

Greening African Ports: Environmental Governance Transformations in a Network Society



Harry Barnes-Dabban

Greening African Ports:

Environmental Governance Transformations in
a Network Society

Harry Barnes-Dabban

Thesis Committee

Promotors

Prof. Dr Arthur P.J. Mol
Professor of Environmental Policy
Wageningen University & Research

Prof. Dr Jan P.M. van Tatenhove
Personal chair at the Environmental Policy Group
Wageningen University & Research

Co-promotor

Dr Kris S.A van Koppen
Associate Professor, Environmental Policy Group
Wageningen University & Research

Other members

Prof. Dr Bas J.M. Arts, Wageningen University & Research
Prof. Dr Elvis Nyarko, Regional Maritime University, Accra, Ghana
Dr Carel Dieperink, Assistant Professor, Utrecht University, The Netherlands
Dr Geoffrey L.F. Hagelaar, Wageningen University & Research

This research was conducted under the auspices of the Graduate School for Socio-Economic and Natural Sciences of the Environment (SENSE).

Greening African Ports:
Environmental Governance Transformations in
a Network Society

Harry Barnes-Dabban

Thesis

submitted in fulfilment of the requirements for the degree of doctor

at Wageningen University

by the authority of the Rector Magnificus,

Prof. Dr A.P.J. Mol,

in the presence of the

Thesis Committee appointed by the Academic Board

to be defended in public

on Friday 22 June 2018

at 1:30 p.m. in the Aula.

Harry Barnes-Dabban

Greening African Ports: Environmental Governance Transformations in a Network Society, 242 pages.

PhD thesis, Wageningen University, Wageningen, the Netherlands (2018)

With references, with summary in English

ISBN: 978-94-6343-860-5

DOI: <https://doi.org/10.18174/446687>

To Lynette, Curtis, Kylene and Kyle

Preface

This book derives its roots from the first Municipal Environmental Policies Course (ICHUD 72) ran by the Institute for Housing and Urban Development Studies (IHS), Erasmus University, Rotterdam, in 1998. It all began in the ‘Round Building’ under the tutelage of Ed Frank and Jos Frijns, who guided me through my course work in which I studied environmental implications of seaport activities on the Urban Environment, by comparing the Port of Tema, my workplace then, and the Port of Rotterdam. The study aroused a desire in me to bring the environmental policy knowledge acquired to bear on the Port of Tema, as environment was then not part of the port’s vocabulary. The desire was incensed by my subsequent MSc studies in Wageningen University, particularly from the Environmental Policy Group’s then foremost theoretical concept, ‘ecological modernisation’, taught by Arthur Mol and Gert Spaargaren. At that stage, my port environmental interest went beyond Tema towards a regional scale, as my practice and exposure revealed a yawning environmental gap waiting to be ‘rescued’ across African ports. African ports are restructuring institutionally and infrastructurally with the view to promoting efficiency, but attendant implications for the environment and how to address them are less prominent.

As an ardent practitioner exposed to science, the collective stewardship of science and society responding mutually to address the environmental gap for African ports has become a ‘big dream’ that I cannot shirk. It is the pursuit of this dream that has culminated in this PhD Thesis. Comments like *‘the dream to make African ports green cannot keep the soup boiling in the pot’*, by a highly placed official of one of Africa’s biggest ports, which rightly captures how environment is perceived in African ports gave me a huge humor but also motivates me to keep the dream alive, trusting it will *‘boil the soup in the pot some day’*.

This PhD thesis is an ambition to bridge science and policy through aligning theoretical conceptualisations with practice innovations for a particularly contemporary topic – port environmental governance - that is not yet visible on both the scholarly and policy agenda for Africa. The thesis attempts to find a way out of extant scientific conceptualisations to analyse, in a pioneering attempt, empirical realities that evidence shifts in port environmental governance in Africa from predominantly statist to innovative state-non-state arrangements in which state, economic, and society actors from sub-national, national, regional and international levels across multiple states play roles in institutionalising port environmental regionalisation in a globalising society.

The thesis is therefore a tangible and demonstrative work for a better understanding of institutional factors that enable and constrain regionalising marine environmental governance by political decision-makers and practitioners. It stimulates insights into the dynamics of port environmental policy-making through implementation and understanding the challenges and options involved. Additionally, it offers a conceptual model for further comparative research in different geo-political regions.

Table of Contents

Preface	vii
Tables & Figures	xiv
List of Tables	xiv
List of Abbreviations	xv
Chapter 1. Introduction	1
1.1 Changing environmental governance in West and Central African ports	3
1.2 Globalising trends for ports: implications for environmental policy-making in West and Central African ports	8
1.2.1 Increasing public-private partnerships	10
1.2.2 Increasing regional seas influence	11
1.2.3 Changing environmental governance settings for West and Central African ports	12
1.3 Research objective	13
1.4 Research questions	14
1.5 Theoretical approach	15
1.5.1 Port-level (sub-national) environmental change	15
1.5.2 Port environmental reform in a national context	16
1.5.3 Regional influence on port environmental reform	17
1.5.4 Multiple level interplay in port environmental policy-making	18
1.6 Research methodology	19
1.6.1 Qualitative research techniques	20
1.6.2 Data collection strategy	22
1.6.3 Data analysis	23
1.6.4 Researcher objectivity	24
1.7 Structure of the thesis	25
Chapter 2. Institutionalising environmental reform with sense-making: West and Central African ports and the ‘green port’ phenomenon	27
2.1 Introduction	29
2.2 Overview of Freeport of Monrovia	32

2.3 Conceptual framework: institutionalizing with sense-making	34
2.3.1 Sense-making in ambiguous situation	35
2.3.2 Institutional context mechanisms	38
2.4 Going green: making sense of Freeport of Monrovia’s environmental reform	39
2.4.1 Triggering sense-making	42
2.4.2 Priming cues and actions	43
2.4.3 Editing frames and interactions	46
2.5 Discussion	48
2.5.1 Role for sense-agents	48
2.5.2 Openness to unknowable envisaging	49
2.5.3 Organizational culture	50
2.5.4 Collective pragmatic action	51
2.6 Conclusion	52
Chapter 3. Environmental reform of West and Central African ports: the influence of colonial legacies	55
3.1 Introduction	57
3.2 Management models for West and Central African ports	61
3.3 Innovations in environmental protection: ecological modernization	63
3.4 West and Central African ports: a wave of environmental reform?	64
3.4.1 Abidjan port	64
3.4.2 Douala port	66
3.4.3 Lagos port	69
3.4.4 Tema port	71
3.4.5 Ecological modernization in the ports	73
3.5 Discussion	74
3.5.1 Globalized economic and political dynamics	74
3.5.2 National politico-administrative structures	77
3.5.3 Local conditions and port institutions	78
3.6 Conclusion	79

Chapter 4. The influence of the regional coordinating unit of the Abidjan Convention: implementing environmental agreements to prevent shipping pollution in West and Central Africa	81
4.1 Introduction	83
4.2 Conceptualising influence: international bureaucracies and the implementation of multilateral environmental agreements	86
4.2.1 Autonomy-centred influence of International Bureaucracies	87
4.2.2 Regulatory-politics and state receptivity to the influence of international bureaucracies	88
4.2.3 Transnational governance prospects for the influence of international bureaucracies	88
4.3 The regional coordinating unit and three autonomy-centred pathways	89
4.3.1 Cognitive pathway: brokering knowledge	89
4.3.2 Normative pathway: facilitating negotiations	90
4.3.3 Executive pathway: capacity building	91
4.4 Domestic (National) regulatory-politics	92
4.4.1 Domestic institutions	92
4.4.2 Societal actors	94
4.4.3 Political commitment	94
4.5 Transnational governance	95
4.5.1 Agency beyond the state	95
4.5.2 Architecture	97
4.6 Discussion	98
4.7 Conclusion	101
Chapter 5. Regional convergence in environmental policy arrangements: a transformation towards regional environmental governance from West and Central African ports?	103
5.1 Introduction	105
5.2 Environmental governance transformation: policy arrangements approach	108
5.3 Regional environmental policy arrangements in West and Central Africa and implications for the region's ports	110

5.3.1	State-based regional environmental policy arrangement	110
5.3.2	Emergent innovative joint environmental policy-making arrangement	116
5.4	Factors influencing the transformation of environmental governance for West and Central African ports?	121
5.4.1	Institutional alignment	122
5.4.2	Political communication and consultation	123
5.4.3	State passivity	124
5.5	Conclusion	125
Chapter 6.	Conclusion	127
6.1	Introduction	129
6.2	Port environmental governance transformation	131
6.2.1	Port-level (sub-national) environmental change	131
6.2.2	Port environmental reform in a national context	133
6.2.3	Regional influence on port environmental reform	136
6.2.4	Multiple level interplay in port environmental policy-making	138
6.3	Synthesis of findings	140
6.3.1	Key institutional aspects	141
6.4	Recommendations and future outlook	146
6.4.1	Towards a future research agenda	146
6.4.2	Recommendations for policy	147
Bibliography		149
Summary		171
Acknowledgement		175
Appendix 1: List of Interview/Questionnaire Respondents		179
Appendix 2: Interview Guide		184
Appendix 2.1: Interview Guide on Port Environmental Issues		184
Appendix 2.2: Interview Guide on Environmental Regulations and Policy Performance		201
Appendix 2.3: Interview Guide for Port Authorities of Case Study Ports		205
Appendix 2.4: Interview Guide for Shipping Lines & Terminal Operators		212

Appendix 2.5: Interview Guide for International and Regional Institutions	218
About the Author	223
SENSE Certificate	225

Tables & Figures

List of Tables

- Table 1.1: Traffic statistics for WCA ports (2014 – 2015)
- Table 2.1: Cargo throughput for Freeport of Monrovia 2012 – 2016
- Table 2.2: Matrix for sense-making of environmental reform in the FoM's institutional context
- Table 3.1: Overview of environmental issues for WCA ports
- Table 3.2: Port characteristics
- Table 3.3: Environmental reform dynamics in studied ports
- Table 4.1: Characteristics of RCU as an International Bureaucracy
- Table 4.2: Understanding the potential influence of RCU as an International Bureaucracy in preventing shipping pollution
- Table 5.1: Regional environmental policy arrangements for WCA and its ports
- Table 5.2: Divergences in environmental policies of WCA ports under state-based regional arrangement

List of Figures

- Figure 1.1: Map showing countries of the five West and Central African ports Studied
- Figure 1.2: Visualisation of multiple level environmental governance interactions for WCA ports in a global setting
- Figure 1.3: Research methodology and design
- Figure 1.4: Structure of the thesis
- Figure 2.1: Map showing the Freeport of Monrovia in Liberia
- Figure 2.2: Understanding sense-making within institutional context
- Figure 2.3: Dynamics for institutionalising sense made of 'going green' as FOM's environmental reform
- Figure 3.1: The West and Central Africa coastline showing the four ports studied.
- Figure 4.1: Understanding the influence of International Bureaucracies
- Figure 5.1: Understanding multiple level environmental policy arrangements in a regional convergence.
- Figure 6.1: Spaces of interactive interplay transforming environmental governance for WCA ports

List of Abbreviations

AC	Abidjan Convention
AfDB	African Development Bank
ANDE	National Environmental Agency
APEC	Asia-Pacific Economic Co-operation
AU	African Union
BC	Basel Convention
BWMC	International Convention for the Control and Management of Ships Ballast Water and Sediments
CIAPOL	Ivorian Antipollution Centre
CoP	Conference of Parties
CSOs	Civil Society Organisations
DIT	Douala International Terminal
DP World	Dubai Ports World
EIA	Environmental Impact Assessment
EMP	Environmental Management Plan
ENGO	Environmental Non-Governmental Organisation
EPA	Environmental Protection Agency
ESIA	Environmental and Social Impact Assessment
ESPO	European Sea Ports Organisation
FoM	Freeport of Monrovia
GCLME	Guinea Current Large Marine Ecosystem
GDP	Gross Domestic Products
GHC	Green House Gas
GI-WACAF	Global Initiative for West, Central and Southern Africa
GMA	Ghana Maritime Authority
IB	International Bureaucracy
ICG	International Crises Group
IGCC	Interim Guinea Current Commission
IMO	International Maritime Organisation
IOC/ODINAFRICA	Ocean Data and Information Network for Africa project of the Inter-governmental Oceanographic Commission of UNESCO
IPIECA	Global Oil and Gas Industry Association for Environmental and Social Issues
ISO	International Standards Organisation
ISPS	International Ship and Port Security Code
IUCN	International Union on Conservation of Nature
MARPOL	International Convention for the Prevention of Pollution from Ships
MEA	Multilateral Environmental Agreements
MinEEF	Ministry of Environment, Waters and Forests
MinENP	Ministry of Environment and Nature Protection

MinT	Ministry of Transport
MoT	Ministry of Transport
MOWCA	Maritime Organisation for West and Central Africa
NESREA	National Environmental Standards Regulations and Enforcement Agency
NFPs	National Focal Points
NGO	Non-Governmental Organisation
NIMASA	Nigerian Maritime Administration and Safety Agency
NOSDRA	National Oil Spill Detection and Response Agency
NPA	National Ports Authority
NSA	Non-State Actors
OPRC	International Convention on Pollution Preparedness, Response and Co-operation
OSPAR	Extension of the 1972 Oslo Convention against Dumping to cover Land-Based Sources of Marine Pollution and the Offshore Industry by the 1974 Paris Convention
PCP	Port Contact Person
PENAF	Ports Environmental Network-Africa
PESN	Port Environment and Safety Network
PMAWCA	Port Management Association for West and Central Africa
PRF	Port Reception Facilities
RCU	Regional Coordinating Unit
ROSCP	Regional Oil Spill Contingency Plan
RSAP	Regional Strategic Action Plan
SAPEIPP	Strategic Assessment of Port Environmental Issues, Policies and Programmes
TEU	Twenty Equivalent Units
UN	United Nations
UNCTAD	United Nations Conference on Trade and Development
UNEP	United Nations Environment Programme
WACAF	West and Central Africa
WCA	West and Central Africa

Chapter 1. Introduction

1.1 Changing environmental governance in West and Central African ports

Ports are considered ‘nodes’ of transport that lie on the interface between sea and land modes of transport (see Nauke, 1992: 17). They play a key role in international trade, as they provide countries with access to international markets through shipping. For states in West and Central Africa (WCA), efficient ports are crucial because 90% of their international trade is sea-bound (Harding et al., 2007). The region, stretching from Mauritania to Angola has 46 ports that are between small and medium sizes. Five of these ports, shown in Figure 1.1, are studied in this thesis. As a region, WCA has a high export concentration that makes shipping and ports an important sector for its economies. The region’s states depend mostly on the export of bulk primary commodities that include cocoa, manganese, bauxite, and iron ore, as well as agricultural products and timber. With significant oil found in most WCA states, crude oil adds to the export dependency. In addition to dependence on exports, domestic demand is increasingly becoming a driver for import dependency and for maintaining the role and need for ports. This demand is being boosted by population growth. There is an increasing domestic demand in WCA economies for petroleum fuel importations to meet their increasing energy needs (Adenikinju, 2008). Additionally, a substantial share of domestic food consumption is imported (Wordon et al., 2008).

Amidst WCA’s export-import dependencies, the real GDP of oil-importing African states, WCA included, grew at an annual rate of 3.0% in 2016, which was close to Africa’s documented rate of 3.3% (see AfDB, 2017). This growth is projected to continue (see World Bank, 2017) given increasing domestic demand as an anchor (AfDB, 2017). Continuing economic growth means growing trade, growing trade means increasing shipping, and increasing shipping means port growth. In fact, some major ports in WCA are already showing growth with increasing cargo throughputs and vessel traffic in recent years (Table 1.1). This growth implies that WCA ports have generally increasing port and shipping activities. Growing trade is therefore interesting for the ports, but there is a caveat in that it has environmental implications.



Figure 1.1: Map showing the countries of the five West and Central African ports studied

WCA ports have to address environmental repercussions associated with port growth through increasing shipping. If not, economic gains made can be eroded. Operational activities of the ports to a large extent require land, water, and energy resources as well as the use of raw materials. Activities from landside of the ports (port areas and hinterlands) generate wastes and residue that include emissions of smog, dust, particulate matter, diesel exhaust, nitrogen oxides, and odours into the air; leaks and releases of oil and chemicals, effluent discharges, and surface water run-offs to soil and water; all of which negatively impact the environment. There are also impacts from noise pollution and traffic congestion. Activities from the waterside (oceans and navigable waters), which arise basically from shipping, bring along the potential of increasing ballast water discharge, which is a source for the transfer of marine invasive species; increasing biofouling and accidental oil spills, which can

have detrimental consequences on marine fauna; increasing ship-generated and hazardous wastes, which require adequate collection and treatment facilities in order to avert soil, air and water pollution, which can have deleterious effects on public health (see Van Wingerde, 2015); and emissions of sulphur dioxides (SO₂), nitrogen oxides (NO_x) and volatile organic compounds (VOCs) that impact air quality.

Table 1.1: Traffic statistics for WCA ports (2014 – 2015)

PORT (COUNTRY)	TOTAL CARGO TRAFFIC (TONNES)		TOTAL CONTAINER TRAFFIC (TEUs)		VESSEL TRAFFIC (UNITS)	
	2014	2015	2014	2015	2014	2015
DAKAR (Senegal)	13,412,416	15,187,937	484,997	529,724	2,643	2,705
CONAKRY (Guinea)	7,467,608	7,672,990	146,095	158,221	438	573
Abidjan (Cote d'Ivoire)	20,812,952	21,926,247	612,410	640,863	5,863	5,972
TEMA (Ghana)	10,963,050	12,068,744	732,382	782,502	*	*
LOME (Togo)	9,280,004	15,413,487	380,798	905,700	1,119	1,399
COTONOU (Benin)	10,547,445	9,374,127	389,045	390,822	*	*
LAGOS (Nigeria)	84,951,927	195,969,200	1,063,383	929,239**	5,405	5,014**
DOUALA (Cameroon)	10,791,717	12,302,558	333,555	348,410	*	*
POINTE NOIRE (Congo)***	8,593,925	7,420,457	619,692	571,860	4,228	4,676

Source: PMAWCA¹ Secretariat

* Figures not available

** The Nigerian government introduced some controls on imports banning some products and also instituting punitive taxes on others. This affected import traffic for 2015.

*** Drop in cargo and container traffic but increase in vessel traffic.

Shipping also emits carbon dioxide (CO₂), the most important greenhouse gas (GHG), with potential for global warming. Beside landside and shipping activities of ports, the development and expansion of ports, as currently ongoing for Tema (PFI, 2014; van Dyck, 2015), and the maintenance of draughts for their navigable depths through dredging, have potential for removing habitats and species and smothering benthic habitats (see Sislian et al., 2016). Dredging can disrupt existing sand littoral drift and result in coastal recession that can endanger human settlements and

¹ Port Management Association for West and Central Africa

threaten coastal ecosystems (see Juhel, 2001). Dredged material from ports can be contaminated by anthropogenic sources such as sewage discharge, agricultural runoff, and industrial waste. Their disposal without due consideration to their characteristics and possible contamination can pose environmental risks. Dredging however, has become particularly important for WCA ports in their bid to improve competitiveness by increasing their capacity to receive modern ultra large container carriers.

WCA ports therefore present a two-sided situation. Although they are significant hubs of economic activity, contributing to the region's economic growth through facilitation of international trade, they are also a major source of potential environmental pollution that negatively impacts air, water, and soil quality with attendant losses/degradations of terrestrial habitats and changes in marine ecosystems.

WCA port authorities have to commit to multilateral environmental agreements, particularly those of the International Maritime Organisation (IMO), the United Nations' specialised agency with responsibility for the safety and security of shipping and the prevention of marine pollution by ships. The port authorities are obliged to implement IMO's international conventions and build appropriate institutional capacity to that effect. This action is premised on ports being sea-land interfaces for shipping and therefore subject to multilateral marine environment agreements implemented through regional, national and sub-national (local) environmental regulations and policies. WCA port authorities are therefore to ensure the sustainable management of their ports and associated waterways and preserve and enhance environmental value without degrading port facilities and navigational approaches. Unfortunately, however, policies in this direction have received low priority and little attention in the WCA region. The challenge for the ports, however, is that they are embedded in differing local circumstances with peculiar environmental characteristics and policy practices. However, they also have to contend with global environmental flows from materials and cargoes that come through them.

Port environmental policy formulation in WCA has traditionally been within the state domain and characterised by divergent institutional settings premised on different national political systems. Although some of the ports have clear environmental policy guidelines, they need to increase human, financial, technological, knowledge and infrastructure capabilities to develop environmental institutions and measures that are sustainable and consistent with international standards and practices. Progress, therefore, has been slow with practically little capability to prevent and protect the environment from pollution from port and shipping activities. Environmental threats facing the ports, as described above, are mostly transboundary and common among them. They are problems that no single state or

port can solve on its own, yet approaches to them are rooted in an inefficient pattern of state dominance in which the ports operate as fragmented entities without recourse to environmental links among them.

Notwithstanding environmental inefficiency, most WCA ports have since the year 2000 been undergoing institutional restructuring. Governments in the region, influenced by economic liberalisation – a feature of globalisation processes – have begun opening their ports to increased private sector participation. Economic liberalisation of the ports follows the belief that the transfer of operations from public to private actors has potential to enhance financial and operational performances and hence economic efficiency (see Cullinane and Song, 2002). The trend has thus offered WCA ports two transformative features. First, the port authorities have gained greater autonomy (as public non-state actors) from the state. Second, it has facilitated capital mobility and advanced technical expertise in port operations from private multinational terminal operators from around the globe.

The institutional restructuring has mostly focused on modifying and renovating port infrastructure, with multinational terminal operators participating as private economic actors. This restructuring has been with the view of strengthening the economic positions of the individual ports. Subsequently, the restructuring has transformed the forms of articulation and roles played by the port authorities as well as state actors in the governance of WCA ports. At the same time, the globalising trend of increasing participation of actors other than the state in environmental governance (see Biermann and Pattberg, 2012) is seeing the new private multinational terminal operators, port authorities, and regional and ENGO actors becoming involved in addressing environmental concerns of WCA ports. Together, the dynamics from the participation of these new actors are influencing the institutional settings for environmental policy-making in WCA ports. The definitions and solutions of port environmental problems are shifting away from the confined level of policy pursuit among state actors within the states. As the presence of new private economic actors is changing the structure and operations of the ports, the interactive dynamics at play are also redefining arrangements for port environmental policy and governance in WCA. The development does not only present new perceptions but indeed environmental governance transformations with three institutional aspects: *agency beyond the state* in which non-state actors are becoming key in shaping port environmental policy; *ad-hoc architecture* in which informal collaborative arrangements for rules of procedure and norms other than formal statist ones are emerging to address port environmental problems; and *interactiveness* in which multiple actors from multiple governance levels among multiple states deliberate non-hierarchically in mutual communication to formulate approaches and solutions to address environmental challenges facing the ports. These can be said to be changing and

reconstructing the rules of the port environmental policy game in terms of who participates and who is excluded in setting environmental agenda and who decides and defines port environmental problems and approaches at what level of governance and through which mechanism. WCA ports are therefore on the eve of major structural and strategic changes in the organisation and substance of environmental policy processes.

This thesis investigates how the shifting relations in environmental policy-making interactions and institutionalisation in WCA ports are happening. The thesis particularly zooms in on environmental interactions among actors and institutions and the interplay across multiple levels of governance – within respective ports at sub-national (local) level, within states at national level, and at the regional level. The concept of institutions is used loosely in the thesis to mean ‘a relatively stable collection of practices and rules defining appropriate behaviours for a specific group of actors in specific situations’ (March and Olsen, 1998). In this regard, institutionalisation is viewed as the process of developing and embedding environmental policies, practices and rules and routinizing them in WCA ports. The thesis makes use of different theoretical perspectives from the governance and environmental reform literature as building blocks to generate the needed incisive appreciation and understanding.

The rest of this introductory chapter is organised as follows. Section 1.2 expands on globalising trends changing the role of ports and more specifically how this change affects the institutional setting for environmental policy-making in WCA ports. Section 1.3 presents the research objective, and Section 1.4 states the research questions. Section 1.5 looks at the theoretical approach and empirical scope, while 1.6 introduces the research methodology. Section 1.7 presents the structure of the thesis.

