improve the global and regional regimes of marine environmental protection, should be made. First, for the sake of comprehensive treatment, pollution sources still unregulated by the global regime (pollu-

¹³⁰ Convention on the Protection of the Marine Environment of the Baltic Sea Area, *supra* note 70.

¹³¹ See *supra* notes 116-27 and accompanying text.

¹³² Some decrease in the level of marine pollution was found by the UNEP Regional Seas Programme. See *THE HEALTH OF THE OCEANS*, *supra* note 11.

¹³³ UNCLOS Convention, *supra* note 5.

tion through and from the atmosphere and from offshore drilling) should be the subject of future arrangements. Regionally, UNEP should continue its Regional Seas Programme to cover the remaining semi-enclosed seas and vulnerable areas of ocean basins and international straits.¹³⁴ Second, the network of U.N. bodies involved in matters related to the preservation of the marine environment must be harmonized and better coordinated. Coordination between U.N.-sponsored activities and programs outside the U.N. system is also advisable. In the marine regions of North-western Europe, multiplicity of regional conventions also raises the problem of coordination with regard to overlapping jurisdictions and areas of activity. In order to eliminate overlapping and waste, the links between global agencies and regional systems must be solidified, and the cooperation among regional arrangements and programs within one regime must be furthered. Third, successful continuation of regional programs, which are moving more into the regions of the Third World, depends to a large extent on technical and financial aid to the developing nations. Finally, in the midst of the trend toward marine regionalism one must not lose sight of the global dimension of the human environment. As regionalism on land, regional management of the oceans cannot in the long run replace the global perspective. It can only try to maintain the right balance between the two approaches in an international system of interdependent nation-states.

¹³⁴ Among the latter, the Straits of Malacca are particularly vulnerable. See Note, *Navigational Safety, Oil Pollution and Passage in the Straits of Malacca*, 20 MALAYA L. REV. 287-307 (1978).