1.2 Globalising trends for ports: implications for environmental policy-making in West and Central African ports

Globally, ports over the years have moved from their passive role of sites for loading, unloading and storage of cargo towards becoming a dynamic node in the international production and distribution network. Ports have taken on a new role in the logistical control of hinterland connections by integrating their activities in contiguous sites with those in non-contiguous locations (Monios and Wilmsmeier, 2012). This integration has been precipitated by globalisation processes that include technological advancements; consolidations, mergers and acquisitions among shipping lines and terminal operators; market and societal demands; and international environmental regulations. Since the mid-1970s, ports have had to address new technologies in the form of containerisation and information exchange, which have

affected port infrastructure requirements and greatly enhanced the quality and timely delivery of port services. Technological advancements coupled with flows of information are making port operations very sophisticated, creating competition among ports, and impacting the organisation of port activities. Ports have become dependent on information technology to control and move cargo and services, making door-to-door deliveries of cargo almost possible from anywhere to everywhere around the globe. Improved communication systems have provided faster access to information and improved port productivity.

The rise of containerisation was followed by aggressive expansion strategies of large private multinational terminal operators and shipping lines in mergers and takeovers, with an unfolding network of non-contiguous port terminals linked through common operators (see UNCTAD, 1999) in an economic liberalization. The move has seen a proliferation of private terminal operators in ports, with over half of the world's container terminal operations being handled by multinational terminal operators (Slack and Frémont, 2005). They have acquired a dominant position in terminal operations of ports across the globe, taking over from states or local stevedoring (cargo handling) companies. Most ports have subsequently become characterised by public-private arrangements dominated by private sector participation (see Juhel, 2001). Increasingly, market and societal demands are also creating the need for ports to provide value-added services. Pursuant to this need, ports globally are becoming part of broader logistics networks (Verhoeven, 2010). Additionally, given growing concerns regarding threats to global environmental quality and increasing pressures on world resources, ports globally are under pressure to balance their profit orientation and goals with environmental considerations. Environment for ports has thus shifted from the periphery to the centre and finds its way concretely into the policy and practice of port governance.

The developments are engendering a global realigning and transformation of ports through the unifying of technological, socio-economic, environmental, and political forces. Globally therefore, there is a discernible blurring of the conventional distinctions between state, economic and port authority roles in port environmental policy-making and governance, similar to what is referred to in the literature as a weakening of conventional social forces and institutions of the state. Ports in the global north are far advanced in these processes, but the trend is spreading rapidly to the global south, including WCA. The shifting and blurring in WCA port environmental policy and governance however cannot be said to be uniform for all the ports. They are differentiated and nuanced with dynamics that reveal two underpinning characteristics that are transforming the institutional setting for environmental policy-making and governance of the ports. The two characteristics are, increasing public-private partnerships and increasing regional seas' influence.

Together, these are influencing a change in the environmental governance setting for WCA ports as discussed below.

1.2.1 Increasing public-private partnerships

WCA economies have mostly been characterised by weak market forces with limited free economic competition and expansive state intervention and control. Most of their ports have thus been characterised by state ownership of infrastructure and superstructure as well as responsibility for operations and service delivery via port authorities. Ownership relates to port assets, whereas operational responsibility is oriented towards ships and cargo – the two conventional components of port systems (UNCTAD, 1999; cf. Bichou and Gray, 2005). Responsibility for ships connotes waterside services, including pilotage, berthing, (un)mooring, and bunkering. Responsibility for cargo connotes landside services that include loading, discharging, stowing, consolidation and distribution. However, shortfalls in capacity and logistics as well as administrative bureaucracies have translated into poor port efficiency (see ADB, 2010) and have added significantly to the logistics costs of WCA region's international trade (Harding et al., 2007). These have led to the inadequacy of WCA ports to meet increasing traffic and growing socio-economic demands and for which reason, they have needed capital investments and injections of efficiency. Albeit, spurred by the rapidly growing competition between ports in the region, the cash-strapped governments have been compelled to create an enabling environment to attract private capital in the running of the ports. The WCA region, similar to others in Africa, arguably lags behind other regions across the globe with regard to private sector participation in ports. However, the lag is beginning to change with the movement towards public-private partnerships, particularly in container terminal operations.

Until the year 2006, 68% of container terminals in African ports were state controlled and managed. This marked the highest level of state participation in terminal operations in the world then (Chalfin, 2010). Following the globalising trend of economic liberalisation, however, some private multinational terminal operators are currently bidding to control ports in strategic locations in Africa to promote them as (sub)regional maritime hubs for international trade and as distribution platforms. African states, therefore, are beginning to have limited control with increasing participation by the private sector. In WCA, two of the top five multinational terminal operators globally (with respect to Twenty Equivalent Unit (TEU)² volumes handled at the end of 2015³) have operations in some of the ports. DP World

² The standard container length of 20 feet.

³ <http://www.porttechnology.org/news/the-worlds-top-5-terminal-operators-in-2016> (Accessed 29/09/2017).

operates in Dakar, and APM Terminals (APMT)⁴ operates in ten ports: Abidjan, Cotonou, Conakry, Douala, Freetown, Lagos, Lomé, Monrovia, Pointe Noire, and Tema. Although the ports remain state owned, the port authorities now have to provide infrastructure, while the private sector provides superstructure and services on concession terms. Both the state and port authorities have become exposed to competition with distinct rules and regulations next to markets and regulatory agencies.

Private operators in WCA ports are gradually strengthening their position and taking up some environmental responsibilities and tasks. They are actively involved in environmental agenda setting, and definitions of what environmental issues there are and how to address them. They normally do not only rely on state agencies and regulations but also bring about new environmental standards and practices to precede the state. They have become key actors together with the port authorities and are bringing about new coalitions in port environmental policy-making beside the state. Some state environmental responsibilities have been partly transferred to them in public-private partnership, in which state and non-state actors engage in port environmental policy-making.

1.2.2 Increasing regional seas influence

Arrangements for dealing with environmental problems in WCA are increasingly taking a new turn with policy-making approaches that differ from conventional state dominance through command-and-control styles. As with the transformation of port operations, the state has lost its crucial role as the single most important actor in port environmental politics. New arrangements are emerging besides existing conventional statist environmental policy-making. A simultaneous environmental policy-making interplay is occurring downwards to the sub-national (local) port level and upwards to the regional level, by-passing the national level.

The transboundary nature of environmental threats commonly faced by WCA ports, particularly threats from shipping, is beginning to catalyse environmental collaboration among the ports. The ports share a common regional sea, the Atlantic Ocean, which is governed by UNEP's global environmental regime for regional seas. Specifically, for the WCA region, the regional seas regime is operationalised under the Convention for Co-operation in the Protection, Management, and Development of the Marine and Coastal Environment for West, Central and Southern Africa. This is also referred to as the Abidjan Convention. It is an environmental regime that translates global environmental agreements including those of the IMO into regional regulations and policies. Specifically, it is WCA's regional legal framework agreement

⁴ Merger between AP Moeller and Maersk Line.

for protecting the region's marine and coastal environment, with implications for the port authorities. Nonetheless, beside state actors, the ports have never participated in the Convention's inter-governmental negotiations.

On the one hand, implementation of the Convention has been ineffective, while on the other hand, environmental issues are beginning to gain prominence in WCA ports, with the port authorities orienting themselves to new environmental policy-making constellations. The Convention's Secretariat, referred to as the Regional Coordinating Unit (RCU), has begun looking for ways of strengthening the Convention's implementation. It has thus initiated a new politics of cross-border port environmental co-operation at the regional sea level to address issues of shipping pollution. This is being pursued via direct informal collaborative interactions with the port authorities and their regional association, the Port Management Association for West and Central Africa (PMAWCA), and an ENGO, the Ports Environmental Network-Africa (PENAf)⁵, with interest in the environmental health of African ports. Port authorities from sub-national (local) levels are moving beyond national environmental politics and state institutions to connect directly with regional environmental institutions and politics. The direct interactions are changing institutional arrangements for environmental governance in WCA ports. These changes are leading towards territorial environmental regionalisation with horizontal and vertical shifts within and across national boundaries. Port environmental policy is no longer framed within WCA states alone. There is an emergence of re-scaling of port environmental politics across multiple levels of governance. This emergence has, however, not homogenised environmental policies in WCA ports yet, nor has it replaced existing statist institutional arrangements from the region's divergent political systems. Rather, it exists side-by-side with statist institutional arrangements and involves state actors. An important aspect in the re-scaling is that it is giving port actors more responsibility and control over the governance of environmental aspects of their activities. It is opening up opportunities for building strategic interactions and interdependencies between state and non-state actors in dealing with port environmental problems.

1.2.3 Changing environmental governance settings for West and Central African ports

The dynamics of public-private partnerships from global economic liberalisation and UNEP's global environmental regime for regional seas are increasingly influencing

⁵ PENAf was established by the author of this thesis to support the environmental capacity for African ports. It has been working across and beyond borders with African ports and their regional associations to promote environmental best practices and information exchanges in a bid to strengthen environmental networking among African ports.

the local settings of environmental governance for WCA ports. They are changing the geographic organisation of port environmental policy-making. New functional arrangements and interactions reflecting the global interconnectedness of port environmental flows at subnational-national-regional levels are becoming necessary for the ports to effectively take up environmental responsibilities in a practicable manner. Environmental flow is used here to mean the overall flow of environmental material, technology, information, capital, actors, rules, regulations, practices and approaches from around the globe. Nuanced and complex environmental interactions are emerging in multiple steering contexts. The interactions are taking place within a global setting in a multiple level environmental governance, as shown in Figure 1.2 below. Actors in individual ports are interacting among themselves at the sub-national (local) level of different states but also with state actors at the national level in varying approaches within the different states. State actors from the different states are interacting among themselves at the regional level. Regional inter-governmental actors and the ports from sub-national level of the different states are then interacting directly at the regional level together with state and societal actors.

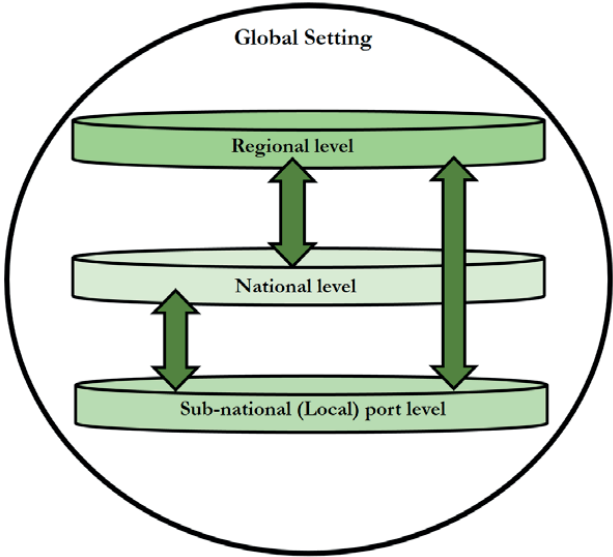


Figure 1.2: Visualisation of multiple levels of environmental governance interactions for WCA ports in a global setting

1.3 Research objective

This thesis specifically investigates institutional dynamics within which environmental reform of WCA ports is developing through actor interactions across multiple levels of governance. The subject has so far received little academic attention, with no extensive comparative study on insights from different ports and

their national as well as the region's institutional context. It is therefore unclear how and why new port environmental policy-making and governance arrangements are emerging. Additionally, the ways in which the emergent arrangements are becoming (non)institutionalised are undefined. Studies on WCA ports have mostly focused on their operational reforms and infrastructure modernisation for improved efficiency (see Addo, 1994; Audige, 1995; Harding et al., 2007; Gilpin, 2007). The ongoing process of environmental transformation in WCA ports remains unexplored. This thesis is one of the pioneering attempts at understanding and evaluating the environmental reform of WCA ports against the background of multiple level interactions and governance within WCA's regional territorial confine.

The three-fold objective of this thesis is to contribute to a better understanding of the institutional dynamics of port environmental governance by studying the multiple-level governance setting of WCA ports. This objective is undertaken with both scientific and societal aims. First, the thesis seeks to analyse the different institutional settings to understand the enabling and constraining conditions or factors for environmental reform for WCA ports. Second, it aims to adequately understand the processes of adapting global, regional, and national environmental policies and practices at the sub-national (local) level of WCA ports. Third, it aims to normatively use insights obtained to assess the potential for a desirable environmental governance arrangement for WCA ports.

1.4 Research questions

The central research question to be answered in fulfilling the research objective is:

'How has environmental governance of West and Central African ports changed following the interplay between global, regional, national, and sub-national (local) governance levels and what are the enabling and constraining conditions for effective port environmental governance in West and Central Africa?'

The following four sub-questions are subsequently defined.

1. How is environmental reform organised and institutionalised at the port-level (local) in West and Central African states?
2. How and to what extent does the institutional setting of West and Central African states affect the way their ports address environmental problems?
3. What has been the role and relevance of regional institutions in shaping environmental governance of West and Central African ports?
4. How has the interplay of sub-national, national and regional level policies transformed the environmental governance of West and Central African ports?

1.5 Theoretical approach

To analyse how environmental governance is evolving and transforming in WCA ports and how this governance is being enabled or constrained, in this thesis, actor interactions at different governance levels are studied within four empirical situational contexts – sub-national (local), national, regional, and the interplay across them – within a global setting. That is, each of the situational contexts has global connotations. Each situational context is investigated using different sets of theoretical perspectives relating to environmental policy-making and implementation processes. The sets of theoretical perspectives are sense-making and institutions; ecological modernisation; international bureaucracies, domestic regulatory-politics and transnational governance; and policy arrangements and convergence. They are used as analytical lenses for understanding how connectivity and dynamics between multiple level actor-interactions transform environmental policy and governance. Each set of perspectives is operationalised for a specific situational context and constituted into a chapter in the thesis. The four-situational context interactions aid in adequately understanding the pathways and paces that advance or inhibit the transformation of port environmental policy and governance in WCA. How they are organised is highlighted in the sub-sections below. Details of how the perspectives were operationalised in analysing them are discussed in their respective chapters in this thesis.

1.5.1 Port-level (sub-national) environmental change

In the wake of the institutional restructuring of WCA ports, port authorities have gained greater autonomy from the state. This autonomy offers port authorities ‘room for environmental manoeuvres’. Nonetheless, the state remains the sole shareholder of the ports and therefore the environmental ‘room for manoeuvres’ remains dependent on national political systems and associated institutional context for environmental protection and management in the ports. Meanwhile, ports globally have to address an emergent globalising phenomenon of ‘green ports’, which basically requires ports to balance their economic and profit objectives with environmental considerations. There is however no established approach to doing this. Ports are adapting the phenomenon based on their proximate circumstances and the approaches they find appropriate in dealing with what they consider significant environmental problems. WCA ports cannot fully ignore this phenomenon if they want to stay competitive. ‘Good environmental quality produces competitive advantage’ (Kolk and Van der Veen, 2002) for ports. However, what environment means and what can or has to be done about it can be quite puzzling and uncertain for ports. While some ports have prioritised energy efficiency and air pollution from ships (Luo and Yip, 2013), others have focused on noise disturbance

and traffic congestion. Dealing with puzzling and uncertain situations in WCA ports will require making meaning of their environmental situation to act appropriately. Until recently, for WCA ports, environment was interpreted to mean sanitation and port cleanliness. Now, to develop any meaningful and common meaning of environment in the ports, varying stakeholders of the individual ports may have to collectively and mutually determine that through social interactions. They may together have to define what constitutes a significant threat and what plausible action(s) could be deployed to mitigate that. Some ports, including Abidjan, Douala, Lagos, and Tema, have already initiated some form of fragmented and limited green approaches in their environmental reforms.

Given the varying institutional contexts for WCA ports, an understanding of the varying characteristics of port authorities can facilitate understandings of what environment means to them and provide the frame for the process that may be suitable and practicable for adopting the globalising 'green port' phenomenon. The situation lends itself to Weick's (1993; 1995) sense-making perspective. Sense-making facilitates turning ambiguous circumstances into a situation that is comprehended explicitly to serve as a springboard into action (Weick et al., 2005). Institutional context however provides the frame for sense-making processes in organisations. The sense-making perspective is therefore complemented with Weber and Glynn's (2006) institutionalisation perspective to determine what institutional dynamics and mechanisms are key in bringing about the institutionalisation of port-level environmental change in WCA.

1.5.2 Port environmental reform in a national context

Global interconnectedness and interdependence by national economies brings about new forms of relationships and roles between states, economic processes, and society. In particular, as environment has shifted from the periphery to the centre of economic activities, environmental consciousness and practices are permeating down to societal institutions and winning political appeal. This reflects Albert Weale's (1992) notion of a 'new politics of pollution', which denotes a paradigm that aligns economic development and environmental protection. Similarly, as WCA economies are beginning to grow, with a prime role for ports, national institutional arrangements for the environmental protection of their ports are altering. The role of the state in port environmental protection is shifting with new roles for port authorities (as more autonomous public non-state economic actors), private multinational operators (as private economic actors), and incidentally for civil society organisations as well. This process of the environmental reform of WCA ports resembles ecological modernisation ideas because it can be interpreted as the centripetal shifting of environmental ideas, interests and considerations in social practices and institutional

developments. Environmental problems of WCA ports can be defined as structural design faults of the development and operations of the ports. They can therefore be surmounted by modifying port operational activities and processes into cleaner ones. The assumption is that existing state environmental institutions, port authorities, private economic actors, and civil societal actors can together engender the internalisation of environmental care in the ports. The question is how existing national institutional arrangements are empowering environmental considerations in the institutional restructuring of WCA ports. Understanding how this is occurring is particularly interesting because until the 2000s, when most WCA governments began opening their ports to increasing private sector participation, economic, social and environmental policies were largely compartmentalised. The pursuit of port reforms was itself not integrated with environmental considerations. An ecological modernisation perspective is therefore used to compare the environmental reform progress of different WCA ports and to understand the factors that explain similarities and differences in port reform processes.

1.5.3 Regional influence on port environmental reform

Environmental actions in ports generally occur as a myriad of place-based (local) activities. However, ports sharing common regional seas bring about a regional connotation for needed actions. For WCA, its regional seas programme, as mentioned in section 1.2.2, brings several multilateral environmental agreements, including those on marine environment, together under the Abidjan Convention as one regional umbrella. Regulations and policies for the implementation of the Convention, including those on shipping and those affecting ports, are negotiated and adopted through inter-governmental co-operation. Implementation by the party-states is supported and overseen by the Convention's secretariat and bureaucracy, the RCU. Implementation gaps however question the adequacy of conventional inter-governmental relations and agreements, by which the sovereignty of the party-states grant implementation choices, often resulting in inadequate implementations. The RCU is subordinated to the Convention's hierarchical structures. Its influence on the behaviours of party-states towards implementation of the Convention is subject to behavioural choices of the states. This can either constrain or enable the influence of the RCU on implementation. It is often argued that the local level is the appropriate political arena for bringing about implementation effectiveness, but the RCU by its mandate is a regional actor and statist institution. Nonetheless, it is beginning to deal directly with non-state actors, port authorities from the sub-national (local) level in a new constellation with PENAf, to strengthen implementation of the Convention. The ability of the RCU to become involved with non-state actors' interactions and how this must be impacting the environmental

reform of WCA ports brings to attention the role and influence of the RCU as a regional (international) bureaucracy. How does it exert its influence on both state and non-state actors? To analyse this influence, three theoretical perspectives concerning the implementation of multilateral environmental agreements – international bureaucracies (Biermann and Siebenhüner, 2009), domestic regulatory-politics (Raustiala, 1997), and transnational governance (see Dellas et al., 2011; Biermann and Pattberg, 2012) – are drawn upon. Complementing the perspectives should provide an adequate understanding of the pathways of RCU's influence, enablers and constraints to the implementation of the Abidjan Convention as well as factors driving or restraining the influence of the Convention on the environmental reform of WCA ports.

1.5.4 Multiple level interplay in port environmental policy-making

The transboundary nature of port environmental issues, particularly those from shipping, affects or threatens to affect more than one port and its state. This transboundary nature links ports to common environmental repercussions, irrespective of the point source and cause. The repercussions can only be prevented and controlled through processes of coordinated action among diverse actors and institutions operating at and between multiple levels of governance – regional to national and sub-national (local) – with varying forms of ability. Diverse actors can remove fears of competitive disadvantages regarding the environment when they bind themselves to a strategic common orientation (see Kolk and Van der Veen, 2002) and commitment to environmental improvement. The emergent state and non-state actors' constellation between Abidjan Convention's RCU, WCA port authorities and their regional association, PMAWCA, the ENGO, PENAF, and state actors is seeking to pursue such common environmental interest and commitment in an interplay. The actors are not just responding to predefined policy goals set at the regional and within national boundaries but simultaneously connecting and taking implementation initiatives in their own right. It marks a joint interaction among multiple actors from multiple levels of governance across multiple states in an interesting new supranational political context within a geographic regional territorial confine. It is a collaboration that is simultaneously sub-national (local), national, and regional and state and non-state. This reflects a shifting from the statist model of multiple level governance for WCA ports and brings multiple actors into the region's multiple levels of environmental interrelations. Through such multiple levels of collaboration, the ports may be able to leverage their synergies, exchange information and experiences, and collectively develop environmental capacity.

It is imperative here to understand the ways in which this multiple actor-multiple level interplay is evolving and in which ways authority and power are being articulated

among the actors and across the levels. The questions to ask then, are, how is the interaction organised, what is the substance of the organisation, and how is the interplay transforming environmental policy and governance for WCA ports? Such questions lend themselves to the policy arrangement perspective (Arts et al., 2006), which is useful for analysing the structural and organisational processes of changing interrelations between state, economic, and civil society actors in new governance practices. Such changing interrelations within a regional territorial confine make the penetration of the process among the actors and levels towards a convergent harmonisation apparent. Therefore, convergence perspectives as a complement will offer potential for revealing how and the extent to which the structural and organisational dynamics of the multiple actor-multiple level environmental interactions process is penetrating and reforming environmental governance for WCA ports.

To conclude, piecing together analyses of the four empirical environmental situational contexts for WCA ports within a global setting using the differing sets of theoretical perspectives as discussed above offers this thesis a complementary and balanced investigation. It highlights WCA's institutional peculiarities and diversities, which are needed to understand the nuanced and complex interactions between policy structures and actors' behaviours in transforming the environmental governance of its ports.

1.6 Research methodology

The choice of method for undertaking a given research always depends on what is intended to be achieved. Silverman (2006) asserts that there is no 'right' method to proceed in research as methods can become more or less useful depending on their fits with the theories being used and hypotheses being tested. Research that aims at measurements in answering 'how many' or 'how much' usually follows pre-defined standards for testing ideas about the research topic to give robust and precise data. This makes quantitative approaches suitable (Bryman, 2004). For this thesis, however, the aim is to understand changing policy processes – environmental governance transformation for ports – which will generally require a qualitative methodology for defining, describing and explaining the social reality of 'what', 'how', 'who' and 'where'. Two main reasons account for this. First, a qualitative approach allows for in-depth study and rich data. It allows research questions to be deeply and thoroughly explored with new information. Moreover, qualitative research is seen as valuable for better understanding new and emergent fields. Environmental governance for ports is a new phenomenon (Wooldridge and Stojanovic, 2004; Puig et al., 2015), particularly for WCA, that has hardly been comprehensively theorised and therefore requires information from several sources. Consequently, the research

questions for this thesis are explorative so as to understand views, beliefs, perspectives, experiences and dynamics regarding the phenomenon. Second, qualitative research is suitable where the boundary between the phenomenon being studied and the context for any set of variables are unclear (Mason, 2002; Yin, 2009). The phenomena for this study, port environmental governance, cannot be said to be easily predictable from any given set of variables. It has influencing factors that may have to be explored. Cases may vary or not, with or without non-linear causality or correlation, or a mix. Qualitative research is therefore suitable for exploratory and explanatory factors.

1.6.1 Qualitative research techniques

Qualitative research comes with a mixed bag of techniques that include case studies and action research. To go deeper into issues and explore nuances related to the transformation of environmental governance in WCA ports, this thesis combines a case study and action research in a qualitative analysis.

Case study

A case study is an in-depth analysis of a particular phenomenon. It is suitable for investigating and understanding a set of contemporary events over which the researcher has no control (Yin, 2009). Such events are normally entangled in non-linear processes that are shaped by a multiplicity of variables (Gerring, 2004; Flyvbjerg, 2006; Thomas, 2011). The goal in case study research is to understand the boundaries of the case and the complexity of behavioural patterns of the bounded system. Cases can be investigated singularly or in multiple, longitudinally to see changes over time, or comparatively to ascertain and expound similarities and differences between cases. Comparative case studies may comprise many cases, few cases, or single case comparisons (Gerring, 2007).

A comparative case study was used in this thesis as a mix of ports, states and institutions with similarities and differences were investigated.

Judgemental and purposive sampling was used in selecting the cases. Judgemental and purposive sampling is a non-probability sampling technique applied consciously by researchers in selecting units of analysis based on their knowledge and professional judgement (Briggs and Coleman, 2007). The approach is of essence where the speciality of the researcher can be used to select a more representative sample that can provide more accurate results than by using probability techniques. It was particularly appropriate for this thesis, given the set of conditions under which the research could be conducted. First, it was aimed at a qualitative exploratory study in which the entire community of WCA ports could not be contacted, although

randomisation was impossible. Second, a limited segment of the port community connected with environmental policy-making and possessing the particular trait of environmental interest needed to be investigated. Third, for practical reasons, time, money, and human resources created limiting conditions and therefore made it necessary to adopt a non-probability sampling. The foregoing reasons therefore made case judgemental sampling the obvious technique for obtaining information from the specific target group of relevant actors connected with port environmental policy-making in WCA.

A two-pronged selection process became applicable. First, four WCA ports experiencing environmental reform – Abidjan in Cote d'Ivoire (Ivory Coast), Douala in Cameroon, Lagos in Nigeria, and Tema in Ghana – were selected as cases for comparison. They shared some similarities but also had some differences among them or a mix of both (see Pennings et al., 2006). Second, the opportunity for adding a fifth port, Freeport of Monrovia, arose with the researcher's role in PENAf. The port was just beginning to initiate environmental reform as part of its institutional restructuring, and the researcher was recruited as one of the consultants. This offered a hands-on empirical understanding of what stimulates environmental reform and through what ways in WCA ports.

Action research

Action research was first coined as a term by Kurt Lewin. In his work, 'Action Research and Minority Problems' (Lewin, 1946), he defined action research as 'comparative research on the conditions and effects of various forms of social action and research leading to social action'. It is actually an interactive inquiry process that seeks problem-solving actions executed in a collaborative context to understand underlying causes, enabling predictions about organisational change (Reason and Bradbury, 2001). The technique became useful and relevant in studying the fifth case study port, Freeport of Monrovia, with the researcher's active involvement in the environmental reform process initiated by the port authority for Freeport of Monrovia while simultaneously conducting the research. The researcher's interest was in helping in a reflective process of integrating environmental concerns in the operational activities of the port and adopting practical actions by working together with management and staff while at the same time following the processes to adequately understand why they did what. The positive effect was very relevant to the port authority, employees and stakeholders. Findings are contained in chapter three of this thesis.

1.6.2 Data collection strategy

Data collection for the thesis was based on contextual and relevant textual data (Wood and Kroger, 2000). These were mainly obtained through primary and secondary sources. The primary sources used were interviews, questionnaires, and participant observation, whereas the secondary sources were obtained from the review of documents.

Interviews and questionnaire

The cross-sectional design was used to identify and select a representative subset of the relevant actors key to the study (see Brady and Johnston, 2006). Some of these were taken through face-to-face semi-structured in-depth interviews, and others were handed with predefined sets of closed and open-ended questions in the form of a questionnaire. The semi-structured interviews allowed some degree of flexibility both in terms of questioning and responding (see Longhurst, 2003; Kumar, 2014). It facilitated the interviews to focus on issues of analytical interest while at the same time allowing room for other issues to emerge. A combination of in-depth interviews and closed/open-ended questionnaire were therefore used to obtain the overall picture of the environmental situation and approaches in addressing them in the case study ports and their countries, as well as comparative differences among them against the backdrop of their regional setting. This approach enabled a detailed exploration of the perceptions and accounts of respondents.

Respondents generally preferred to be anonymous. Interviewees did not want to be taped, and most respondents did not want their names stated for the reasons of security and confidentiality. Hand-notes were therefore taken during the interviews. The responses were written as concretely and completely as possible (see Neuman, 2000) and were summarised to the interviewees at key points during the interviews to check if they had been interpreted accurately. This summarising was done to confirm and strengthen confidence in the research findings. They were later transcribed and together with responses from the questionnaire, they were coded in synchrony with analytical elements indicated in all the empirical chapters – two, three, four and five – of the thesis. Altogether, seventy-seven key persons were drawn as respondents from the case study ports and related state, private, and regional institutions (Appendix 1).

Participant observation

Participant observation is when a researcher becomes a part of a group being studied to collect data. It is acknowledged as the best technique to fully understand the

complexities of a social phenomenon of research interest (Bricki and Green, n. d.). This technique was used during field visits to the case study ports and at conferences and meetings. Researchers using this technique play a dual role as subjective participants and objective observers. The role is sometimes known, though not always, to the group that is under study. Here, also, the researcher's role with PENAF facilitated participant observations. It was used to gain intimate familiarity with case study port authorities and the Abidjan Convention's Ninth and Tenth Conference of Parties (CoP) meeting in Accra, Ghana and Pointe Noire, Republic of Congo, respectively, through intensive involvement with them in their natural environments. There was also involvement in the organisation of and participation in the first West and Central Africa ports environment conference held in Accra, Ghana, in June 2010 as well as the first panel of experts' meeting on strategic assessment of port environmental issues, policies and programmes in West, Central and Southern Africa held in Abidjan, Cote d'Ivoire in May 2015. The collected data and notes made from the conferences and meetings were descriptive of what occurred and how they occurred. These were useful in overcoming some discrepancies in what was said in interviews and respondents' actual behaviours towards the environment.

Document review

The document review was used to collect secondary data for the thesis. The relevant scientific literature, the internet, newspapers and newsletters, management and operational reports, policy documents and minutes and reports of meetings were examined.

1.6.3 Data analysis

Qualitative data analysis starts with 'data reading' and aims at uncovering and understanding the broader picture of a research study. It is mostly associated with the means used to sort, organise, and make sense of data. Data obtained for this thesis were labelled and coded to identify similarities and differences. They were organised as data sets for the different empirical chapters. These processes were undertaken according to the researcher's own set of themes with reference to elements drawn from the theoretical perspectives used as analytical tools and lens for study. Common issues that recur were searched for in detail, identified, and tabulated under their relevant themes. Narratives from respondents and observations were examined in detail to identify how they interrelate across the data sets. They were compared and contrasted to determine differences and similarities and innovations in environmental interactions and approaches in the case study ports in relation to their specific sub-national (local), national and overall regional context. Similarly, documents relating to secondary sources of data were reviewed and analysed by

systematic reading and observation of texts to determine their intentions and implications and then assigned appropriate themes and narratives (see Krippendorff and Bock, 2008). Coding, however, proved challenging as it subsumed some of the context and narrative flow with the potential of being overlooked (see Bryman, 2004). It therefore required systematic reading to look for precise descriptions and processing the data by developing extraction tables to facilitate an accurate coding.

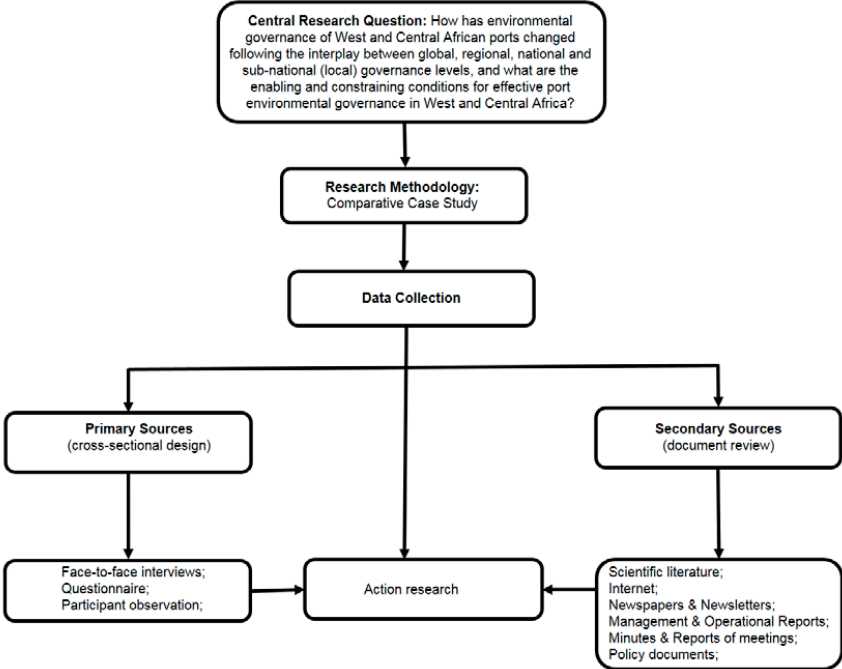


Figure 1.3: Research methodology and design

1.6.4 Researcher objectivity

The thesis is considered as an empirical starting point for generating new research evidence about the changing of a dominant paradigm – state-led port environmental policy-making in WCA. The author collected information with two hats: one as a researcher, and the other as a practitioner involved with ENGO, PENAF, which has an interest in promoting environmental improvements in African ports. It is acknowledged that such a dual position raises susceptibility to researcher bias.

Interactions with respondents and actors subject to investigation preceded with clarifying the researcher’s role as an independent academic investigator. Interviewing was set up in such a way that it allowed respondents to reveal their true views and feelings. The researcher did this to avoid the situation where respondents acquiesced, with a tendency to agree with whatever was presented, because the researcher was

perceived as an expert from an ENGO. Additionally, the researcher approached the research with the view of esteeming empirical realities as very meaningful and important, which therefore had to be accurately comprehended and interpreted. It became necessary to adopt the role of learner through which observations, interviews and document review helped in understanding similar and divergent patterns of behaviour of the respondents as well as groups of actors. Hand notes taken during interviews were written down as comprehensively as possible and summarised to respondents during interviews to check if they had been correctly interpreted. In addition, there were blind set-ups during conferences and meetings. Participants were put into blind groups. Groups were predetermined without participants and researcher knowing who constituted which group and what each group was going to do. This was done for participants to come out with what they prioritised as environmental problems of the ports, why they chose the problems, what their assumptions and reasoning were, what the implications were for them, as well as how they would address them. Furthermore, the researcher documented the views, expressions, ideas and visions of respondents to understand how they construct their views on ports and the environment and how they were transforming their day-to-day experiences into environmental knowledge, and vice-versa, how they were transforming environmental knowledge into day-to-day practices and actions. This helped to ‘get inside the heads and action repertoires’ of the respondents and actors, and to document how they saw and constructed their social reality.

By the same token, the knowledge, experiences and role as an ENGO director closely involved in greening ports in WCA countries provided the researcher a rich background and understanding of the social dynamics and governance processes related to port environmental sustainability. It also helped to get access to the key actors and organisations, and to important meetings where information could be obtained.

1.7 Structure of the thesis

This thesis consists of six chapters.

Chapter 2 uses the port of Monrovia in Liberia as a single case study to understand the process of institutionalising environmental change in WCA ports. It reveals the influence of contextual local institutional characteristics and dynamics in adapting environmental reform and turning it into a business reality.

Chapter 3 addresses how WCA ports are giving increasing attention to environmental issues. Four ports were used as comparative case studies. Globalisation processes were found to be driving the ports’ environmental reform, but progress was dependent on national politico-administrative factors.

Chapter 4 analyses the influence of international bureaucracies in the implementation of multilateral environmental agreements, focusing on the RCU, the secretariat of the Abidjan Convention under UNEP. Here, findings revealed that, though the RCU influences the implementation of shipping pollution prevention in WCA, domestic politico-administrative institutions are crucial to what and how prevention is implemented.

Chapter 5 investigates how multiple actor and multi-level interactions are transforming environmental policy and governance in WCA ports. An emergent non-state-led joint environmental policy-making arrangement is observed, which seeks to harmonise regional (international) environmental policies and regulations coherently across the region’s ports. The arrangement by-passes conventional statist environmental policy arrangements, albeit, without escaping the state.

Chapter 6, the final chapter, presents general conclusions for the research by discussing the empirical results of this thesis and answering the research questions.

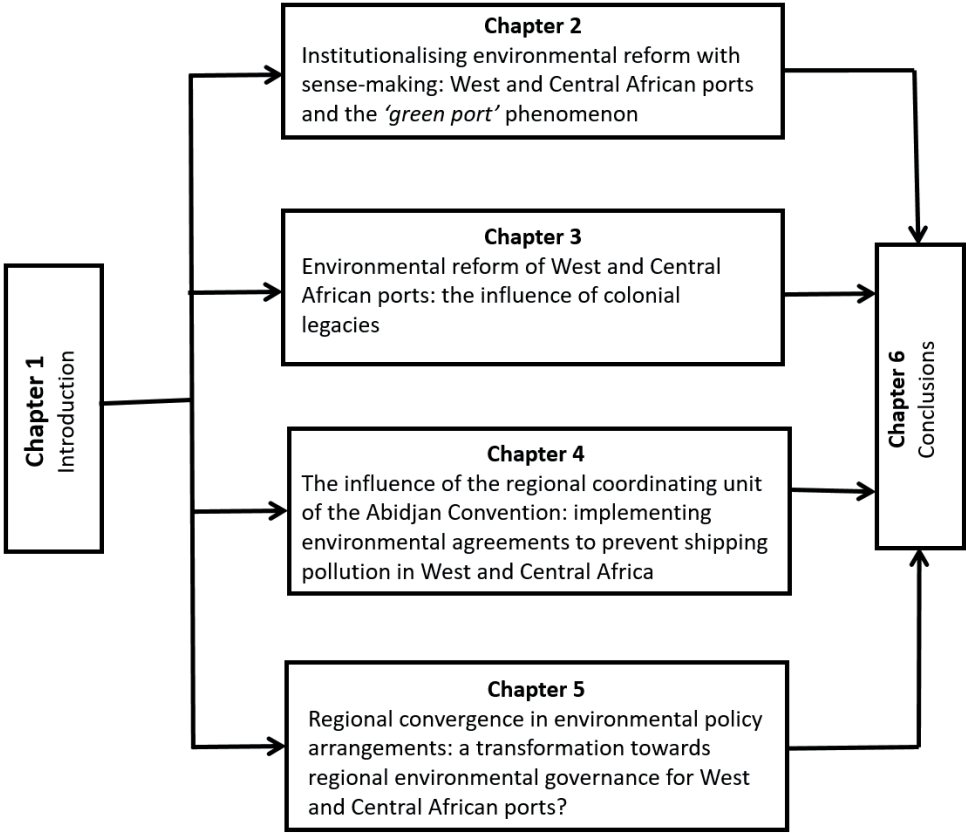


Figure 1.4: Structure of the thesis

Chapter 2. Institutionalising environmental reform with sense-making: West and Central African ports and the ‘green port’ phenomenon

This chapter has been published as: Barnes-Dabban, Harry, Van Tatenhove, Jan P.M., Van Koppen, C.S.A. Kris, and Termeer, Katrien J.A.M. (2017) Institutionalising environmental reform with sense-making: West and Central Africa ports and the *‘green port’* phenomenon. *Marine Policy* 86: 111-120

DOI: 10.1016/j.marpol.2017.09.005

Abstract

Harmonizing economic activities with environmental considerations has emerged as a new globalizing phenomenon for ports. The phenomenon is labelled as ‘green port’. There is however no canonical way of turning green port into business reality. Some advanced ports have adapted it and African ports are also beginning to follow. The Freeport of Monrovia in West and Central Africa had its process of incorporating environmental considerations into its operational practices in an environmental reform labelled as ‘going green’, akin to the ‘green port’ phenomenon. The process interrupted routinized port activities and behaviour. Employees of Freeport of Monrovia and stakeholders could not foresee the meaning and consequences of such reform. The uncertainty triggered a process for employees and stakeholders to collectively make sense of and react to their new situation. This paper integrates Weick’s sense-making properties with Weber and Glynn’s institutional mechanisms affiliated to sense-making as a conceptual tool to analyse and understand the process by which meaning was assigned to Freeport of Monrovia’s environmental reform and how it became institutionalized. The analysis is based on hands-on empirical research on an environmental capacity-strengthening project executed in the year 2013 in the Freeport of Monrovia as part of its institutional reform from a service port into landlord port. Findings bring to light the dynamic interplay of institutions and sense-making in the greening of Freeport of Monrovia.

Key words

Freeport of Monrovia • West and Central African Ports • sense-making • institutions • green port • environmental reform

2.1 Introduction

The traditional role of ports as land and sea interface for maritime traffic has expanded and modified in scope and activities to become a mixture of industry and services (Stavrouli and Wooldridge, 2004) with diversified stakeholders. As the scope has expanded, environmental impact from port activities has also seen growing attention (Lam and Notteboom, 2014) due to pressing global environmental concerns (Lam and Voorde, 2012). The challenge has been to provide efficient services and minimize environmental impacts while at the same time remaining profitable. This port-environment nexus has culminated in the globalizing ‘Green Port’ phenomenon – an innovative solution to harmonizing port economic activities and environmental concerns (APEC, 2011).

Pioneering ports in Europe, such as Rotterdam and Antwerp, and in Asia as Singapore and Shanghai, have pursued the ‘green port’ phenomenon in differing ways (Lam and Voorde, 2012). Some ports in West and Central Africa (WCA) are also beginning to follow in this direction. The Freeport of Monrovia (FoM), the case study of this paper, is one of such ports. The port authority underwent institutional restructuring from a service port⁶ to landlord port⁷ in the year 2010 with increased private sector participation (Friedman, 2012). The restructuring demanded giving attention to environmental impacts from operations and activities of the port in an environmental reform. Until then, environment for the port connoted sanitation and landscape beauty. But now it had to take on a new meaning to include the overall human and natural impacts on the surrounding mediums of air, land and water in all aspects of port operations and activities. The environmental reform was initiated through an environmental component of a capacity-strengthening project⁸ in the year 2013 and came to be known as ‘going green’ akin to the globalizing ‘green port’ concept. Similar to organizational change having the tendency of creating anxiety (see Lüscher and Lewis, 2008), FoM’s environmental reform became fraught with uncertainty. Employees of the port authority, particularly the property department that was to take up co-ordination of the new environmental role did not have the skill required for the task. Likewise, stakeholders including port tenants, terminal operators, concessionaires, truckers and logistics providers among others were concerned that their inability to meet environmental requirements would lead to throwing them out of business in the port. Employees and stakeholders were sceptical, because they could not foresee the consequence of the environmental

⁶ The port authority owns port land and infrastructure, superstructure for cargo handling, as well as providing labour and performing all regulatory and port operations.

⁷ The port authority acts as the regulatory body while port operations are carried out by private companies. It also owns port land and infrastructure which it leases out to port companies.

⁸ The first author participated as an environmental consultant.

reform. This made it imperative for these actors to make sense of the unexpected environmental reform and look for ways of dealing with the uncertainty and ambiguity surrounding it.

Turning the 'green port' phenomenon into business reality requires that port authorities and their diversified stakeholders understand how to do this. Weick's 'sense-making' theory (Weick, 1993; Weick, 1995; Weick, 2003) becomes imperative, because he indicates sense-making as an active process in which actors mutually identify or assign meaning to a phenomenon in order to define appropriate course of action (Weick, 1995; Weick et al., 2005). The ability of involved actors to adjust and deal with the environmental situation in ports becomes dependent on the capability of these actors to collectively make sense of, interpret the environmental situation, and ascribe action. Institutions provide the contextual influence for this process and also the subsequent preservation and embedding of ascribed action. Institutions are therefore precursors to and emergent from sense-making (Weber and Glynn, 2006). The institutional context (see also Berger and Lukmann, 1966) can therefore not be divorced from making sense of the 'green port' phenomenon by ports.

The way 'green ports' deal with ambiguity and uncertainty, within a specific institutional context, has not received much academic attention. Studies on 'green ports' mostly focused on green guide for port sustainability (ESPO, 2012), comparing green port management tools (Lam and Notteboom, 2014) and evaluating factors that account for performance of green ports (Chiu et al., 2014). Other scholars, (Lam and Voorde, 2012: 426) have also espoused the benefit of green ports for port performance. All these studies aim at environmental innovations, the object of green ports, as solutions to port environmental problems (Yap and Lam, 2013; cf. Acciaro et al., 2014) and making them economically competitive (Adams et al., 2009). Such environmental innovations are however successful and institutionalized mostly in ports where port authorities have managed stakeholder relations through environmental information sharing (Acciaro et al., 2014: 495). In this respect, an understanding of the actual practical processes by which port authorities relate to their stakeholders to make sense of the 'green port' phenomenon and choose environmental actions to institutionalize it, become appropriate to study. This paper is therefore an attempt to explore how sense was made of 'green port' as a global phenomenon and institutionalized in local context.

FoM's environmental reform process is used as case study in an 'action research' based on the capacity strengthening project organized by the National Port Authority of Liberia between February to November 2013 as part of the port's institutional reform. Action research is broadly defined as 'researchers working with members of an organization over a matter which is of genuine concern to them and in which

there is an intent by the organizational members to take action based on the intervention' (Eden and Huxan, 1996: 527). Central research questions of this paper are: how did the sense-making process of FoM's environmental reform contribute to its institutionalisation and vice-versa, how did FoM's institutional context contribute to the sense-making of its environmental reform?

To answer these questions, Weick's (1995) framework consisting of seven sense-making properties that theorizes how individuals construct meaning following unfamiliar and uncertain or ambiguous situation in organizations, is used. To understand the connection between sense-making and institutionalization, the institutional mechanisms of Weber and Glynn (Weber and Glynn, 2006) are used as an additional conceptual framework.

Primary data was obtained from first-hand participant observations, notes, minutes of meetings and workshops, and semi-structured interviews during FoM's environmental capacity strengthening project in the year 2013. The goal of the interviews was to gain understanding of how FoM employees and stakeholders appreciated the overall sense-making process. Secondary information was obtained through relevant literature, internet review, newsletters, and content analysis of organizational documents. Participant observations contributed to a deep familiarity with organizational culture, routines, practices, and social interactions among stakeholders.

The next section gives an overview of FoM, followed by an introduction of the conceptual framework for the study. In section three, the conceptual framework will be applied to analyse the process of FoM's sense-making. Findings on outcome are subsequently discussed, and then some generalizable conclusions drawn.

2.2 Overview of Freeport of Monrovia

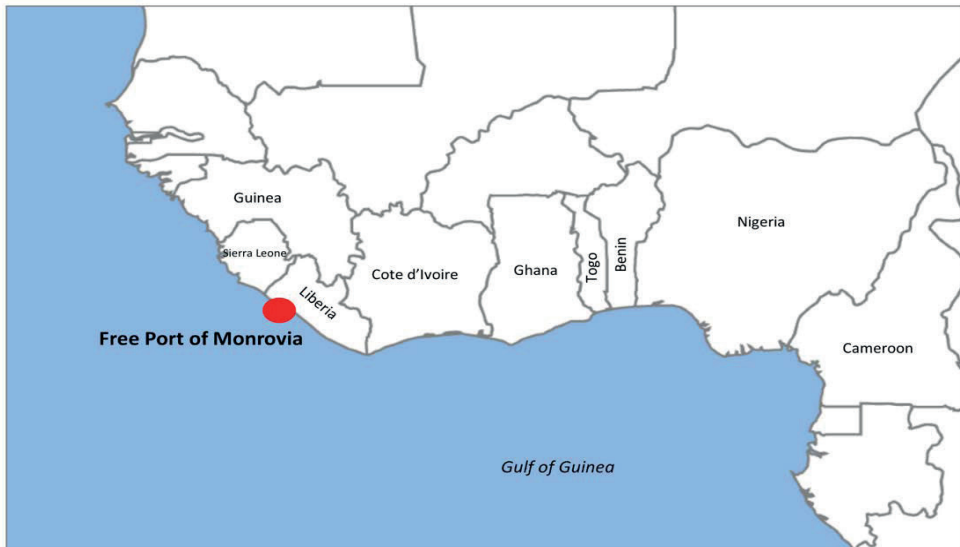


Figure 2.1: Map showing the location of Freeport of Monrovia in Liberia

FoM is Liberia's main commercial port among three others: Port of Buchanan, Port of Greenville, and Port of Harper. It is an artificial harbour built in the year 1948. Categorized as small size, it is protected by two rock breakwaters approximately 2300 m and 2200 m long, enclosing a basin of 300 ha of protected water. The marginal wharf (main pier) is 600 m long and capable of berthing three to four ships, dependent on the vessel size, up to over 500 feet in length. It has additional three finger piers and an oil terminal. There are facilities for cement bagging, petroleum refinery, and minor ship repair. Main exports through the port are latex and iron ore. Cargo throughput for the port is summarized in Table 2.1.

FoM prides itself in how far it has come. It has since 2010 undergone institutional reform from Liberia's 14-year civil war that left port infrastructure damaged and in danger of complete shutdown. It has managed to restructure by upgrading infrastructure and improving management to become profitable while meeting various international standards including International Ship and Port Security (ISPS) code. From a service port, it has transformed into landlord with public-private partnership between the port authority and APM Terminals through a concession agreement for terminal operations. Private participation continues to increase in the port. In the year 2012, the port authority entered into a concession agreement with Western Cluster limited for the construction and operation of loading and discharging facilities including the rehabilitation of dilapidated pier fingers for handling iron ore. There is a similar concession with China Union, an iron ore mining

company. There have also been land leases to big African investors as Dangote Cement for cement processing and bagging.

Table 2.1: Cargo throughput for Freeport of Monrovia 2012 – 2016

Category	2012	2013	2014	2015	2016
Vessel Calls (units)	368	354	386	346	332
Container Traffic (TEUs)	85,589	80,448	77,578	97,722	90,251
Container Cargo (metric tons)	1,041,848.60	760,738.71	762,968.11	854,878.62	7,966,407.90
Bulk Cargo (metric tons)	459,835.10	412,493.00	1,460,577.67	1,386,792.09	852,418.91
General Cargo (metric tons)	540,413.20	736,510.19	271,290.52	308,739.20	350,577.49
Others: Vehicle, etc. (metric tons)	43,239.58	13,303.62	393,120.06	105,838.90	45,960.85

The institutional reform, similar to that of other ports across the globe, follows globalizing economic liberalization with the objective of improving port efficiency and trade competitiveness (see Trujillo et al., 2013). The reform gave FoM more autonomy from the state. It also introduced environmental responsibility for new private operators that necessitated that FoM as landlord and regulator repositions itself to take up environmental role and foster harmonization of environment into all aspects of port operations and activities in an environmental reform to ensure its sustainable development. WCA ports such as Abidjan, Douala, Lagos, and Tema, are also experiencing gradual environmental reform in varying ways as part of their institutional reform (Barnes-Dabban et al., 2017). In the case of FoM, the management had become aware of the need for environmental action but lacked adequate requisite methodological knowledge on how to deal with it. Invitation was thus extended to external consultants to implement an action process for environmental capacity strengthening that would produce a mutually agreeable outcome to be maintained by the port authority. There was therefore ambiguity about the form the environmental reform was to take. The reform process began with a review of FoM's organizational structure to create an environmental department. The property department with responsibility for land, buildings and

tenants became the choice department. It however had not been engaged in environmental tasks before and therefore employees of the department did not know what to expect. The property department was merged with the sanitation unit of the operations department to become the new property and environment department. The sanitation unit had only had responsibility for port cleanliness and landscape. The re-organization raised concerns among both employees of the new property and environment department as well as external stakeholders about losing their jobs. FoM's institutional reform had in the past seen several rounds of employee lay-offs and port businesses closed down. There was therefore uncertain anticipation and assumptions as to what the environmental reform actually meant for the fate of both employees and stakeholders, and for FoM. The anxiety gave way to meaningful interaction and innovation during the months of the capacity-building project as employees and stakeholders underwent series of meetings and workshops and took response actions.

The next section describes the conceptual framework to be used in analysing the empirical process of how employees of FoM's new property and environment department and stakeholders engaged in interactions on the environmental reform and the outcome.

2.3 Conceptual framework: institutionalizing with sense-making

Sense-making, with no single agreed definition (Brown et al., 2015), is acknowledged as a process of social construction (Berger and Luckmann, 1966) characterized by Weick (1995) with seven interrelated explanatory properties: self-referential, retrospective reference, adopting actions, social interaction, ongoing, extracted by cues, and plausibility. It is ostensibly a local practice embedded in place and time with attendant institutional setting. Nonetheless the sense-making perspective accounts inadequately for institutional role (Taylor and Every, 2000; Weber and Glynn, 2006). Weick et al., (2005) acknowledge this in their assertion that sense-making and institutions are rarely placed alongside. Weber and Glynn (2006), however offer three institutional contextual mechanisms – triggering, priming, and editing – that connect with sense-making. In this paper, the two theoretical perspectives, Weick's seven sense-making properties and Weber and Glynn's three institutional mechanisms, are embedded in a re-conceptualized framework (Figure 2.2) for understanding the integrative process of how sense-making can influence institutionalization and, vice-versa, how institutional context can influence sense-making. The subsequent subsections describe each of the two perspectives.

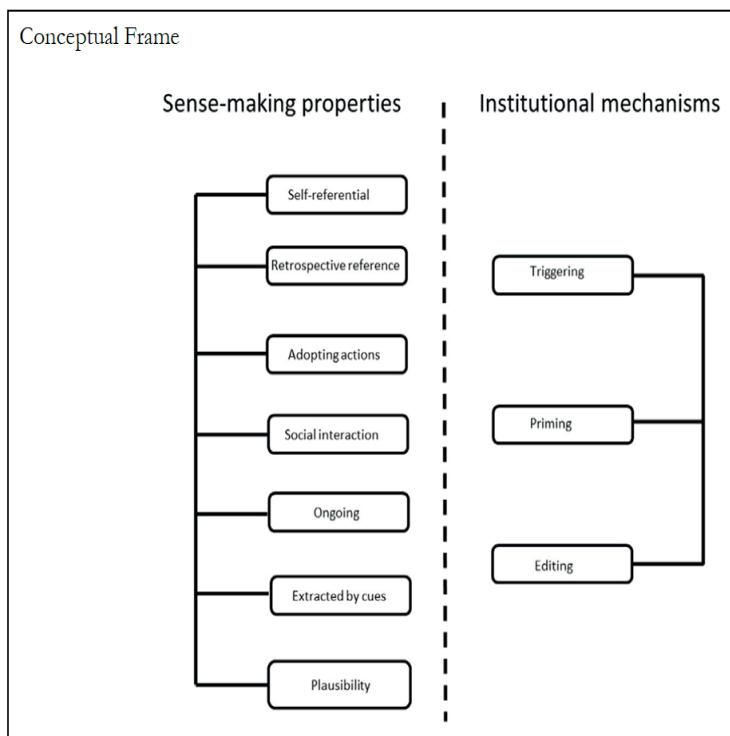


Figure 2.2: Understanding sense-making within institutional context.

2.3.1 Sense-making in ambiguous situation

Sense-making brings to fore the importance of uncertainties and ambiguities in initiating a process to interlock individual behaviours, constructing some meaning, and finally taking collective action in organizations. Individuals involved in sense-making ‘enact their realities’ (Holt and Cornelissen, 2014; Maitlis and Christianson, 2014; Sandberg and Tsoukas, 2014). That is, they initiate and set events and structures in motion (Weick, 1988: 306) by organizing their attentions, interpretations, and negotiations to create meaning to deal with their emergent ‘world’. The seven interrelated properties that characterize sense-making process – self-referential, retrospective reference, adopting actions, social interaction, ongoing, extracted by cues, and plausibility – are explained as follows:

Self-referential

Individuals interpret uncertain and ambiguous situations by how they see themselves or want to be seen in that new setting (Weick, 1995: 20). Sense-making is therefore embedded with individuals adjusting their behaviours and practices by redefining

their identity. When training, experience, and routinized behaviours in organizations become inadequate to meet new demands, individual identities become threatened with uncertainty and confusion. Nonetheless, as individuals involved in uncertain situation interact to construct and reconstruct their identities (see Karreman and Alvesson, 2001) they are more likely to be able to make sense of their new situation and facilitate new roles of behaviour to deal with it.

Retrospective reference

When individuals in organizations are faced with uncertainty and ambiguity, they make reference to past experiences to interpret their situation (see Mills et al., 2010]: 184) and take better control. Emergent situations, may, however not necessarily follow past experiences. It can be an unexpected and unprecedented ‘known unknown’ but also, ‘unknown unknown’ situation (Termeer and Van den Brink, 2013: 44). While oil spill from shipping could be a ‘known’ situation with lived retrospective reference, organisms in ballast water discharged from ships becoming invasive with potentially unintended dangerous consequences to native (local) marine species may be completely unforeseen, unlived and ‘unknown’ until the invasion gets worse with time. The latter may deprive sense-making of memories from which to recover past experiences. Similar globe-distant situations could be explored and rationalized but that may however not provide meaningful lived experience (see Shutz, 1967).

Adopting actions

Sense-making keeps action and reasoning together. Individuals involved ‘act thinkingly’ (Weick et al., 2005) and quickly by considering the situation rationally beyond logical rule-bound procedures. Individuals responding, for instance, to oil spill, again, from shipping, that unexpectedly escalates into fire outbreak may isolate the fire and concentrate on finding measures for preventing its spread rather than on the oil spill itself. Relying on laid-down contingency plan for oil spill will not be the right thing to do. Rather, unknown procedures become most likely to be adopted. Doing this effectively depends on how organizations encourage voluntary accomplishment through experimentation and testing of hunches rather than compliance with laid down procedures (Weick, 2009).

Social interaction

Sense-making in organizations is a social process. In addition, particularly for environmental situations, their inherent multifaceted nature leave their interpretation and interpreting filtered through a process of multi-stakeholder (internal and

external) interaction (see Reed, 2008) by organizations. Their varying implications can create situations of uncertainty and ambiguity. However, interpretations of some individuals involved can clarify the situation for others. This is because individual identities review their situational frames and expected roles against their perception of others, through exchange of views and negotiated adjustments in their differences, to contextually moderate meaning and action (see Rosseau, 1995: 111-140). This however thrives meaningfully on trust – respecting the views of others with willingness to base interpretations and actions on them; honesty – reporting honestly, so that others may use opinions expressed; and, self-respect – respecting one’s own perceptions and beliefs (Weick, 1993: 643).

Ongoing

Sense-making is an ongoing activity, because experiences and happenings are continuous. This seemingly contradicts environmental situations that emerge suddenly and generate ambiguity or uncertainty. But in reality, individuals are continuously making sense of what is happening around them but only stop to ‘bracket’ a current situation when it interrupts routinized behaviours and creates uncertainty (Weick, 1995: 43; Weick et al., 2005). Uncertain situations normally require bricoleurs who can readily boost inventiveness to deal with unexpected events through improvisations. Bricoleurs are individuals who have the ability to study and improvise with whatever materials they have at hand (see Weick, 1993: 639).

Extracted by cues

Sense-making involves attention for cues from an ongoing situation by focusing on some elements or issues while overlooking others to support the interpretation of the situation. Inaccurate interpretation can precipitate effortless meaning and misrepresentation of the situation (see Weick and Sutcliffe, 2001: 49). Pertinent issues of immediate and local concern and capacity determine how emergent situations are defined. Imitating broader globe-distant practices and experiences might rationalize and discount evidence and data that support and confirm local proximity concerns. Individuals therefore consider local contexts, rules and regulations, actualities, and options in ways that support their views in finding an acceptable way forward in sense-making.

Plausibility

Sense-making follows what makes plausible sense and prompts action as criteria for interpreting an ambiguous situation rather than what may be considered accurate

perception. This may defy scientific logic of using models to address situations and seemingly contribute to inconsistencies in sense-making in organizations. However, for instance, while in Europe, air quality is top priority for seaports and plausible for attracting green action (ESPO, 2016), inland ports consider relationship with local community (Seguí et al., 2016). Similarly, what is plausible for African ports could be different. Relying on what is perceived as accurate may therefore lead to wrong sense and ignore what is plausible. What becomes important is encouragement of multiple interpretations and finding ways of harmonizing varying views to define shared meaning and collective plausible action.

2.3.2 Institutional context mechanisms

Institutions are ‘shared rules and typifications that identify categories of social actors and their appropriate activities and relationships’ (Barley and Tolbert, 1997). They are critical in inducing problems, setting agendas and also enabling or constraining solutions to address issues (Swindler, 2002; Weber, 2003). Institutions therefore provide constellation for actors to define perceptions, interpret them, and direct their behavioural roles and actions. These become permanent ongoing processes of construction, patterning, preservation, and reconstruction of behaviour and interactions in institutionalization (see Van Tatenhove and Leroy, 2000). Institutions enable this by their *triggering*, *priming* and *editing* mechanisms as enumerated below.

Triggering

Institutions can have inherent contradictions, ambiguities and gaps that can be puzzling and requiring review. First, institutions provide a dynamic construct for a distinctiveness that demands continuous attention. They can, for instance, make significant shift away from the technology by which they are defined toward another that is conducive and desirable for their strategic renewal. This could disrupt existing understandings and trigger search for explanations and appropriate course of action. Second, institutions could make new things possible or provide actors the possibilities to do old things in new ways that make institutional labelling or typification and implications of the new ways incompatible, and thus trigger a search for understanding. A typical landlord port authority, for instance, becoming involved in providing port operational services (see Section 2.1) fuses two different port management models in a hybrid that would lead to private port operational service providers in the port having to deconstruct the contradiction.

Priming

Institutions provide social cues that become perceptual filters for individuals to activate sense of identities, frames and role expectations for situational contexts (Weick, 1995). Priming is underpinned by institutional rules, codes, roles, values and norms that become institutionalized attention structures. Institutions prime in three ways. First, institutions provide typifications that become the meaningful character of an organization. These are habitualized patterns embedded as routines that typify institutions themselves, their individual actors as well as individual actions (Berger and Luckmann, 1966). Typifications posit which type of actions to be performed by which type of individuals and are therefore used by individuals to initiate and construct a course of action (Weber and Glynn, 2006). Second, institutions provide situational cues which when noticed by individuals can set processes in motion to frame a situation for attention as well as define their identities for eventual action. Third, institutions enable individuals to connect cues in order to frame situations in a meaningful way that support their belief and interpretation. The priming mechanism of institutions therefore shapes what is perceived by individuals connected and makes their behaviour sensitive to situational cues while emphasizing the role of local situational context (see Weber and Glynn, 2006).

Editing

Institutions edit through social feedback processes. Institutionalized roles enable individuals to derive their own course of action and form expectations for the conduct of others. Some individuals can, however, act pragmatically in ways other than institutionalized norms and contrary to expectations of others. The editing mechanism of institutions, therefore, first allows individual deviation from institutionalized norms and subsequently subject the enactment to reasoning through social negotiation (see Weber and Glynn, 2006) for collective course of behavioural modifications.

Using the two theoretical perspectives enumerated above as a conceptual framework, how sense was made of FoM's environmental reform pursuant to the globalizing 'green port' phenomenon and subsequently institutionalized is analysed.

2.4 Going green: making sense of Freeport of Monrovia's environmental reform

Harmonizing FoM's routinized behaviour and activities with environmental considerations in an environmental reform was precipitated and shaped through an interwoven process that apparently interconnects FoM's institutional mechanisms

with sense-making properties. The boundaries between them remain less clear. This section analyses the interwoven process by categorizing FoM's institutional mechanisms with relevant sense-making properties. The process is summarized in a matrix in Table 2.2.

Table 2.2: Matrix for sense-making of environmental reform in Freeport of Monrovia's institutional context

Institutional Context		Sense-making		Reform Process
Mechanisms	Features	Properties	Features	Elements
Triggering	Inherent contradictions; Dynamic construct;	Self-referential	Adjusting Behaviours; Redefining identities; Threatened identities;	Misunderstanding and puzzling; Ambiguity; Undermined identities;
		Retrospective reference	Past references; unknown unknown; known unknown;	No lived experience; Globe-distant narratives; Misinterpretations; Linking differing identities; Redefining identities;
Priming	Social cues; Catalogue of characteristics;	Extracted by cues	Attention for cues; Issues of global/ local concerns; Avoiding effortless inaccuracies;	Institutional typification; Interrupted routinized behaviour; Reasoning together; Adopting and proposing actions; Avoiding complexities;
		Adopting actions	Act-thinkingly; Unknown procedures in motion; Voluntary accomplishment;	FoM-specific language 'going green'; Five local-issue criteria;
		Ongoing	Continuous; Bricolage and inventiveness;	Pessimism and optimism; Management support; Red-tape frustration;
Editing	Social feedback process; Behaviour modification;	Social interaction	Internal and external interaction; Trust, honesty and self-respect;	Intensive employee/stakeholder interaction; Mutual trust, free and open sharing; Divergent interpretations; Review of criteria issues; Misperception and mistrust; Plausible reasoning; Collective action on port waste;
		Plausibility	Multiple interpretations; Collective meaning prompting action; Plausible rather than accurate;	

2.4.1 Triggering sense-making

From the year 2010, FoM made a shift from a service port having little sharing of responsibility with private actors, to a landlord port with public-private partnership between the port authority and terminal operators, including APM Terminals. The shift provided a strategic conducive approach for improving operational efficiencies, but had unexpected consequences. A policy action in the year 2013 to harmonize environmental considerations with port activities in an environmental reform fuelled misunderstanding of FoM's institutional reform direction. It did not change FoM's new label as landlord but created some puzzles. Apart from its seeming contradiction to the inherent view of FoM's profit orientation; it contrasted the expectation of FoM guaranteeing the immediate and tangible need of job security for employees and stakeholders. What is more, executive management did not seem to have defined guidelines on how to proceed with the environmental reform. These seeming contradictions and ambiguities triggered the search for understanding and sense-making especially among employees of the new property and environment department and stakeholders on what the environmental reform meant. In the midst of uncertainty, they interpreted the ambiguous environmental reform self-referentially by how they saw themselves or wanted to be seen in that new situation (see Weick, 1995: 20). The employees⁹ had been trained in their respective roles with an average of eight to ten years on the job (management records, Monrovia, 2013) but could not continue in their routinized lease administration, property management, and port cleaning practices. Similarly, stakeholders did not have environmental clauses in their contractual arrangements and were uncertain of their fate. Their individual mobility under the emergent situation required new identity definition. Nevertheless, embracing the new identity bereft them of relevant knowledge and skill for competence and confidence. They therefore felt inadequate to integrate environmental compliance into their routinized jobs and had their self-worth and individual identities undermined.

Lived experience of restructuring actions from FoM's institutional reform process had left indelible prints on the minds of both employees and stakeholders that made them sensitive to and sceptical about reforms. It provided them the immediate frame of retrospective reference. Re-organizing port security by the United Nations Mission in Liberia (UNIMIL) in the year 2005 for instance, saw the lay-off of many port security staff (Feldman, 1989). A number of port tenants were also ejected and their businesses closed down. The Ngangana and Downing reform team in the year 2006 also carried out lay-offs across various departments (Feldman, 1989). Yet another round of lay-off was carried out in the year 2008 to address overstaffing. In

⁹ Of the property department and the sanitation unit.

all of these, issues of the environment never came up. Therefore, an environmental reform was unexpected and unprecedented especially as the significance of environmental factors and effects remained unknown. There was no baseline data for air, water and soil quality to offer basis for existing leases to be monitored for deterioration or improvement. Multinational concessionaires, APM Terminals and Arcelor Mittal with environmental experience shared their narratives from operating in ports across the globe including Europe. However, this was only remote, globe-distant and less intimate to employees of the new property and environment department and other stakeholders who were struggling to understand their surprising situation. As past experiences are recollected and understood in the light of the present as well as by the way future is perceived (Eastmond, 2007: 249), the only past reality employees and some stakeholders could capture was how management had reduced staff and closed down port businesses through reform teams. The environmental reform was therefore interpreted as a façade to lay-off employees and to shut down businesses in the port.

Ironically, some employees of the new environment department, particularly from the sanitation unit, having been frustrated in the past from non-promotion saw opportunity in their new role to charter a new career path. Some recounted ‘we have been dwarfed and crowded out all these years as we are non-operational staff in operations department’ (personal communication, Monrovia, 2013). They found motivation in their changing circumstance. The Director of the new property and environment department, having been part of FoM through its post-conflict rebuilding was caught between differing individual identities. He acknowledged the limitations and uncertainties but committed to ‘blaze a new trail in the history of FoM’ (Personal Communication, Monrovia, 2013) and make it flourish. He reasoned with both disgruntled and optimistic employees in a rethinking that, to keep their jobs and for FoM to keep them, they had to work together with FoM management, other FoM employees and stakeholders, to define the way forward. They committed to linking their differing identities to draw creatively on each other’s interpretation, and to constructing and reconstructing their identities to bring new meanings to make sense of their new situation and adjust their behaviour and roles (see Brown, 2000; Karreman and Alvesson, 2001) with their newly defined identities.

2.4.2 Priming cues and actions

As with Berger and Luckman’s (1966) institutional typifications, FoM has its typically constructed template, specifying forms and organizing procedures that represent options and constraints for actions that can be exercised by employees and stakeholders (individuals or collectives). It has a hierarchical bureaucratic structure with board of directors at the apex, followed by executive management headed by a

managing director and assisted by three deputies. Next is a middle level management, then senior officers, and junior officers in that order. While the senior officers belong to a senior staff association, the junior officers belong to the dockworkers union. FoM has its standard operating procedures, rules of engagement, job descriptions and competence evaluation procedures. Though it is bureaucratic, it also has communications culture of dialogue and consultations. Conditions of service are negotiated through collective bargaining agreement. Besides, management and employees interact internally through standing joint committee meetings while external interaction with stakeholders is done through port community meetings. Open forums labelled as ‘palaver hut’ are also held from time to time. These together institutionalize FoM’s code of conduct, templates for action, values and norms as its organizational culture. They primed the perceptual filters for employees of the new property and environment department to observe and bracket their new situation and extract cues for activating actions and options in ways that supported their redefined identities and role expectations.

To begin with, realizing the inadequacy of existing standard operating procedures and competence to meet their new situational roles, employees of the new property and environment department were prompted of an interruption of their routinized behaviours and the need to adopt response action. With uncertainty, they sought to look for more information on where to start and what to do. They reasoned together to adopt and propose a number of actions.

First, they initiated routine weekly meetings and workshops to determine FoM’s environmental issues and implications, and how to deal with them. They were mindful of FoM’s bureaucratic approaches and the lack of capacity with the fear that complex ideas were going to hamper the improvisation required to immediately deal with their situation and therefore had to be ignored and avoided. This brought about a choice between soft actions that create meaning and strong actions that generate constraints (see Weick, 1988: 305). A more simple, proximity and familiar criteria were rather logical, as it would prevent complications that had potential to break up the sense-making process. They therefore focused their deliberations on what pertains to their proximate area of competence – lease administration, property management and port cleaning – and how to infuse these with environmental considerations. This resulted in a second action, FoM-specific language – ‘going green’ – to set into motion other actions for making environmental considerations into FoM’s activities and behaviour tangible. ‘Going green’ was explained as a catchphrase to expose and rally other employees of FoM and stakeholders towards a common understanding of FoM’s immediate environmental challenges and the need for solutions to address them through participatory approaches.

Third, they reviewed existing lease agreements to include environmental clauses. Subsequently, the non-enforced Liberia's Environmental Protection and Management Law 2002 in the port became mandatory as a fourth action. It required all leases to be subjected to environmental and social impact assessment (ESIA). Existing port tenants and concessionaires had to develop environmental management plans (EMPs).

Fifth, they enumerated five issues linked to FoM's operational activities as proposed criteria to encourage action among other employees and stakeholders towards 'going green'. These were port waste (from plastics, scrap metals, caked rice and cement, construction debris), oil spill (from trucks and tank farms polluting soil and ground water), sanitation (from lack of toilet facilities in the port), air pollution (from bulk clinker dust), and handling and storage of dangerous goods. They connected cues primed by FoM's organizational characteristics and culture to arrive at the five-issue criteria as reasonable to represent, interpret and frame the environmental situation of the port. The issues were all local proximity ones without globe-distant ones in a bid to avoid complications. They were deemed as having the capability to evoke collective action from both FoM employees and stakeholders with a sense of FoM 'going green'.

There was both pessimism and optimism about management support for the adopted and proposed actions. The environmental reform was initiated top-down by management but its interpretation was becoming bottom-up. This made the sense-making process a kind of paradox. Doubts about management support for implementing adopted and proposed actions had the tendency to break down the sense-making process. In the meantime, the new property and environment department was beginning to be perceived as emerging too fast and arrogating too much power to it. However, executive management's foremost interest was putting FoM on a sustainable path and was therefore, in a supportive twist, willing to do everything to encourage and support initiatives in that direction although they were not in conformity with procedural requirements. Executive management therefore supported and accepted the actions and proposals. This set the tone for shaping and embracing the interpretation of the environmental reform. It further encouraged the unfolding of ongoing continuous actions. Employees of the new property and environment department identified and isolated certain activities of concessionaires and tenants that merited inventive actions. This challenged the typical FoM top-down management style that did not favour interferences, particularly, against foreign investors with political connectedness. Nonetheless, the employees acted believing that was the way to go. Concession license for Dangote Cement, Africa's largest producer of cement, was interrupted and made to undergo an ESIA before commencing operational activities. APM Terminals was also, for the first time, asked

to produce a report on an unreported oil spill at its terminal and submit a contingency plan for responding to emergencies. This led to discussions between FoM and APM Terminals on initiating joint oil spill response drills, a requirement under the international convention on oil pollution preparedness, response and co-operation¹⁰, as well as Abidjan Convention's regional oil spill contingency plan¹¹. Furthermore, a contractor covering a massive oil spill in a tank farm area as had been the usual practice was stopped and asked to take proper remedial action.

Management support notwithstanding, bureaucracy and red-tapism frustrated the willingness of employees of the new property and environment department in their improvisations. There were delays in the release of funds for procuring logistics and postponement of planned meetings and workshops. Resultant comments from colleague employees as 'this is FoM, your efforts will go nowhere' repressed their enthusiasm. These made employees of the new environment department tread with cautious optimism by reflecting on which actions had the tendency of not courting management support.

2.4.3 Editing frames and interactions

Making sense of FoM's environmental reform went through intensive internal and external dialogue and consultations through social interactions. Internally, employees of the new environment department interacted with employees of other departments, dockworkers union, senior staff association, as well as executive management. Externally, they interacted with the port community which included state agencies connected with ports, maritime, and the environment; port tenants; port operators; port users and concessionaires; as well as connected living communities. FoM's organizational procedures for internal and external consultations and communication facilitated the social feedback process that allowed editing of multiple interpretations and collective plausible action.

Internally, standing joint committee meetings, the platform for executive management and employee representatives, shaped consensus around the 'going green' catchphrase in interpreting the environmental reform. The meetings were characterized by mutual respect and trust. Management did not try to control the content of discussions. Where they did, it was with steering discussions towards FoM's vision of becoming a 'premier port authority in West Africa'. The respect was rooted in FoM's culture of collective bargaining negotiations between management and staff, which guarantee employees' right to participate in workplace affairs

¹⁰ International maritime convention establishing measures for dealing with oil pollution incidents.

¹¹ It complements existing national plans for responding to oil pollution incidents and administered by the Abidjan Convention – Convention for the co-operation in the protection and development of the marine and coastal environment of West, Central and Southern Africa region.

(Personal communication, Monrovia, 2013). Externally, port community and other inter-organizational meetings took place in open forums that included a variety of stakeholders who actively shared their views and interpretations on 'going green'. The high point of such meetings was the national stakeholder workshop jointly organized by FoM and Liberia's Environmental Protection Agency (EPA) on 30-31 May 2013 in Monrovia. The diversity of interests and perspectives of the stakeholders at the workshop made it a positive dialogue to foster participatory involvement as a mechanism for enhancing co-operation and trust towards a mutually benefiting pursuit.

The workshop reviewed the five issues identified as 'going green' criteria by the new environment department. The language 'going green' appeared attractive and generally easy to grasp as the meaning of FoM's environmental reform. Ballast water, ships' waste, climate change adaptation, and coastal erosion resulting from the construction of FoM's breakwater and affecting the Westpoint community were articulated as additional issues of concern. These brought in global dimensions to the criteria for 'going green' and raised inconsistencies in interpretations, which were challenged and exposed to reconstruction. The interaction was not without misperception and distrust. There were ambiguous laden interpretations expressed by some small enterprises such as truckers and custom brokers indicating 'this will not bring money'. Similarly, some shipping agencies and warehouse operators expressed uncertainty due to fear that their inability to meet the new requirements might throw them out of port business. However, they were ready to go along if FoM assured and supported them. The worst misperception came from the employment-focused interpretation by the mining communities. These are the areas where iron ore, one of Liberia's major export commodities, is mined. The residents accused FoM and the concessionaires of neglect over employment and community needs. It took several interventions to calm them with the understanding that it was part of the workshop's agenda to address their concern. Developing an accurate meaning was nearly impossible, as ideas of some stakeholders had to be ignored. Lack of environmental baseline data and monitoring guidelines made it difficult to 'know' some 'unknowns' and generate common interpretation for action. Through participatory and deliberative interactions, the various subjective interpretations gave way to a shared understanding that, fitting each other's behaviour and actions with environmental considerations in a bid to use one another in achieving their respective objectives was the sensible thing to do. Reliance on plausible reasoning made port waste common to the varying expressions and interpretations.

Port waste was one of the top issues at both departmental and stakeholder workshops with four reasons that made it a plausible interpretative criteria. First, it is locally generated by all port tenants, concessionaires and users, and thus a common

activity. Second, it could be managed using local resources and capacity at relatively low cost. Third, as a common activity and problem, it was to be easily acceptable, approved and implemented by all stakeholders with a high chance of success to give reality to FoM 'going green' in its environmental reform. Finally, it was going to be easily and efficiently replicable in the other ports in Liberia. It was therefore deemed relevant and plausibly common to be comprehended explicitly to serve as a springboard into collective action (see Weick et al., 2005). It was selected as an action project to give a common meaning to 'going green' in interpreting FoM's environmental reform. Subsequently, the port waste project was launched at a workshop on August 2nd, 2013 to materialize FoM 'going green'. To embed the reform, a port environmental forum was institutionalized. The forum was to meet regularly to discuss matters bordering on FoM's environmental performance. The Executive Director of EPA particularly remarked 'I look forward to this working together becoming a model'. This gave a boost to the 'going green' initiative.

2.5 Discussion

Through the empirical analysis of how sense was made of FoM's environmental reform, the dynamics by which the sense made created an order for institutionalizing the reform become discernible. Four interconnected (institutional) factors can be observed: *role for sense-agents*; *openness to unknowable envisaging*; *organizational culture*; and, *collective pragmatic action* that alters behaviour in favour of environmental improvement. These are discussed in this section and summarized in Figure 2.2.

2.5.1 Role for sense-agents

The absence of a grandmaster plan for pursuing FoM's environmental reform created moments of ambiguity that in some way disrupted expectations of employees of the new property and environment department. It undermined their long-held identities. They however worked together to understand their ambiguous situation and clarify the way forward by extracting and interpreting cues from FoM's organizational characteristics. They connected their interpretation with local criteria-frames from which they originated and organized actions for understanding their emergent situation. By this, they took on the role of collective sense-agents in continually initiating and readjusting the course and goals (See Beer and Walton, 1987; cf. Crammer et al., 2006) for FoM's environmental reform. Sense-agents can be equated here to change agents in the sense-making literature (Dunphy et al., 2007; Van der Heijden et al., 2012). As collective sense-agents, employees of the new environment department played a catalysing and coordinating role in the sense-making process by presenting and articulating ideas in ways that motivated other employees, management and stakeholders toward actions that gave meaning to

FoM's environmental reform. They took pragmatic belief-oriented and action-oriented approaches to initiate and materialize the environmental reform into action. In a belief-oriented approach, the reform was bracketed and labelled 'going green' as a FoM-specific language for the green port phenomenon. The labelling allowed a common ground and grasp of the essence of the reform and predisposed it to functional deployment by both FoM employees and stakeholders. They also set out five local interpretative criteria and subjected them to discussions with other FoM employees, management, and stakeholders. In an action-oriented approach, they set out new measures that created environmental requirements for port tenants, users, concessionaires, and business owners. They further enacted inventive environmental measures in situations of identifiable concessionaires and port users in ways that translated and embedded the environmental reform. Subsequently, they organized and coordinated activities to mobilize collective understanding, interest, and action.

The sense-agent identity was however caught in frustrations by overriding bureaucracy that could have paralysed and crippled confidence and improvisation required for the sense-making process. That notwithstanding, the materialization of collective action on port waste to interpret FoM 'going green' in an environmental reform emphasizes the influence and importance of sense-agents in sense-making in organizations. The capacity of their human agency to weigh in with motivation to make common sense from multiple interpretations of a disrupted routine brought about new modes of organizing. It stands to reason that the emergence of individuals' sense of an organization becomes an influential mechanism in shaping the individuals' identity. This is in consonance with Weick's (1995) observation that 'identity shapes and is shaped by sense-making'. FoM's sense-making process shaped a collective 'sense-agent' identity and the collective 'sense-agent' identity shaped the sense-making of FoM's environmental reform in a 'going green'.

2.5.2 Openness to unknowable envisaging

Making sense of FoM's environmental reform could not be contextualized in a particularly learnt frame of past experience. The only retrospective meaningfully lived frame of experience was FoM's 'time-honoured' reform practices with employee lay-offs and closure of port businesses, even though it misrepresented the situation. Weick (1988), Snook (2000), and Holt and Cornelissen (2014) assert that, socially learnt narratives could contradict ongoing surprising situations and lead to disastrous effects. Even globe-distant narratives did not change the misrepresentation. There had never been an environmental situation and neither had there been any assessment to predict significant environmental risks. FoM's environmental reform was therefore a case of 'unknown unknowns'. It was exposed to past unknowns as well as future unknowns. The unknowns for FoM's environmental situation made it

difficult to confine the sense of its environmental reform to elaborations on prototypical scenarios. Intimate reliability to cognitively interpret it in ways that bring about novel actions was absent. The condition of absence however exposed the sense-making process to an open, unknowable envisaging of what its local context of the globalizing 'green port' phenomenon should be. Sense was therefore made in this absence by holding open to possibilities (see Holt and Cornelissen, 2014). The unknowable envisaged possibilities could only make plausible sense a means to the sense-making's end – balancing FoM's activities with environmental considerations. Therefore, in a counter-factual manner and beyond established ways in typical sense-making retrospective behaviour, making sense of FoM's environmental reform was organized for its own end in “the openness of an imageless world (see Heidegger, 1998/1999: 63), neither 'knowing what' nor 'knowing how'”. In addition, from a situation of unknowns and wandering through openness frames, a common meaning with practical import became possible from multiple interpretations to provoke collective receptivity in instituting environmental practice.

2.5.3 Organizational culture

Organizational culture, perhaps most commonly defined as 'the way we do things around here' (Lundy and Cowling 1996; cf. Martins and Terblance 2003), was fundamental to FoM's sense-making process. FoM's hierarchical and bureaucratic structure had the predictability of formality, rigidity and control. However, the bureaucratic culture was nuanced with values for agility that allowed for flexibility. The sense-making process was marked evidently by flexibility that combined top-down approach with bottom-up initiatives necessary to engage the environmental reform. FoM's organizational culture shaped what was perceived and encouraged bricolage – employees becoming innovative and inventive within the vision of FoM becoming a premier West African port. This manifested in the empowerment of employees of the new environment department as sense-agents to actively coordinate the sense-making process with skilled dynamism that hitherto had not been experienced. It also enabled intensive iterative socializing mechanisms – open internal and external communication – for shared meaning-making and mutual interpretation of the ambiguous environmental reform. Intensive multiple stakeholder interactions across vertical and horizontal levels is pertinent in dealing with environmental sustainability issues (Acciaro et al., 2014). The entrenchment of dialogue and consultation in FoM's organizational culture facilitated early participative and communicative processes. Early stakeholder engagement has been asserted as essential for valuable and robust decisions and outcomes (Reed, 2008). Moreover, participation in project or policy design does not only undercut opposition and objection, but leaves participants' imprint on both the design and the

project (Salancik, 1977: 74) with a sense of belongingness. Furthermore, support and active implementation of organizational decisions is enhanced by sense of ownership over participatory processes and outcomes (Richards et al., 2004). Thus, FoM's participatory approaches in its organizational culture culminated in enactment and commitment to collective action that materialized in the institutionalization of its 'going green' in an environmental reform. Additionally, inversely, the institutionalization of the environmental reform deepened FoM's participatory culture with the establishment of a port environmental forum to sustain the interlocking of the new port environmental behaviour. This, in a broader sense, implies 'institutions shape sense-making and institutions also get shaped by sense-making'.

2.5.4 Collective pragmatic action

Constructing 'going green' as a perceptive interpretation for FoM's environmental reform was inadequate to make sense of the reform. It only constituted a simple provocative response. Further visible enactments that would apply the perceptive interpretation into visible commitment and offer positive consequence for the port environment was imperative. Commitment has shown to be an important factor in organizational behaviour (Meyer and Herscovitch, 2001; Robbins et al., 2014). It binds individuals in organizations to actions and through those actions, to beliefs that sustain their behaviour and activities and their own involvement (Salancik, 1977: 62). Feldman (1989) argues that sense-making often 'does not result in action ...' but sense-agents involved in FoM's sense-making process looked for meaningful consistencies and cues for certainty of action. They followed a pragmatic perception that interpretations were not only essential for common meaning but also should have capacity for collective demonstrable functioning of the environmental reform. Individuals in organizations are able to perceive situations in which they have the ability to do something about (Weick, 1988: 311). Sight was therefore not lost of the capability of FoM's bureaucratic decision-making as well as probable stakeholder disillusionment in forestalling commitment in case of a complex interpretative 'going green'. As said, the human mind when aware of conflicting results is flexible and resourceful in obtaining the consistency it requires (Weick, 1995). Therefore, guided by cues and plausible reasoning, port waste became the choice action. The expectation was that, port waste was pragmatic for collective committed action with the potential of giving positive effect to FoM's environment. This yielded the plausible common sense desired for interpreting the ambiguous environmental reform from diverse and conflicting perceptions among FoM employees and heterogeneous stakeholders. The port waste project may not be an accurate interpretation for a globalizing 'green port' phenomenon but it removed complexities

that could have obstructed turning it into business reality given FoM’s local circumstance. It therefore made plausible sense in enacting ‘going green’ with port waste to functionally deploy and institutionalize FoM’s environmental reform.

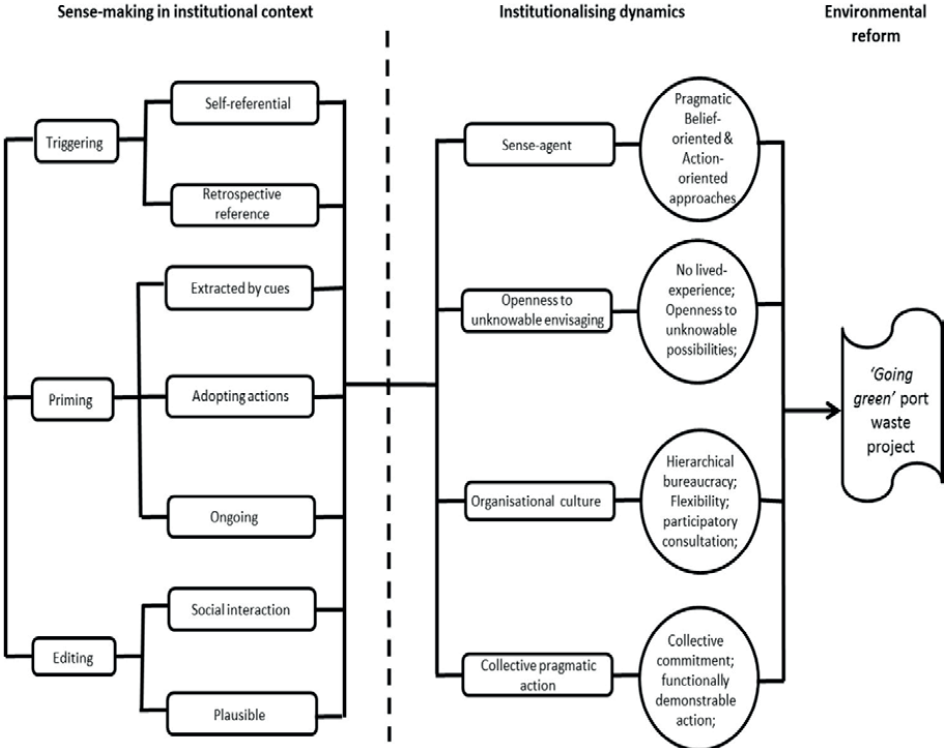


Figure 2.3: Dynamics for institutionalising sense made of ‘going green’ as FOM’s environmental reform

2.6 Conclusion

This paper investigated how, in the course of FoM’s environmental reform – a process akin to the globalizing ‘green port’ phenomenon, sense was made by the participating actors, and how sense-making was related to institutionalization processes. Weick’s (1995) seven sense-making properties were integrated with Weber and Glynn’s (2006) institutional mechanisms in a re-conceptualized framework. A hands-on study of the environmental reform, including interviews, informal talks and participatory observation revealed that the sense-making process was triggered by the ambiguity caused by FoM’s shift from service port to landlord port. Primed by cues from this organizational shift and having no retrospective frame of reference,

employees of the new property and environment department acted-thinkingly in coining a FoM-specific language, 'going green'. From there, they adopted and proposed actions with reference to their situational context to interpret and shape the environmental reform.

The study also enabled the exploring of the contextual influence of institutions in sense-making for ports adapting the globalizing 'green port' phenomenon. It has revealed that sense-making is closely interconnected with local institutional context and, the globalizing 'green port' phenomenon can only be understood and adapted by ports like FoM within the dynamics of their local and specific situational context.

Peculiarities of FoM's environmental reform process highlight the integrative process of how sense-making influences institutionalization, and vice-versa. First, FoM's typical bureaucratic institutional characterization initiated the environmental reform in a top-down approach and yet opened up flexibly to modification allowing for a bottom-up sense-making process that was also facilitated by FoM's consultations and communications culture. In a process of mutual influence, FoM's institutional characteristics on one hand allowed employees of the new property and environment department, as collective sense-agents, to develop ideas and initiatives that shaped the sense-making process. On another hand, the interpretative sense of 'going green' developed in the sense-making process further shaped and re-labelled the institutionalization of FoM's environmental reform. Second, openness of the sense-making process to possibilities in an unknowable envisaging, endowed the institutionalization of FoM's environmental reform with a plausible common meaning from multiple interpretations. Third, the enactment of the waste project as a collective action practically deployed the sense of 'going green' and materialized the institutionalization of FoM's environmental reform.

In sum, investigations in the study bring to light the dynamic interplay of institutions and sense-making in the greening of FoM. Flexible and adaptable bureaucratic approaches and a communicative and consultative organizational culture were identified as key institutional factors. Key sense-making factors were found in the active roles for sense-agents in an open-to-possibilities sense-making process resulting in capabilities for demonstrable collective action. These findings provide helpful insight for other WCA ports that, like FoM, aim to turn the globalizing 'green port' phenomenon into a business reality towards a successful port environmental reform.

Chapter 3. Environmental reform of West and Central African ports: the influence of colonial legacies

This chapter has been published as: Barnes-Dabban, Harry, Van Koppen, Kris, and Mol, Arthur (2017) Environmental reform of West and Central Africa ports: the influence of colonial legacies. *Maritime Policy and Management* 44(5): 565-583
DOI: 10.1080/03088839.2017.1299236

Abstract

West and Central African ports have historically not paid much attention to environmental issues. In the past decade, however, environmental concerns are beginning to emerge with pockets of innovative responses to environmental risks as the ports undergo institutional and infrastructural reform – most notably, with concessions to multinational terminal operators. In this study, environmental management processes in the ports of Abidjan (Ivory Coast), Douala (Cameroon), Lagos (Nigeria) and Tema (Ghana) are compared. Three aspects of ecological modernization theory: changing role of the state, growing involvement of economic actors and economic incentives, and shifting roles for civil society organizations are focused on to analyse the dynamics of the environmental reform of the ports. Findings suggest that globalization processes are a common major trigger in enhancing a gradual but still fragmented and limited process of environmental reform in West and Central African ports, but paces and pathways of the reform are influenced by national politico-administrative arrangements rooted in colonial legacies. Consequently, understanding and advancing environmental reform processes of West and Central African ports requires following trends and significant developments but also taking into account national historical trajectories.

Key words

West and Central African ports • environmental risks • environmental reform • politico-administrative arrangements • colonial heritage

3.1 Introduction

West and Central African (WCA) economies are heavily dependent on international trade, 90% of which is by the maritime route. Efficient ports and shipping are therefore very significant to the region’s trade and economic growth. Ports in the region are predominantly state-owned and have been plagued by operational inefficiencies. To overcome their inefficiencies and promote economic competitiveness through positive changes in operational productivity, most of the ports have undergone institutional and infrastructure reforms since the turn of the millennium.

Container terminal operations have been improved through concessions, a worldwide phenomenon stimulated by globalized economic liberalization, which has attracted private investment in new port installations and equipment. This has resulted in increasing autonomy of WCA ports from the state. With service delivery in WCA ports becoming more efficient (UNCTAD, 2003; Pálsson et al., 2007; Drewry, 2008; Ocean, 2009; Foster and Briceño-Garmendia, 2010), shipping traffic is also increasing (Fouda, 2012).

Table 3.1: Overview of environmental issues for WCA ports

Port Area Generated			Shipping Generated
Water	Air	Soil	
<ul style="list-style-type: none"> • Rainwater • Port garbage • Industrial effluent • Municipal Waste • Washing water from warehouses/workshops • Runoff from wharves, stockpile of bulk cargo as manganese, bauxite, iron ore, shea-butter etc. 	<ul style="list-style-type: none"> • Industrial emissions • Odour • Ship blasting • Trucks/cargo handling equipment emissions • Dust from bulk cargo as manganese, bauxite, iron ore, wheat, clinker etc. 	<ul style="list-style-type: none"> • Oil spill/leakage from tank farms • Chemical spills • Dredged material • Port garbage • Washing water from terminals • Pipeline punctures • Sewage overflow 	<ul style="list-style-type: none"> • Ships’ wastes • Ballast water • Oil spill • Biofouling • Hazardous waste • Accidental collision • Ships’ emissions

Source: Authors’ own elaboration

Increasing shipping, besides driving economic development, potentially gives rise to increasing marine and port environment risks that can threaten economic development. Table 3.1 gives an overview of the environmental impacts from port area activities and from shipping. This article concentrates on the latter, and more particularly on ship-generated wastes, oil spill, ballast water discharge, and hazardous wastes. These problems have transboundary aspects and are regulated by international agreements. Coping with them poses major challenges to WCA ports.

Provision of reception facilities for ship-generated wastes by ports is a requirement by the MARPOL 73/78 Convention. The facilities are becoming available in varying forms in some WCA ports but remain inadequate. Ship-generated wastes collection processes in the ports are not only inefficient but also their management remains poor. Hazardous and non-hazardous wastes were, for instance, found in this study not separated but bundled and disposed of together. Declarations by ships on the nature and quantities of waste are neither verified, recorded, nor controlled (Tema port, personal communication, 2010). This makes illegal discharge of ships' waste in WCA's regional sea more probable by providing ample opportunity for waste dumping through the mixing of garbage with hazardous waste. Next, increasing dependence of WCA economies on fuel imports to meet energy needs (Adenikinju, 2008) exposes the region to oil spill pollution risk. Some of the ports are adopting oil spill response preparedness as required by the International Convention on Oil Pollution Preparedness, Response and Co-operation (OPRC '90). Capacities, however, remain weak. Some ports have had to struggle to deal with major incidents that have required major response efforts. Tema port, in the year 2005 for instance, experienced a major oil spill that led to fire outbreak and loss of human lives (Tema port, personal communication, 2014). Also, bulk carrier ships calling WCA ports to load cargo discharge large amounts of ballast water (with potentially harmful invasive organisms) regulated by the International Convention for the Control and Management of Ships Ballast Water and Sediments (BWMC '04). Most WCA ports indicate that they do not encourage in-port de-ballasting as a preventive measure. However, regulatory guidelines for checking how vessels de-ballast remain generally ad hoc. This puts the region's sea at the risk of invasive marine species. Finally, stringent laws in industrialized economies on safe disposal of hazardous wastes as regulated by Basel Convention (BC'89) have made sub-Saharan Africa a sought-after disposal ground. Some WCA ports are seeking to tackle the menace, however the needed mechanisms and capacity for detecting and handling hazardous waste shipments are lacking. Two prominent issues emerge regarding hazardous wastes. First, the lack of a precise definition of hazardous waste for proper identification, and second, the lack of information sharing among neighbouring ports on the presence of suspicious vessels in their waters. The latter is particularly evident in the

2006 Probo Koala toxic dumping in Abidjan, in which the ship first called at Lagos port to discharge gasoline.

Such environmental risks make environmental protection a key issue for the further development of WCA ports. Already multilateral bodies, global economic investors and global civil society actors are stimulating global attention to port environmental management.

How ports are addressing their environmental concerns has been documented by many scholars (Wooldridge et al., 1999; Gupta et al., 2005; Lam and Van De Voorde, 2012; ESPO, 2012; Dinawoodie et al., 2012; Homsombat et al., 2013; Lou and Yip, 2013). There are studies focusing on European ports (Verhoeven, 2009; Darbra et al., 2009), North American ports (Bailey and Solomon, 2004), Baltic ports (Klopott, 2013; Gritsenko and Yliskylä-Peuralahti, 2013), and Asia ports (Lam and Notteboom, 2014). Literature on environmental protection in African ports, however, is scarce. Existing studies on African ports (such as Wood and Dibben, 2005; Notteboom, 2011; Gekara and Chhetri, 2013) and WCA ports specifically (Addico, 2000; Ugboma et al., 2007) have largely missed out on environmental problems and their management (Ognibene, 2007; Eze, 2008). Regardless this absence in the literature, the institutional reforms of WCA ports at the turn of the millennium came along with increasing attention to port environmental risks and with the development of environmental risks mitigation strategies. Against this background, this paper researches on two questions: (i) how and to what extent do WCA ports address environmental risks in ports; and (ii) do different political-administrative settings result in different environmental risk management strategies? In answering these questions, four WCA ports, Abidjan, Douala, Lagos and Tema (Figure 3.1), are investigated. Applying key elements of ecological modernization theory, this study compares environmental reform in the four ports and identify institutional factors that explain similarities and differences among them.



Figure 3.1: Map of West and Central Africa coastline showing the four ports studied.

The ports represent WCA's differing national politico-administrative arrangements structured after colonial legacies of the French (Abidjan and Douala) and British (Lagos and Tema) empires. Primary information was collected between 2010–2015 using semi-structured questionnaires administered among 45 key persons drawn from environmental managers of the ports, private terminal and port reception facility operators, officials of environment ministries and agencies, maritime administrations, national shipping authorities, shipping agents, officials of the Regional Maritime University in Accra, officials of the International Maritime Organization's (IMO) Regional Office in Accra, the Port Management Association for West and Central Africa's (PMAWCA) office in Nigeria, and the Maritime Organization for West and Central Africa's (MOWCA) office in Abidjan. Some data were gathered through the organisation and participation in the first West and Central African Ports Environment Conference held in June 2010 in Accra, Ghana. In addition, observations and personal interviews were made on field visits to the case study ports. Secondary information was obtained through literature, internet review, newsletters, and management and operational reports.

After introducing port management models for WCA ports in the next section, ecological modernization theory is presented as the conceptual framework for the study. This is followed by an analysis of environmental processes in the case study ports. Mechanisms and dynamics influencing environmental reform in the ports are then discussed, and the main conclusions for the study are drawn.

3.2 Management models for West and Central African ports

Institutionally, WCA ports are predominantly state-owned and structured on colonial legacies inherited from either the former French or British empires. This is reflected in the characteristics of the ports studied and presented in Table 3.2. The French under civil law with a policy of rigid centralization (LLSV, 1999) designed and operated French WCA (French-model) ports as government agencies with centralized and hierarchical planning. The British, under common law with higher levels of freedoms and autonomous institutions (North, 2005), structured British WCA (British-model) ports as public bodies with some decentralized and flexible planning. While the French-model ports operated a form of hybrid management (landlord and service), in which port authorities leased land to licensed private stevedore and cargo handling companies, British-model ports operated the service management model with port authorities controlling and managing cargo handling and stevedoring. In recent years however, following global economic liberalization, the typical colonial institutional set up of WCA ports as state agencies and public bodies has been blurred. WCA ports (the four cases included) have become more autonomous, shifting from state dominance toward increased private sector participation. Though remaining state-owned, the ports have mostly reformed into the landlord model, concessioning their container terminals to multinational terminal operators, particularly, AP Moeller-Maersk and Bollorè Groups. However, Tema operates as a hybrid: the port authority is in joint venture with its multinational terminal operator with private sector domination rather than the state. Globally, the landlord port model has generally emerged the most prominent for its operational efficiency and productivity (AfDB, 2010) and for re-organizing port governance (Ng et al., 2013) and reform (World Bank, 2007).

Though this landlord shift has blurred the typical colonial institutional set up of WCA ports, it does not imply that colonial heritage has ceased to influence the governance style of the ports studied and created homogeneity in environmental interventions among them, as will be elaborated in section 3.5.

Table 3.2: Port characteristics

Characteristics	French-Model Ports		British-Model Ports	
	Abidjan	Douala	Lagos	Tema
National Politico-Administrative System	Centralised port planning	Hierarchical port planning	Decentralised port planning	Decentralised port planning
Management Model	Landlord	Landlord	Landlord	Hybrid
Size	34 Berths 888.9m long*; 13.5m draft; 25 ha total area*; 143.5m2 closed storage; 407.6m2 open storage	11 Berths 507.8m long*, 8.5m draft; 21 ha total area*; 58,000m2 closed storage; 380,000m2 open storage	43 Berths 4,221.5m long*, 10.5m draft; 2.40 ha total area*; closed and open storage: no data	13 Berths 2,413m long*, 11.5m draft; 25 ha total area*; 25,049m2 closed storage; 77,200m2 open storage
Total Container Traffic 2006-2011 (TEUs)	**3291,037	**1577.4	**5,498,347	**3003.2
Cargo Throughput 2006 -2014 (tonnes)	***	***	180, 927,335	83,770,685
Vessel Calls 2006 -2014 (units)	***	***	13,124	16,634
Total export 2006 -2014 (tonnes)	***	***	10,039,411	12,442,288
Total Import 2006 -2014 (tonnes)	***	***	161,279,407	57,324,575
Specialised Facilities	Timber, fruits, fish, offshore tanker mooring	Timber, fruits, fish, bauxite, petroleum	Wheat, fish, petroleum	Alumina, fruits, fish, petroleum
Competing Ports	Cotonou, Dakar, Lagos, Lomé, Tema	Calabar, Lagos, Port Harcourt	Abidjan, Cotonou, Douala, Tema	Abidjan, Cotonou, Lagos, Lomé
Concession Year & Term	2003 for 15 years	2004 for 15 years	2006 for 25 years	2003 – 2004 for 20 years
Country International Trade (%)	90%	95%	75%	70%
Landlocked Transit	Burkina Faso, Niger, Mali	Chad, Central Africa Republic	Chad, Eastern Niger	Burkina Faso, Niger, Mali

Source: Authors' own elaboration; * Trujillo et al., 2011; ** MLTC/CATRAM 2013; *** All four ports were contacted for these data, but due to procedural reasons Abidjan and Douala could not provide them within the period of this study.

3.3 Innovations in environmental protection: ecological modernization

Ecological modernization ideas emerged in Western Europe from analysing the new directions and strategies that came up from the late 1980s onwards to address environmental problems. Since then, a wide array of theoretical and empirical studies have elaborated on what Albert Weale called ‘the new politics of pollution’ (Weale, 1992). The new environmental policies deviate from conventional state-led command-and-control strategies in three main ways: *changing role of the state*; *growing involvement of economic actors and incentives*; and *shifting roles for civil society organisations*.

- *Changing role of the state.* A shift from bureaucratic and centralized regulatory styles of environmental protection toward flexible, decentralized, and consensual approaches often referred to as political modernization (Jänicke 1993; Arts et al., 2006). Some nation-state environmental roles and responsibilities become transferred to non-state actors including (multi)national companies, (inter)national NGOs, multilateral organizations and hybrid partnerships. Additionally, the dominance of the state in environmental control and protection is contested by vertical shifts in authority: upwards to international and supra-national institutions as a consequence of globalization, and downwards to local authorities in processes of decentralization.
- *Growing involvement of economic actors and incentives.* Related to the changing role of the state, economic actors gain ground in environmental reform (Mol and Sonnenfeld, 2000). Economic actors increasingly and systematically take up and institutionalize environmental interests through innovative approaches both within nation-states and across borders. Policy makers turn to economic and monetary mechanisms rather than direct regulation to articulate and push for environmental objectives (Mol and Spaargaren, 2000)
- *Shifting roles for civil society organisations.* In the process of environmental institutionalization, new roles for environmental non-governmental organizations (NGOs) emerge. They shift from their traditional stance of public opinion formation and environmental protesting toward co-operative and collaborative partnerships with state and economic actors in solving environmental problems (Mol, 2002; Sonnenfeld, 2002; Young, 2000). Given the ever more global character of environmental risks, policies for environmental protection are affected by international political and economic pressure. Ecological modernization processes are therefore increasingly becoming interdependent with globalization processes and going beyond the confines of one nation-state (Mol, 2001). In this study, ecological modernization processes described above are used as a sensitizing framework to investigate in what ways different WCA ports have changed and innovated their policies and management in addressing environmental risks.

3.4 West and Central African ports: a wave of environmental reform?

This section analyses environmental reform in four case study WCA ports over the last decade.

3.4.1 Abidjan port

Role of the state

The institutional framework for environmental protection in Abidjan port is linked to Ivory Coast's (Côte d'Ivoire in French) colonial legacy of centralized politico-administrative system inherited from France. The National Environmental Code, Law No. 96–766 [1996] gives formal authority for port environmental protection to the Ministry of Environment, Waters and Forests (MinEEF) and its agencies, the National Environmental Agency (ANDE) and the Ivorian Antipollution Centre (CIAPOL). ANDE has responsibility for environmental impact assessments (EIA) and audits, while CIAPOL has responsibility for ship-generated wastes and ballast water issues, with its Environmental Police Unit controlling the discharge of ship-generated wastes discharge. Oil spill response is coordinated by MinEEF and CIAPOL.

In year 2004, pursuant to directives from MinEEF asking all parastatal agencies to create environment departments, the port authority's environmental affairs unit was transformed into an environment department (Abidjan port, personal communication, 2010). Hitherto the unit only monitored water pollution issues but now took on a broader role including participating in meetings of state agencies with private port economic actors to agree on yearly environmental targets.

Outcomes of these meetings are used as formal reference for port environmental monitoring. This marks a shift in environmental control from the state to the port authority. However, state environmental agencies have not been eager in giving up direct relations with port economic actors. Both CIAPOL and ANDE deal directly and individually with private port economic actors in environmental inspections, assessments and audits. The centralized state environmental protection mode makes it difficult for the port authority to assert any authority and have stringent environmental controls.

Despite this challenge, the port authority taking advantage of its new landlord status with greater autonomy, is engaging in new environmental roles in ways that hitherto would not have been possible. It has moved on to become ISO 9001 and 14001 certified (Abidjan port, personal communication, 2015). It is advocating for add-on technologies to process and reduce wastes from port industries, although limited economic feasibility, poor political support and inadequate expertise restrict

enforcement. Additionally, the port authority has established parallel collaboration with the multinational terminal operator besides the state. This horizontal shift remains ad-hoc and does not engage in state domain issues like permitting. It focuses on day-to-day operational issues, environmental briefings, training, and information sharing.

Furthermore, the 2006 Probo Koala dumping has opened the port environmental space to multilateral bodies including UNEP, IMO, and the Basel Convention Secretariat. These multilateral bodies have taken environmental roles organizing stakeholder workshops and assisting with building port environmental capacity.

Economic actors and incentive

Since beginning operations, the multinational terminal operator from its corporate policy has mainstreamed environmental practices. The operator's focus has been on reducing carbon footprint, which is expressed in increasing fuel efficiency and reducing CO₂ emissions. In the first five years of operation, the multinational terminal operator invested in fuel-efficient rubber tyre gantry cranes that reduced diesel consumption by 30% (Abidjan port, personal communication, 2010). Operational moves of equipment are also calculated to reduce CO₂ emissions.

Already in the 1990s, MinEEF instituted environmental taxes as part of port dues contrary to the view then held by neighbouring ports that it would make them expensive and unattractive. Abidjan port however did not lose business. Additionally, ships' waste fees have been instituted by the port authority under a 'direct charge' system to receive oily waste and garbage from ships in the port in compliance with MARPOL. Since the 2006 Probo Koala dumping however, there has been a state moratorium on oily waste discharge in the port.

Civil society organizations

The 2006 Probo Koala dumping drew civil society attention to Abidjan port. Remarkably, Trafigura, the company involved, paid the Ivorian government 198 million US dollars in an agreement to drop legal action (Fraser, 2010). CSOs including the Abobo Car Mechanics Co-operative and le Mouvement Ivorien Des Droits de l'Homme were subsequently formed to protest against the dumping and the government's position. The groups attracted support from an NGO (Informer, Sensibiliser, Eduquer sur les Pollutants Organiques Persistants en Cote d'Ivoire) which held Trafigura and Tommy (the local waste disposal company) accountable. International media interest and legal action led to victims being paid a compensatory settlement of 30 million British pounds (Fraser, 2010; Evans, 2010), and a thorough clean-up of the affected area. The protest, though a reactive form of articulating

environmental interest by civil society, played out in nurturing port environmental attention.

Progress of reform

An environmental shift is evident in Abidjan port. Initiated with the introduction of environmental taxes in the 1990s, the shift is progressing rather stressfully. Even though the port authority's greater autonomy from the state under its institutional reform has given it new environmental roles, the state continues to dominate port environmental protection. The port authority has institutionalized environmental interests by establishing an environment department. The multinational terminal operator has also taken up environmental role and voluntarily adopted initiatives, thus taking over certain roles of the state in port environmental protection. There is also a modest political modernization process emerging – a horizontal shift with ad-hoc collaboration between the port authority and the multinational terminal operator alongside conventional state arrangements, and also an upward shift with multilateral international bodies taking up roles supporting port environmental capacity besides the state. Ships' waste fees as an indirect regulation serve as economic incentive in controlling shipping pollution and contributing to environmental reform of the port. While this measure is in line with ecological modernization's emphasis on using economic mechanisms, there is a caveat here. Given the poor state of monitoring and control, the direct charges offer ships an incentive to dump their waste as they only pay for what they discharge in the port. Additionally, the state moratorium on receiving oily wastes from ships with no alternative mechanism for checking how ships are handling such wastes weakens the port's environmental reform. Finally, civil society organizations are protesting rather than systematically co-operating with the port in the environmental reform process. Nevertheless, they have contributed to environmental attention. Altogether, the progress of Abidjan port's environmental reform process can be said to be moderately progressive but stressed by state-centrism.

3.4.2 Douala port

Role of the state

Douala port's institutional framework for environmental management follows a colonial heritage of hierarchical politico-administrative arrangement from France, with multiple and overlapping state institutions. The port authority reports to the National Ports Authority (NPA) that is supervised by the Ministry of Transport (MinT). The Ministry of Environment and Nature Protection (MinENP) is the competent state environmental authority, but the MinT has responsibility for ship-

generated wastes. Oil spill response is the responsibility of oil companies and coordinated by the National Hydrocarbons Company under the Prime Minister's office. The Prime Minister's office also has responsibility for EIA. Ballast water is not addressed by regulation or inspection. Responsibility for hazardous waste is shared between the Prime Minister's office and MinENP. Independent of each other, MinENP and MinT carry out ship inspections on waste (hazardous). With Cameroon's omnipresent state (ICG, 2010), non-state actors barely have any formal role in port environmental protection. Although the Douala port authority has awareness of its environmental risks, it seems inert toward them. Policies to address environmental risks are routed through the NPA to the MinT, which then takes it up with MinENP and other appropriate institutions. After becoming landlord in 2006 however, the port authority has established an environmental committee and initiated an ad-hoc environmental role for itself. The initiative came after the passing of the 2005 EIA Decree N° 2005/0577/PM and Order N° 0070/MINEP. The port authority, though not having the official mandate, used the environmental committee as a mechanism alongside existing state procedures to get port economic actors to comply with the national EIA regulations. Following this, industrial effluent and discharges into the port basin received attention. Industries including electroplating and oil refinery initiated action on treatment options incorporated into their environmental management plans in the EIA process. Additionally, the port authority through inter-personal relations and the environmental committee as a platform, has initiated ad-hoc collaboration with the multinational terminal operator on port environmental risks side-by-side state arrangements (Douala port, personal communication, 2010).

The World Bank through its mandatory environmental requirement for infrastructure development assistance has also influenced Douala port's environmental practices. Unfortunately, such international influence has been rather ad-hoc and not institutionalized. It usually terminates with the completion of projects (Douala port, personal communication, 2010) in a reversal to business as usual.

Economic actors and incentives

Douala's multinational terminal operator has adopted voluntary environmental initiatives independent of state regulations. The operator's focus has been on increasing fuel efficiency, reducing CO₂ emissions, and promoting recycling and reuse. Working together with the port authority, the operator has adopted measures for improving vehicular flows within the port (DIT, n.d.). This has reduced dwell time of vehicles entering the port. Also in promoting recycling, waste oil from cargo handling equipment is, for instance, sold to recycling companies to processes it for foundries, metallurgical furnaces and diverse small scale applications. Bocom

Recycling, a recycling company, also buys used batteries from forklifts and other mobile equipment and recycles the lead and plastic parts. Used tyres are often recycled into doormats and sandals.

There is a 'direct charge' system in implementing MARPOL. Here, private waste companies pay negotiable sums to ships to receive their oily wastes for recycling, and ships in turn, pay waste companies that receive their garbage for disposal. This generates competition among waste companies, with the highest bidder getting wastes from ships.

Civil society organizations

Civil society organizations (local or international) are not particularly found to be engaged with Douala port on environmental issues. ENVIREP-Cameroon, a local NGO involved in marine research, gathers scientific information on pollution issues but has no working relationship with the port.

Progress of reform

In environmental reform context, an environmental differentiation in organizational practices is evident in Douala port, though in a less systematic mode. The state remains dominant in port environmental protection. Nevertheless, environment has been institutionalized in the port with the establishment of an environment committee. The multinational terminal operator has also taken up environmental roles. The committee's existence and operation, though ad-hoc, without state interference is symbolic of decentralization and a changing role of the state. Likewise, the ad-hoc collaboration between the port authority and multilateral terminal operator is a token of political modernization. There is also an incidental role for international actors such as the World Bank. Economic incentives have been adopted via direct ships' waste fees, giving ships the discretion to discharge or not and also in quantities they want. As there is little control, the effectiveness of such fees is doubtful, like it is in Abidjan. Though the hierarchical national politico-administrative setting does not support easy integration of new actor roles and innovations for environmental reform, new forms of port environmental management are emergent. The absence of civil societal involvement in dealing with port environmental risks deprives this emergent environmental reform of the 'conscience of society', which may be significant in environmental policy-making. The environmental reform process of Douala port can, therefore, be said to be limited.

3.4.3 Lagos port

Role of the state

Institutional arrangements for environmental protection in Lagos Port is rooted in Nigeria's British colonial legacy of flexible politico-administrative system. However, as stated by a local interviewee, Nigeria's bureaucratic system is 'laden with too many regulators with similar and identical responsibilities' (Lagos port, personal communication, 2012). The National Environmental Standards Regulations and Enforcement Agency (NESREA) is the apex environmental regulator. The Nigerian Maritime Administration and Safety Agency (NIMASA) has responsibility for ship-generated wastes, ballast water, and oil pollution offshore beyond three nautical miles. Oil spill pollution on land and inland waters is controlled by the National Oil Spill Detection and Response Agency (NOSDRA). The port authority after becoming landlord in the year 2006 transformed its pollution control unit, which hitherto only monitored oil spill pollution from vessels, into an environment department (Lagos port, personal communication, 2012). The department has since engaged in new environmental roles including some overlapping with the state. The department's responsibility for oil spill response in the port area for instance overlaps with NOSDRA's similar responsibility on land and inland waters, given that the port basin is part of Nigeria's inland waters. The relatively young and less experienced environment department has oversight environmental responsibility for the multinational terminal operator with huge environmental knowledge and experience. Other state institutions, including the Ministry of Transport, also exercise similar responsibility, with a duplication that often leaves the terminal operator without any effective control (This Day, 2013). To be effective in its role, the port authority has established a collaborative environmental relationship with the terminal operator alongside state relations. Lessons from the collaboration are sometimes replicated for other port economic actors, and thus feeding into the overall port environmental policy-making (Lagos port, personal communication, 2012). Other states and multilateral bodies have also influenced environmental performance in Lagos port. The Netherlands together with the Basel Convention Secretariat have supported NESREA working together with the port authority and other state institutions in developing Waste Shipment Guidelines and National Environmental Regulations SI No. 23. This international co-operation has opened the port to international practices for detecting and handling electronic wastes to curb electronic wastes dumping in Nigeria.

Economic actors and incentives

Subject to corporate policy, the multinational terminal operator in Lagos port has taken up voluntary environmental practices. Aimed at being carbon neutral, the multinational operator is promoting fuel efficiency and reducing oil spills. It has provided oil spill containment devices in the operational areas of the terminal and introduced oil-recycling measures to reduce dumping. The operator plans to convert its rubber tyre gantry cranes from diesel to electric power and also fit them with automatic idle shut down devices. This is to reduce fuel consumption and CO₂ emissions by 60–80% (Lagos port, personal communication, 2012). Another pending initiative is to install solar panels for lighting the terminal. The port authority has also adopted economic incentives as indirect environmental regulation. As part of port dues, ships pay environmental levies for environmental improvements. Additionally, ships pay waste fees under an ‘indirect fee’ system for the discharge of their wastes into port reception facilities. Under this system, ships pay irrespective of whether they use the reception facilities or not.

Civil society organizations

Like Douala, no civil society organization is involved with Lagos port. An NGO, Esuene Foundation, with dealings with the Guinea Current Large Marine Ecosystem project, under the Abidjan Convention, rather focuses on coastal human development and not on issues of port environment (GCLME, Personal communication, 2011).

Progress of reform

Shifts toward environmental reform are evident in Lagos port. Environment has been decentralized and institutionalized with the transformation of the pollution control unit into an environment department to better address port environmental risks. The multinational terminal operator has taken up environmental roles with voluntary initiatives. These developments have shifted the role of the state in port environmental protection. The port authority’s embryonic environmental department is overcoming its inexperience through collaboration with the multinational terminal operator in a political modernization mode. However, the multiplicity of state environmental institutions and overlapping roles with the port authority stabs the decentralization process for the port’s environmental reform. That notwithstanding, the flexible politico-administrative system enables collaboration between state, port authority, non-state and international actors in contributing to the port’s environmental reform. Likewise is the use of indirect ships’

waste fees as indirect environmental regulation. It offers ships no incentive to illegally discharge their waste at sea since they have to pay irrespective of whether they discharge their wastes into reception facilities of the port or not. However, as in Douala, the absence of civil society organizations in all these new roles and collaborations takes away societal conceptions in the port's environmental reform progress. The environmental reform process for Lagos port can therefore be said to be fragmented.

3.4.4 Tema port

Role of the state

Tema port's institutional framework for environmental management follows a flexible politico administrative system linked to Ghana's colonial heritage from the British Empire. Ghana's Environmental Protection Agency (EPA) is the state environmental regulator. The EPA operates with a co-management approach that involves both state and non-state actors. The Ghana Maritime Authority (GMA), an agency of the Ministry of Transport (MoT) which supervises the port, is the competent authority for marine pollution issues, but due to lack of capacity, it leaves the coordination and collaboration to the EPA.

The port authority set up its environment department in the year 2002 after becoming landlord. Until then, environmental issues were dealt with as a matter of course through an environment committee set up in the year 1998 and existing mostly in name (Tema port, personal communication, 2014). The environment department now has responsibility for the effective management and coordination of port environmental issues. It has used the port authority's landlord status to push for environmental compliance by port tenants in ways that have hitherto not been possible. Of particular note has been problems of air pollution (clinker dust) from Ghacem Company, which persisted despite several complaints to the EPA. However, the port authority has been able to get the company to remedy its dust emission. Scrubbers have been installed in the plant. Conveyors have also been fitted with trappings, and automatic water sprinklers installed at the cement terminal in the port (Tema port, personal communication, 2014). Precipitated by a major oil spill with a resultant fire incident that claimed five lives, the port authority's environment department has instituted a collaborative platform, the Port Environment and Safety Network (PESN). PESN brings together port stakeholders, state and non-state, to deliberate on and address environmental and safety risks (PESN, 2005). The port authority in the year 2004 established port reception facilities in the absence of national regulations for MARPOL. Similarly, though Ghana has not ratified IMO's ballast water management convention (BWMC '04) and has no national guidelines

to that effect, the port authority initiated port biological surveys in the year 2009 to establish and monitor the characteristics and quality of its basin as required by BWMC '04.

Other states and multilateral bodies have also taken up environmental roles in Tema. Similar to Lagos port, Tema has collaborated with Basel Convention and The Netherlands on electronic wastes shipment prevention. These international actors supported the capacity building of the EPA, Ghana Customs, and the port authority to collaborate in developing national regulations and guidelines on hazardous wastes shipment prevention.

Economic actors and incentives

Since taking over Tema port's container terminal in the year 2003, the multinational terminal operator has initiated a number of environmental measures that hitherto did not receive attention in the port. For instance, to reduce energy consumption and CO₂ emissions, the terminal and cranes have been fitted with energy-efficient lighting. Other equipment such as reach stackers, top lifters and empty handlers ran on engines with automatic shutdown features (Tema port, personal communication, 2014).

The port authority, like Lagos, charges ships' waste fees under an 'indirect fee' system. It is a 'compulsory user' system under which ships pay regardless of whether they use the port's reception facilities or not, with no incentive to dump wastes at sea. Regular ships enjoy rebate (PRF Guidelines, n.d).

Civil society organizations

Tema port has no institutionalized co-operative dealings with civil society groups but has had its environmental reform influenced by various environmental protests mobilized by local civil society groups. In the year 2002, the port faced resistance from a community-based group over plans to build a new cement plant anticipated to cause air pollution from clinker dust. This was resolved by the port authority in collaboration with the EPA and the cement company, which together reviewed the original design to accommodate the installation of emission reduction technologies. A recent protest has been over environmental impacts from the siting of an oil palm processing plant in 2010 near Tema New Town, a fishing community adjoining the port. The state intervened by stopping the project.

Progress of reform

Tema port shows an emergence of environmental reform. Environment has been decentralized and institutionalized with the establishment of an environment department and the taking up of some roles ahead of the state. The multinational terminal operator has also voluntarily taken up roles in enhancing the port's environmental reform. Various collaborative arrangements are emerging in a political modernization process, some of which, boosted by EPA's co-management approach, include state environmental officials but are steered by the port authority.

Additionally, international actors have taken up roles in contributing to the port's environmental reform. There is indirect environmental regulation through economic incentives for ships' waste collection that prevents probable waste dumping by ships at sea. The role of civil society, however, is incidental and protest-oriented rather than co-operative, as ecological modernization would assume. Altogether, the co-management approach flowing from Ghana's flexible politico-administrative system amply accommodates new actors and innovations in harnessing Tema port's environmental reform. The environmental reform progress can be said to be progressive.

3.4.5 Ecological modernization in the ports

Overall, the four ports studied can be seen as being at a crossroad facing a changing reality from the typical state-led command-and-control approaches toward decentralized and various forms of collaborative approaches and economic incentives in addressing their environmental risks. The essential architecture of environmental management in the ports remain predominantly state-centric but actual practices generating solutions are no longer so. Three major shifts are occurring in the ports investigated. First, the role of the state is changing with a decentralization and institutionalization of environmental management in the ports and with port authorities gaining greater autonomy and becoming sub-state actors. Second, varying forms of collaboration (institutionalized and ad-hoc) emerge alongside the state, with non-state actors playing defining roles in establishing the direction of port environmental management. In particular, multinational terminal operators, as private economic actors, are taking up new environmental roles. Third, other states and multilateral bodies are increasingly also involved in port environmental management, and influencing state policies. Additionally, modest forms of indirect regulation using economic incentives are observed to be gaining ground, particularly in the area of ships' waste, where charges are being adopted to particularly prevent shipping pollution. Civil society actors are also influencing environmental reform in some of the ports but in a protestation style, and deviating

from ecological modernization's co-operative approaches in finding environmental solutions.

Altogether, as shown in Table 3.3, a gradual, unsystematic, environmental reform is emerging in WCA ports, albeit, in different forms and on uneven scale among the ports. In the next section, these differences are further explored and mechanisms and dynamics driving or hindering this emergent environmental reform in WCA ports are discussed.

3.5 Discussion

As findings from this study suggest, the environmental reform process in WCA ports can be inferred to be driven or hindered by three key institutional factors: *globalized economic and political dynamics*, *national politico-administrative structures*, and *local conditions and port institutions*.

3.5.1 Globalized economic and political dynamics

Changes in the role of the state in environmental protection and management of WCA ports have been precipitated by globalization-induced economic liberalization. First, concern for global environmental degradation has moved environment from the periphery to centre stage. In this development, environment has become inextricably linked with economic processes. For ports globally, their economic competitiveness has become associated with positive environmental practices (Lou and Yip, 2013). It therefore stands to reason that, to be competitive and not lag behind, the environment nexus becomes inevitable for WCA ports. Hence, even though the objective of their institutional reform was to overcome operational inefficiencies, the need for modernizing port environmental approaches is simultaneously triggered. From this has emerged a shift in the environmental policy style of the ports from conventional state-led command-and-control approaches toward decentralization and collaboration. The state is no more the sole source of port environmental direction as the ports have begun connecting to global demands and practices. Abidjan port in the face of state-centrism has gone beyond national standards to pursue international environmental management standards – ISO 9001 and 14000 certification. Tema port embraced international regulatory demands to implement MARPOL and initiated action for the yet-to-come-to-force BWMC '04 in the absence of national regulations. Likewise, in Abidjan, civil society used global interconnectedness to successfully fight for environmental justice. The presence of multinational terminal operators has also contributed to the environmental reform of WCA ports through the diffusion of environmental knowledge and new standards and practices without state reliance. Lagos port, for instance, adopts policy measures with knowledge gained from the multinational operator. Additionally, in a mode

typical of globalization processes replacing state governance with multi-level governance, other states and multilateral bodies are co-determining environmental policy outcomes in the ports.

Table 3.3: Environmental reform dynamics in studied ports

Environmental reform dynamics		French Model Ports		British Model Ports	
		Abidjan (Ivory Coast)	Douala (Cameroon)	Lagos (Nigeria)	Tema (Ghana)
Approach		Centralised	Hierarchical	Flexible	Co-management
Environmental authority		Specialised environment unit; limited role for Port authority	Environment committee; no formal role for port authority	Specialised environment unit; formal role for port authority with overlaps	Specialised environment unit; formal role for port authority
State/non-state actors collaboration		State controlled collaboration; ad-hoc parallel port authority and private economic actor collaboration alongside state	Inter-personal relations between port authority and private economic actors alongside state	Institutionalized collaboration between state, port authority, other states and multilateral bodies; Parallel collaboration between port authority and private economic actors alongside state	Institutionalized collaboration between state, port authority, private economic actors, other states and multilateral bodies; Parallel collaboration between state, port authority and private economic actors steered by the port authority alongside state;
Role for International actors		Multilateral bodies taking up roles	Ad-hoc role for multilateral bodies	Other states and multilateral bodies taking up roles	Other states and multilateral bodies taking up roles
Economic actors (multinational terminal operators)		Reducing carbon emissions; increasing fuel-efficiency	Reducing fuel consumption; promoting recycling and reuse; vehicle access plan	Converting diesel cranes to electric with idle shutdown devices; reducing oil spill; recycling reused oil	Reducing carbon emissions and energy consumption; terminals and cranes fitted with energy efficiency lights; cargo equipment with idle shutdown devices
Economic actors and incentives		State instituted environmental taxes; free-market or direct charge system for ships' wastes*	State controlled free-market or direct charge system for ships' wastes	Port authority initiated environmental levies; indirect fee for ships' wastes	Port authority initiated indirect fee for ships' wastes; rebate for frequent ships
Partnership		Incidental protests for environmental justice	Not observed	Not observed	Incidental protests for environmental compliance
Globalized civil society support		International legal assistance and support	Not observed	Not observed	Local civil society
Environmental Reform Progress		Moderate	Limited	Fragmented	Progressive

Moreover, the adoption of environmental charges following the ‘polluter pays principle’ comes at the heel of contemporary globalized practices. Ports, particularly those in advanced economies, are using the marketization of global environmental policies via various kinds of economic incentives and disincentives to respond to their increasing environmental concerns (IAPH, 2007; Lam and Notteboom, 2014). This is exactly what can be observed as emerging in WCA ports in controlling shipping pollution. It is worth noting, however, that central state authorities, MinEEF and MinENP instituted and control the charges for Abidjan and Douala, while for Lagos and Tema the port authorities themselves initiated and controlled the charges. In effect, globalization dynamics are substantially driving the environmental reform process in WCA ports.

3.5.2 National politico-administrative structures

Although globalization processes may be seen as having a homogenizing effect on environmental reform of WCA ports, the extent and pace varies greatly depending on national politico-administrative structures. The phenomenon is confirmed by Mol (2002) that, even under globalization, environmental reform depends greatly on institutional circumstances of nation-states. National politico-administrative structures in WCA carry the stamp of colonial constructions that leave ports sharing a common colonial legacy to show similar forms of environmental governance. For French-model ports, Abidjan and Douala, environmental policy-making is concentrated in state institutions with environmental power drawn toward a single centralized authority. Conversely, for British-model ports, Lagos and Tema have environmental policy-making shared between centralized and decentralized authorities, but also with some variation among them. Lagos on one hand, has multiple state overlapping institutions working simultaneously with decentralized actors in environmental policy-making. Tema on the other hand, has the state institution using co-management approach in defining and negotiating environmental policy-making with decentralized actors.

National politico-administrative structures for French-model ports offers less flexibility in adopting new approaches to environmental reform unlike their British-model counterpart with more flexibility better suited to pursuing environmental reform in ecological modernization mode. For instance, the less willingness of the centralized national politico-administrative structure of Abidjan to give up state environmental control over port economic actors leaves the port with a limited environmental role. Furthermore, the hierarchical nature of Douala’s politico-administrative structure restrains the formalization of the port’s environmental role. However, flexible politico-administrative structures for Lagos and Tema give them formal and active environmental roles in facilitating their reform.

There is an influence of colonial legacy on the environmental reform of WCA ports but with no bearing on their colonial set up – hybrid for French-model and service for British model. That set up has become blurred by the institutional reform of the ports into predominantly landlord.

The colonial influence stems from the relationship between the ports and central state authorities. It has the capability of enabling or constraining environmental reform progress of the ports. Considering that, economic profits for ports require environmental responsibility and action, and given findings on the actual environmental performance of the ports, the study suggests that when given flexibility, WCA ports can take up environmental roles and play it effectively in their endeavour to develop and become competitive.

3.5.3 Local conditions and port institutions

The environmental reform progress of WCA ports is sensitive and adaptive to specific local problems and port institutions. The port authorities are utilizing their greater autonomy from institutional reform to adopt collaborative arrangements with their private economic actors. However, there are differentiations according to given local contexts in which the ports find themselves, albeit, without interference from the state.

Abidjan port for instance, while it is WCA ports' environmental forerunner has its environmental reform progress rather stressed and moderate. Accario et al., (2014) assert that successful port environmental innovation is dependent on favourable institutional environment. That notwithstanding the port authority has gone ahead to initiate ad-hoc collaboration with its multinational terminal operator alongside existing state arrangements. Similarly and even in a much stronger state-centric vein, Douala port authority faced with hierarchical politico-administrative arrangements is exploiting options available to it – inter-personal relations alongside existing state arrangements. Environmental reform progress for Douala port is however limited. Lagos port, though having flexible politico-administrative arrangements has its environmental reform progress fragmented due to multiple institutions with overlapping roles. To overcome that, the port authority has also institutionalized collaborative arrangements side-by-side that of state institutions. Other collaborative arrangements also exist between state environmental authorities, the port authority, and other states and multilateral bodies. Tema port, having a politico-administrative institution that co-manages environmental roles, shows a progressive environmental reform. The port authority, taking advantage, for instance, of the flexibility it enjoys, has not only institutionalized its collaborative arrangements but actually steers the arrangements while the state participates as an actor. Also, the state environmental

agency collaborates together with the port authority and other states and multilateral bodies.

Differentiation in local conditions also applies to the use of economic incentives in ways that leave WCA ports with the dilemma of environmental strictness. Given the lack of options for monitoring and control of illegal discharge at sea, the 'indirect charge' system practiced by British model ports in which ships pay regardless of discharging their waste or not, is arguably a better incentive for preventing ships dumping their waste at sea and offers more scope for progress of environmental reform. The 'direct fee' of the French-model ports, though a market mechanism that offers incentive to ships incentive to minimize waste, makes illegal discharges at sea potentially attractive. It could be argued here that raising fees weakens competitive position, and that ports, when given more room for decision-making, will engage in a race-to-the-bottom-like regulatory competition that could reduce environmental standards among them. To counter such process, Homsombat et al., (2013) advocate inter-port co-operation to harmonize pollution control. For the case of Abidjan in this study, no competitive disadvantage was observed from installing environmental fees. Additionally, modest forms of environmental co-operation among WCA ports have been observed to be emerging (forthcoming publication). Strengthening this co-operation and harmonizing environmental standards, fees and incentives should eliminate regulatory competition among WCA ports and place them on an even playing field for their further environmental reform and development.

3.6 Conclusion

This article has investigated ways in which WCA ports are addressing their environmental risks. Four ports: Abidjan, Douala, Lagos and Tema, were compared. Three key elements of ecological modernization theory – changing role of the state, growing involvement of economic actors and economic incentives, and shifting roles for civil society organizations – were used as a sensitizing framework.

The institutional reform of WCA ports has brought in its wake a gradual but still fragmented and limited process of environmental reform. The ports have gained greater autonomy from the state. Environment has been decentralized and institutionalized in the ports. Port authorities and multinational terminal operators have taken up new environmental roles. Various collaborative arrangements have emerged in co-existence with conventional state arrangements. Environmental roles have also emerged for other states and multilateral actors along the state. Also, forms of economic incentives to prevent pollution from shipping have been adopted. Roles for civil society have however been largely absent except for incidental protests in Abidjan and Tema. It is found that institutionally, WCA ports structure on colonial legacies from either French or British empires. While the French-model ports

operated under a form of hybrid (landlord and service), the British-model operated service ports. Nonetheless, following global economic liberalization, these typical differences have blurred with the ports reforming toward the landlord management model with container terminals concessioned to multinational terminal operators. Irrespective of the blurring, the emergent environmental reform of the ports is influenced by colonial legacy. The influence stems from the relationship between the ports and national politico administrative structures, which have enabling and constraining capabilities for environmental reform progress. British-model ports with more flexible politico-administrative arrangements that enable the inclusion of new actors and mechanisms are better suited to pursuing environmental reform than French-model ports with centralized and hierarchical arrangements. The study therefore suggests that flexible politico-administrative arrangements are key to progress with environmental reform in WCA ports. Additionally, with flexibility, the ports can take up and play environmental roles effectively in their endeavour to develop and become competitive. However, these arrangements are mostly beyond the influence of the ports. Another reform strategy, which is more accessible for the ports, is to direct attention at regional and international actors for co-operation and support. More so, partnerships with globalized civil society organizations as has been the case in some environmentally advanced ports as Rotterdam (Frantzeskaki et al., 2014) can help WCA ports to advance environmentally. Globalized civil society actors can inspire the interest of local civil society organizations in port environmental issues. Such approaches can be beneficial as WCA ports are themselves willing to address their environmental risks as part of development strategies to become competitive internationally.

Chapter 4. The influence of the regional coordinating unit of the Abidjan Convention: implementing environmental agreements to prevent shipping pollution in West and Central Africa

This chapter has been published as: Barnes-Dabban, H. and Karlsson-Vinkhuyzen, S. The influence of the Regional Coordinating Unit of the Abidjan Convention: implementing environmental agreements to prevent shipping pollution in West and Central Africa. *Journal of International Environmental Agreements: Politics, Law and Economics*.
DOI: 10.1007/s10784-018-9399-8

Abstract

The Regional Coordinating Unit of the Convention for Co-operation in the Protection and Development of the Marine and Coastal Environment for West and Central and Southern Africa (the Abidjan Convention) has under its wings several multilateral environmental agreements including those addressing shipping pollution. The Unit seeks to strengthen implementation of the convention by party-states through co-operation with state actors using various pathways based on its internal resources and competencies but the Unit is also starting to explore engagement with potential non-state actors. The ability of the Unit to exert influence on implementation is constrained by domestic politico-administrative institutions. This paper seeks to understand the influence of the Regional Coordinating Unit on the implementation of the Abidjan Convention in the field of shipping pollution. It uses three theoretical perspectives for the analysis: the influence of international environmental bureaucracies, domestic regulatory-politics, and transnational governance. The paper shows how these perspectives are complementary, because the influence of international bureaucracies such as the Regional Coordinating Unit cannot be adequately understood through factors internal to their organization alone but needs to be analysed in relation also to external factors, both domestic politico-institutional ones in states that international bureaucracies work with, and the role of relevant non-state actors in the implementation of multilateral environmental agreements. It is concluded that, although influence cannot be directly measured, it is likely that Regional Coordinating Unit's influence through its autonomy-centred efforts are quiet strong and negatively constrained by the traditional state-centric responsibility for implementation of international legal instruments where domestic regulatory-politics lack sufficient political will and support from and engagement with non-state actors.

Key words

West and Central African ports • influence • multilateral environmental agreements
• Abidjan Convention • Regional Coordinating Unit • shipping pollution

4.1 Introduction

The Convention for Co-operation in the Protection and Development of the Marine and Coastal Environment for the West, Central and Southern Africa, referred to as the Abidjan Convention (AC) is a treaty adopted in 1981 (UNEP, 1981) and catalysed by the United Nations Environment Programme (UNEP). The treaty is a comprehensive regional legal framework agreement for preventing marine pollution in the West and Central Africa (WCA) region through inter-governmental co-operation and lists shipping pollution as one of its foci. The Abidjan Convention is a regionally specific agreement that takes an integrative approach through putting many other agreements under its wings.

Party-states (from now on Parties) to the convention designated UNEP as its secretariat and established a small Regional Coordinating Unit (RCU) based in the city of Abidjan to support and strengthen national regulatory measures for its implementation. Within the context of Biermann and Siebenhüner's (2009) analytical conceptualisation of MEA secretariats as international bureaucracies (IBs) as well as Desai's (2010) model of MEA secretariats, the RCU reflects the characteristics both of a treaty secretariat and an IB. This is depicted in Table 4.1. It was referred to as a 'one-man show' by its Coordinator during the Ninth Conference of Parties (CoP 9) in 2011 in Accra, Ghana, as he was the only staff then. However, it has since been resourced with permanent offices in Abidjan by the government of Ivory Coast and complementary staff. The RCU can thus be distinguished as a secretariat within UNEP much in the same way as the smaller secretariats linked to the Montreal Protocol (Bauer, 2009a) and the UN Convention on Desertification (Bauer, 2009b).

The implementation of AC has been slow and its performance rather staggering (UNEP, 2005a). However, the Seventh CoP took decisions (UNEP, 2005a: 6; UNEP, 2005b:78)¹² in the year 2005 to have it revitalised, strengthened in its implementation, and the RCU made autonomous and effective. This paper seeks to analyse the ability of the RCU as an IB to strengthen implementation particularly on shipping pollution by exerting influence on the behaviour of Parties. The study focuses on two sources of shipping pollution; ballast water and oil spills. Two questions are investigated. First, how does the RCU influence the implementation of AC with regard to shipping pollution prevention from ballast water and oil spill? Second, what are the constraints to and the opportunities for strengthening RCU's influence on implementation of the Convention?

The paper combines Biermann and Siebenhüner's (2009) concept of IB influence and Raustiala's (1997) regulatory-politics framework with the transnational

¹² Decisions CP.7/1; CP.7/2; CP.7/3.

governance perspective (Pattberg et al. 2011; Biermann and Pattberg 2012; Duffy, 2013) as a conceptual framework. The motivation for this framework is that, understanding the influence of IBs in MEA implementation goes beyond factors internal to the organisation of IBs alone but needs to be analysed in relation also to external factors: both domestic politico-institutional ones in states that IBs work with (Raustiala, 1997; Bauer et al., 2009), and the role of relevant non-state actors (NSAs) in MEA implementation (Andonova et al. 2009; Okereke et al., 2009; Abbott, 2012; Kuyper and Bäckstrand, 2016). The concept of NSAs is used to mean all actors operating at sub-national, national, and across borders who are not associated with the national government, the state. This includes, for example, port authorities and environmental non-governmental organisations (ENGOS).

The RCU and four Parties to AC – Cameroon, Ghana, Ivory Coast, and Nigeria – with their respective port authorities of Douala, Tema, Abidjan, and Lagos are used as case studies of RCU influence. These Parties have all served on the bureau of the Convention in various capacities. Moreover, with their dependence on oil import to meet domestic energy needs, their ports face similar shipping pollution risks from ballast water and oil spill. Data collection involved a mix of face-to-face semi-structured interviews and distributed questionnaire. These were conducted and administered during AC's Ninth and Tenth CoPs in Accra, 2011, and Pointe Noire, 2012, respectively; the first Panel of Experts' Meeting on Strategic Assessment of Port Environmental Issues, Policies and Programmes (SAPEIPP) in WCA, in Abidjan, 2015; and, visits to the selected ports. Key informants included officials of the RCU, UNEP, Interim Guinea Current Commission (IGCC), Port Management Association of West and Central Africa (PMAWCA), National Focal Points (NFPs) of AC from case study Parties, and the International Maritime Organisation's (IMO) Regional Representative in Accra, as well as Environmental Managers of port authorities of case study Parties. All respondents were guaranteed anonymity and therefore their responses are identified by institutional affiliation. Observations during meetings and field visits are also drawn upon. The researcher's role in Ports Environmental Network-Africa (PENAf), an ENGO, facilitated his participation in

Table 4.1: Characteristics of RCU as an International Bureaucracy

Secretariat	Set up and location	Hierarchically organised	Independence and autonomy	International (Regional) civil servants	Mandate	Constituent instrument	Linkage to UN and other international entities
Regional Coordinating Unit of the Convention for the Co-operation in the Protection and the Development of the Marine and Coastal Environment of the West, Central and Southern Africa Region (Abidjan Convention)	Institutionalised by Parties and UNEP; Permanent in nature and in coherence with Abidjan Convention as a regional secretariat;	Subordinated to Conference of Parties and ministerial steering committee as bureau; Works together with national focal points (focal point forum) for co-ordination and internalisation of policy, legal and regulatory agreements; Has a nodal structure arrangement with the Convention's three large marine ecosystems: Benguela Current, Canary Current, and Guinea Current;	Beyond formal control by any individual party;	International from Parties and local support staff recruited according to UN regulations; Shared support staff from multilateral organisations and agencies;	Strengthening programmes, research, and support services for the Convention's action plan; Fundraising and co-ordinating with bilateral donors; Enhancing co-operation with other projects and initiatives working towards the Convention's objectives; improving working relationships with UN and other organisations on relevant projects; Establishing institutions to promote policies on coastal and marine environment issues;	MOP.1/1/2008 on enhancing institutional arrangements and collaboration for the Abidjan Convention; MOP.1/3/2008 on review of the title, mandate and objectives of the Convention;	Established links with IOC-UNESCO GOOS-AFRICA, IMO, IUCN, WWF, FAO, NOAA, and also project arrangements as IOCEA/IOC, UNEP/GPA, NEPAD/SINEPAD and PRCM;

Source: Building on Biermann and Siebenhüner (2009) and Desai (2010)

CoP meetings and co-organising SAPEIPP. Finally, the paper relies on interviews, questionnaires and participant observations as primary source of information and the review of relevant literature, reports, and working documents of the RCU, and governments and port authorities, as secondary sources of information.

The next section introduces the conceptual framework for the study. It is followed by the results of the analysis of RCU’s influence, potential opportunities for how that influence can be strengthened and finally discussing the results and drawing some conclusions.

4.2 Conceptualising influence: international bureaucracies and the implementation of multilateral environmental agreements

Conceptual Frame

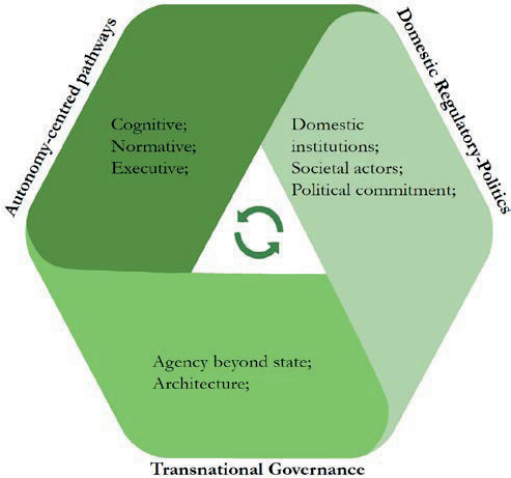


Figure 4.1: Understanding the influence of International Bureaucracies

Three different theoretical perspectives: ‘*autonomy-centred*’, ‘*regulatory-politics*’ and ‘*transnational governance*’ are combined in a re-conceptualised framework (Figure 4.1) for analysing the ability of IBs to exert influence on MEA implementation. Biermann and Siebenhüner (2009) characterise three ‘autonomy centred’ pathways: *cognitive*, *normative*, and *executive* in analysing how IBs exert influence. These pathways relate to factors internal to the organisation of IBs, specifically, their resources and competencies (Bauer et al., 2009). However, there are external factors that influence the ability of IB’s to exert influence. First, IBs ‘act within a chain of principal-agent relationship’, with states as principals and IBs as agents, (Bauer et al., 2009: 27). This is associated with ‘regulatory-politics’ (Raustiala, 1997) in domestic settings that can constrain the influence of IB’s on implementation. Second, NSA constellations that

operate beyond borders and engage with regional and international environmental governance through ‘transnational governance’ approaches (Pattberg et al. 2011; Biermann and Pattberg 2012; Duffy, 2013). Such approaches could be potentially relevant for strengthening IB efforts in MEA implementation. In summary, domestic factors and NSA interactions across borders may influence the ‘uptake’ of IB efforts to strengthen MEA implementation. The following sub-sections describe each of the three theoretical perspectives in turn.

4.2.1 Autonomy-centred influence of International Bureaucracies

Biermann and Siebenhüner (2009) synthesise three notions to conceptualise the ‘autonomy-centred’ perspective of the influence of IBs. Cognitive elements of social constructivists (Barnett and Finnemore, 1999), normative elements from regime theorists (Young, 1982), and capacity-building notions from principal-agent theorists (see Pollack, 1997; Hawkins et al., 2006) are used in classifying three analytical pathways of IB influence in global environmental governance relating to environmental protection – cognitive, normative, and executive. IBs are in this way conceptualised as ‘analytically apart from the collectivity of member-states of international organisations’ (Bauer et al., 2012). The analytical pathways are specifically applied to MEA implementation in this study.

Cognitive pathway: IBs as knowledge brokers conduct scientific studies on specific environmental issues to generate information, which is disseminated to all kinds of actors including states and NSAs. IBs thereby create convergence around policy-relevant solutions and influence the interest and behaviour of actors towards specific environmental issues in international environmental governance. The taking up and using of such information and knowledge by relevant actors ultimately raises the prospects of MEA implementation (Miles et al., 2001).

Normative pathway: IBs facilitate international discussions and negotiations among actors in international governance arenas on specific environmental issues. In the process, IBs influence which actors participate in negotiations, define and drive policy agenda, and draft decisions. They, in effect, shape inter-governmental co-operation and the institutionalisation of specific environmental issues and solutions. Even though IBs may not be key players during international negotiations, their influence can be substantial (Young, 1994).

Executive pathway: Through the provisioning of direct assistance in the form of trainings and workshops for national actors, IBs support capacity building for local and national level implementation of MEAs and decisions at negotiations (Widerberg and Laerhoven, 2014). Stronger administrative and regulatory capacities better position states to implement MEAs (Biermann and Siebenhüner, 2009).

4.2.2 Regulatory-politics and state receptivity to the influence of international bureaucracies

States are assumed to negotiate MEAs in good faith and expected to implement them (Chayes and Chayes, 1993). But implementation is determined by domestic regulatory processes. Using the divergent responses by UK and USA to the CBD regime, Raustiala (1997) theorises the interplay of three domestic variables – *domestic institutions*, *societal actors*, and *political commitment* – as ‘regulatory-politics’ that influence state choice towards MEA implementation.

Domestic institutions are structured and supported by varying political systems. The regulatory arrangements that flow from them constrain or enhance which MEA measures are implemented by governments.

Societal actors include firms and environmental organisations who lobby governments in line with their interests, but whose expectations are determined by regulatory processes for domestic implementation of MEAs.

Political commitment of governments to MEAs implementation can be undermined by economic development. Governments use resources towards what favours their political agenda. Those focusing on environmental benefits may comply with MEA obligations, while others concerned with immediate economic benefits may deviate in compliance.

The domestic variables point to the centrality of domestic institutions in MEA implementation and could constrain the uptake of IB measures. Although Raustiala (1997) does not consider the role of IBs, possibly because of a focus on OECD countries where domestic capacity is not a constraint for MEA implementation, in many non-OECD countries, weak MEA implementation mechanisms (Gray, 2003) means they rely on IB support for implementation (Biermann and Siebenhüner, 2013).

4.2.3 Transnational governance prospects for the influence of international bureaucracies

A state-centric inter-governmental approach to global environmental governance, where MEAs are developed and implemented primarily by states, is limiting both in theoretical and empirical terms. It can be slow and cumbersome in addressing complex transnational environmental problems (Van Tatenhove and Leroy, 2003; Biermann and Pattberg, 2012), particularly where the willing co-operation of societal actors directly engaged in the causation or prevention of environmental degradation is required. As shown in climate discussions, when the implementation ambition for MEAs by governments is too weak due to lack of political will, NSAs may fill the

‘gap’ in regulatory ambition (Pattberg and Stripple, 2008; Bulkeley and Newell, 2010; Dellas et al., 2011). The literature on transnational governance re-conceptualises the increasing relevance of border-spanning private and public-private approaches, using two central elements. First, there is *agency beyond the state*, which emphasises the contribution (positive and negative) of different actors and their source of authority outside the domain of states and inter-governmental arrangements to address environmental problems. Second, there is *architecture*, which highlights institutional arrangements, interlinkages, principles and mode of steering among the different actors. These elements add new dimensions to how IB influence on MEA implementation can be externally influenced.

4.3 The regional coordinating unit and three autonomy-centred pathways

This section explores the ability of the RCU to influence MEA implementation through the three autonomy-centred pathways of the conceptual framework. That is, the cognitive, normative and executive pathways of the RCU in influencing behavioural change among Parties toward ballast water and oil spill in preventing shipping pollution.

4.3.1 Cognitive pathway: brokering knowledge

The RCU generates and disseminates knowledge, and raises awareness to inform the understanding of Parties on marine environment issues. It has been involved in the preparation of the WCA component of the Marine Biodiversity Assessment Outlook Report¹³, which provided information on and flagged the rise in invasive species often from ships’ ballast water. Potential dangers associated with ships’ ballast water has been addressed under the Guinea Current Large Marine Ecosystem (GCLME) project initiated under the framework of the AC. The project undertook surveys to identify and evaluate WCA’s shared marine environment concerns and framed policy responses for reversing the degradation of the region’s marine and coastal environment (Ibe and Sherman, 2002). Under the project, a regional strategic action plan was developed in partnership with GloBallast¹⁴ (IGCC, 2009a). The regional strategic action plan is a framework for minimizing the transfer of invasive aquatic organisms in the Convention region in line with IMO’s International Convention on the Management of Ships’ Ballast Water and Sediments (BWMC). Additionally, large amounts of data and information on marine pollution from oil spills have been

¹³ Officially launched at CoP 10 of the Convention on Biological Diversity in Nagoya, Japan in October 2010.

¹⁴ A joint programme between the GE, UNDP, and IMO to assist developing countries reduce transfer of harmful aquatic organisms in ships’ ballast water.

generated in which the RCU under UNEP has been involved. These have included WCA marine pollution studies one (WACAF/1) on the institution and coordination of national contingency plans, and development of a regional oil spill contingency plan (UNEP, 2011a), in collaboration with IMO under the Global Initiative for West, Central and Southern Africa (GI-WACAF)¹⁵.

Information shared by the RCU was mostly circulated among national focal points (NFPs), who are designated national representatives such as environment ministry or agencies – to AC's CoP with responsibility for coordinating national implementation efforts. It seems not to have been much further shared with e.g. port authorities who are key actors.

Beyond generating information and knowledge, the RCU maintains a webpage. The webpage links that of UNEP and other UN and international organisations, from which scientific findings on regional seas including those on shipping pollution can be accessed. The actual use of the RCU webpage and by who, was not possible to ascertain. The RCU acknowledged its low visibility and mentioned that it had engaged a communication specialist to improve the situation. The RCU was also working together with IOC/ODINAFRICA¹⁶ on a regional data exchange and information management. Nonetheless, the potential for cognitive influence of the RCU is quite strong.

4.3.2 Normative pathway: facilitating negotiations

The RCU coordinates AC's action plan through the facilitation of inter-governmental discussions and negotiations on courses of action toward implementation. In doing this, the RCU prepares documents, translates, communicates and operationalises decisions made by NFPs, ministerial committees, extraordinary and CoP meetings.

Following the Seventh CoP decision by Parties in the year 2005 to revitalise and strengthen the convention, (UNEP, 2005a: 6; UNEP, 2005b:78)¹⁷ the RCU facilitated consultations and stakeholder meetings with key actors implementing marine and coastal programmes and projects in the Convention region to gather recommendations on how to proceed. The RCU further organised a review of recommendations by the ministerial committee, which were adopted by Parties at the Eighth CoP in the year 2007 (UNEP, 2008a)¹⁸. Subsequently, the RCU organised

¹⁵ Partnership between IMO and IPIECA, the global oil and gas industry association for environmental and social issues).

¹⁶ The Ocean Data and Information Network for Africa project of the Inter-governmental Oceanographic Commission of UNESCO.

¹⁷ Decisions CP.7/1; CP.7/2; CP7/3.

¹⁸ Decision CP.8/8.

the first extraordinary meeting of Parties in June 2008 to approve recommendations for the revitalization process (UNEP, 2009)¹⁹. The organisation of these meetings showed the RCU's ability to bring a variety of actors together. Parties, Non-Parties and NSAs as the African Union (AU), and the International Union on the Conservation of Nature (IUCN) were present.

The RCU also collaborated with IMO in the year 2007 to bring together legal and technical experts on the revision of the Convention's first Protocol, the Protocol Concerning Co-operation in Combating Marine Pollution in Cases of Emergency. This was to make provision for monitoring mechanisms, reporting and dissemination of pollution information (UNEP, 2011b) for enforcing implementation and compliance with IMO's International Convention on Oil Pollution Preparedness, Response and Co-operation (OPRC). It culminated in the Protocol's amendment, adoption of the regional oil spill contingency plan²⁰, and creation of a regional centre for coordination in cases of emergency²¹ at the Ninth CoP (UNEP, 2011b)²². Parties are required to adopt the regional oil spill contingency plan into national contingency plans and subsequently, sub-national contingency plans by actors with oil handling facilities, such as ports. Though the BWMC is yet to come into force, technical experts from Parties – mostly NFPs – and international partners have been brought together at several meetings including those in Accra, 2006; Accra, 2009; and Lagos, 2010, to harmonise and synthesise ballast water actions and procedures under the GCLME project. The meetings adopted the regional strategic action plan (IGCC, 2009a) in Abidjan in 2009 (IGCC, 2009b) and revised it in Lomé in 2011 (GCLME, 2011). Parties are required to develop monitoring and enforcement programmes in their ports to implement the regional strategic action plan. The regional strategic action plan is however yet to be adopted by AC's CoP. Altogether, RCU's potential for normative influence can be said to be very strong despite its limited size.

4.3.3 Executive pathway: capacity building

Efforts at training and technical assistance to strengthen skills and competencies of Parties started in earnest at the coming into force of the Convention but faded earlier than anticipated due to inadequate funding. Parties did not honour their commitment to the trust fund set up to replace UNEP's catalytic funding for capacity building efforts (UNEP 2005a). However, through RCU's collaboration with a number of multilateral partners, some technical assistance and trainings continue to be delivered.

¹⁹ MOP.1/1/2008; MOP.1/2/2008; MOP.1/3/2008; MOP.1/4/2008.

²⁰ Decision CP.9/6.

²¹ Decision CP.9/5.

²² Decision CP.9/4.

Collaboration with IMO's Technical Cooperation Programme, has for instance supported some Parties to consolidate their various marine environment regulations into comprehensive marine pollution legislation (personal communication, Accra, 2011). Similar collaboration with the OSPAR Commission has delivered workshops and trainings on marine pollution including those from oil spill. The IMO and Globallast partnership under the GCLME project has also organised a number of ballast water workshops to strengthen regional and national capacity to ensure protection from marine invasive species.

The trainings and workshops have mostly targeted NFPs and other state bureaucrats. However, officials from Douala and Tema ports participated in the ballast water workshops in the year 2009 in Accra and Abidjan (personal communication, Tema, 2014). The potential for RCU's executive influence has generally been weak.

In sum, the RCU is making efforts to influence shipping pollution prevention with measures for ballast water and oil spill. However, while the potential for RCU's cognitive effort is quite considerable, its normative effort is very strong. Nonetheless, its executive effort is generally weak. Put together, RCU's autonomy-centred efforts can be said to be inadequate.

4.4 Domestic (National) regulatory-politics

This section turns to the regulatory-politics part of the analytical framework for the study, to analyse the receptivity and uptake of measures from RCU's efforts by parties through the interplay of their domestic institutions, interests of societal actors, and political commitment.

4.4.1 Domestic institutions

The domestic politico-administrative institutions of Parties to the AC share a state-centric approach but have core differences among them. Two political systems, presidential and parliamentary, are predominant on a continuum ranging from hierarchical and highly centralised to flexible and decentralised. The presidential system of Cameroon and Ivory Coast combines decentralisation with authoritarian traits into a political hybrid (Ottaway, 2003) with hierarchical and highly centralised institutions after a typical French model (King, 1976). The presidential system of Nigeria has decentralised and fragmented institutions (Ottaway, 2003) and is typical of US's 'separated institutions sharing powers' (Neustadt, 1990). Serving as a contrast to the two different presidential systems is Ghana's parliamentary system. It has decentralised and yet fused institutions with flexibility, in political integration (Ottaway, 2003), and is similar to the British system (see Raustiala, 1997).

The different institutional arrangements affect the coordination needed for implementing RCU's measures. Cameroon, for instance, has the Ministry of Environment and Nature Protection (MinENP) as its NFP. MinENP's coordinating mechanisms across parallel and hierarchical institutions are ineffective. Formal responsibility for the national oil spill contingency plan is split between MinENP and the Ministry of Transport via its Merchant Shipping Department, and National Ports Authority. The plan remains in draft form (personal communication, Douala, 2010; Accra, 2011). In practise however, oil installations have sub-national plans coordinated by the National Hydrocarbons Authority, which falls under the Prime Minister's office. Ballast water is yet to be addressed by national regulation or inspection regime.

Ivory Coast has the Ministry of Environment, Water and Forests (MinEEF) as its NFP to the CoP. MinEEF together with, its agency, the Ivorian Antipollution Centre (CIAPOL) have responsibility for oil spill and ballast water. There is no documented national or sub-national oil spill contingency plan, though CIAPOL and some private oil operators have some response equipment (personal communication, Accra/Abidjan, 2012/2015 respectively). Furthermore, there is no action yet on ballast water.

Nigeria has the National Environmental Standards Regulations and Enforcement Agency (NESREA) as its NFP. However, responsibility for oil spill lies with multiple decentralised institutions. The Nigeria Maritime Administration and Safety Agency (NIMASA) has responsibility for oil spill beyond three nautical miles, while the National Oil Spill Detection and Response Agency (NOSDRA) takes charge for spills on land and inland waters. Despite functional overlaps, there is collaboration between NIMASA and NOSDRA. They hold periodic joint exercises to test response preparedness (personal communication, Lagos, 2012). Ballast water is regulated by NIMASA and it was the first domestic institution among Parties to the AC to develop national ballast water regulation in the year 2011, in line with the regional strategic action plan and IMO's yet to come to into force BWMC.

Ghana's Environmental Protection Agency (EPA) is its NFP. The Ghana Maritime Authority is the competent authority for shipping pollution but due to lack of capacity, coordination and collaboration is mostly led by the EPA. The EPA operates by a co-management approach that involves both state and NSAs. It has oversight responsibility for national and sub-national contingency plans and organises periodic response preparedness exercises. Additionally, a national ballast water regulatory framework implementing the regional strategic action plan and IMO's BWMC was adopted in the year 2013.

The differing political systems coupled with uncoordinated national institutions leave Parties with a shared difficulty in the implementation of negotiated measures. The

centralised systems leave state actors pursuing their own interest and potentially marginalising the values and interests of sub-national and local actors who can make contributions to implementation. The decentralised systems also do not share coordinated implementation mechanisms and leave disparities between approaches and motivations for on-the-ground implementation.

In sum, although Parties are collectively architects of the AC, their heterogeneous political systems and varying domestic regulatory processes may constrain the receptivity and uptake of RCU's measures for preventing shipping pollution.

4.4.2 Societal actors

A strong constituency for marine and coastal management among scientists and public officials in the AC region has long been asserted (Peart et al., 1999) but few actors engage in the field of shipping pollution. Potentially interested businesses and ENGOs have been relatively uninvolved and invisible. Port terminal operators are mostly pursuing environmental interests to obtain operational profits rather than for preventing shipping externalities. Similarly, civil society organisations mostly concern themselves with tourism, oil and gas, and fishing (see Mundus Maris, 2013) and not shipping. Governments of Parties, including cases studied in this paper, are therefore barely lobbied by societal actors on the issue of preventing shipping pollution. Decentralisation is said to be enhancing policy participation in Africa (Crook, 2003), but there is little to show in the field of shipping pollution prevention. Incipient environmental mobilisations toward shipping have been in the form of sporadic protests on toxic waste shipments to Koko port, Nigeria in the year 1988 (Ayobayo, 2014) and Abidjan port in the year 2006 (Leigh, 2009), and vessel dumping in Tema in the years 2000 and 2011 (personal communication, Tema, 2012). These mobilisations have predominantly focused on pressing for compensation payment and livelihood security.

The low-level engagement of societal actors on shipping prevention implies that there is not much external pressure on the state and its politico-administrative mechanisms to implement the AC and engage with the RCU efforts to increase implementation.

4.4.3 Political commitment

Parties studied, like many others in WCA, were beset with socio-economic decline during the 1980s, the period when the AC was adopted. To reverse their situation, the Parties turned to the International Monetary Fund and the World Bank for structural adjustment programmes linked with conditionalities that constrained their policy-choices. The governments lost their policy-autonomy (see Ikpeze et al., 2004:

356) wilfully transferring domestic economic policy-making to donors (Akonor, 2006). As observed by De Melo and Tsikata (2015), unequal resource endowment lowers the needed compromise for common policies toward externalities and leads to differential policy preferences. Parties studied are endowed with oil. While Nigeria is Africa's largest oil producer, Ghana has quite substantial prospects (KPMG, 2014). Both have developed national oil spill contingency plans with sub-plans for their ports, Tema and Lagos respectively. Cameroon became a modest oil exporter in the year 1977 and has its production declining since the year 1985 due to maturing fields (Daly, 2012). Cameroon has a draft national oil spill contingency plan, but has no sub-national plan for its Douala port. Ivory Coast too has modest oil endowments and is known more as an oil refining country than an oil producing country (Mbendi, 2012). The country has no documented national nor sub-national plan for its Abidjan port.

In managing ballast water, Ghana and Nigeria have adopted regulations. On the contrary, Cameroon and Ivory Coast are yet to show such commitment.

Apart from variation in adopted policies related to AC implementation, Parties have not committed themselves to financial obligations to the trust fund for running activities of the Convention. This has been an underlying cause for the Convention's slow and staggered performance (UNEP, 2005a).

In sum, Parties have been apathetic towards AC implementation. They show no strong signs of political will. This is likely to constrain the ability of the RCU to influence the behaviour of Parties towards shipping polluting prevention.

4.5 Transnational governance

Next to national politics, this section uses the transnational governance part of the conceptual framework to analyse how the RCU interacts with NSAs in its efforts for increasing the implementation of the AC in the area of shipping pollution prevention. The emergence of agency beyond the state and the ensuing architecture are specifically explored.

4.5.1 Agency beyond the state

Beyond focusing its efforts through inter-governmental co-operation, the RCU has initiated direct dealings with NSAs including port authorities of Parties and ENGOs. WCA ports are generally state-owned but most of them have undergone institutional reforms since the year 2000 towards public-private participation (Pálsson et al., 2007). The port authorities have thus gained more autonomy from the state with a new public-private governance character as NSAs. Port authorities have been working with PENAf, an ENGO that supports environmental capacity of African

port authorities to co-operatively address their common environmental challenges. PENAF does not directly lobby governments but collaborates with the Port Management Association for West and Central Africa (PMAWCA), the regional inter-governmental port organisation, in order to raise awareness and share environmental information and to implement regionally agreed outcomes.

The RCU, using its facilitation, invited PENAF to make presentations on environmental challenges facing WCA ports at the stakeholder workshop segment of the Ninth and Tenth CoPs in 2011 in Accra, and 2012 in Pointe Noire, respectively. Subsequently, parties in Decision CP.9/1(4) (UNEP, 2011b) requested the RCU to include PENAF among its collaborative partners. The Tenth CoP approved with Decision CP.10/9) to operationalise the collaboration towards environmental capacity building for ports in the convention region (UNEP, 2012a). A Memorandum of Understanding (UNEP, 2012b) was signed to that effect. NFPs interviewed at the Ninth and Tenth CoPs acknowledged that there were gaps in the role for ports and the shipping sector in discussions and negotiations on shipping pollution. The interviewees revealed that actors from the ports and shipping sector have never been a part of CoP meetings. A review of participants list for CoP meetings confirmed this.

The RCU has operationalised its collaboration with PENAF through the organisation of the first meeting of panel of experts' on SAPEIPP for the Abidjan Convention region in Abidjan in May 2015 (UNEP, 2015). It was organised in collaboration with PMAWCA and hosted by the Abidjan port authority. The meeting was a benchmark for the engagement of ports in environmental governance in WCA bringing together a dynamic mix of state and NSAs led by an IB. The participating port authorities, including those studied in this paper, shared their different environmental initiatives. Tema port had on its own volition adopted the regional strategic action plan for ballast water and initiated biological surveys²³ of its basin ahead of state regulations. It did this in the year 2009 after participating in ballast water workshops in Accra and Abidjan. The green port concept and other forms of environmental knowledge and globalised practices were shared in the meeting by environmental professionals, academics, and international organisations, from across Europe and Africa.

In sum, the port authorities and PENAF come up as emergent NSAs with potential relevance for enhancing RCU's effort towards shipping pollution prevention through non-state approaches outside state decisions.

²³ Considered vital for assessing existing levels and types of environmental and marine biological risks ports may be facing. It can be a useful tool for managing safety and environmental risks and gauging future impacts in ports.

4.5.2 Architecture

Differences in institutional arrangements and practices for implementing MEA measures including those relating to shipping pollution got interlocked in a norm-setting and norm-implementation process at the SAPEIPP meeting in Abidjan in the year 2015. Port authorities for the Parties studied have divergent environmental priorities, regulations and approaches contingent upon their respective national political systems. These straddle along a continuum of hierarchical top-down to co-management governance styles (see section 4.4). However, participating port authorities at the SAPEIPP meeting, together prioritised four common environmental risks: ballast water, ship wastes, municipal waste, and air pollution. An overarching action plan for addressing the risks was developed and adopted. The use of EcoPort tools and certification²⁴ as a first-easy step towards ISO 14001 was adopted. Each port authority was tasked to nominate a port contact person to work closely with NFPs for their respective countries. This was to link environmental co-operation among the ports with existing mechanisms of AC's traditional inter-governmental negotiation. A declaration (UNEP, 2015) called for commitment by the RCU in collaboration with PENAF, PMAWCA and the port authorities in a transnational arena mode (see Pattberg, and Stripple, 2008). It called for a steering mechanism for inter-port environmental co-operation across sub-national, national and supra-national port-levels to develop non-legally binding common environmental procedures and norms, sharing of common environmental database, and harmonised environmental policy guidelines. The declaration also called for the institutionalisation of the panel of experts as a group to meet annually in an African Ports Environment Conference. Support from international organisations and development partners as IMO, UNEP, AU, AfDB, among others was also emphasised. The declaration was approved at PMAWCA's Council Meeting in June 2015 in Abidjan.

In sum, the RCU is facilitating a hybrid transnational arrangement – inter-governmental, NSAs, and states – outside of different and non-synchronised inter-governmental co-operation. This offers potential for enabling the RCU's efforts towards preventing shipping pollution.

Altogether, transnational governance can be said to be potentially enabling for RCU's influence towards preventing shipping pollution.

²⁴ The only standard especially designed for ports. The tools form a basic standardised port environmental management system as a first step for ports to organise environmental management.

Table 4.2: Understanding the potential influence of RCU as an International Bureaucracy in preventing shipping pollution

Analytical perspectives	Elements	Indicators	Output	Influence
Autonomy-centred influence	Cognitive	Knowledge generation and dissemination	Quite strong	Inadequate
	Normative	Negotiation facilitation	Very strong	
	Executive	Organising trainings and capacity building	Weak	
Domestic regulatory-politics	Domestic Institutions	Structured by political national systems	Apathetic	Constraining
	Civil society	Lobbying governments	Less prominent	
	Political commitment	Economic benefit from resources	Lack of political will	
Transnational governance	Agency beyond state	Actors outside state domain and inter-governmental arrangements	Non-state approaches	Potentially enabling
	Architecture	Institutional arrangements and practices through stakeholders' decisions across levels	Hybrid transnational arrangement	

4.6 Discussion

The rationale for this study was that the influence of IBs cannot be adequately understood through factors internal to the organisation of IBs alone. Empirical analysis of how the RCU engages in order to influence the behaviour of Parties towards ballast water and oil spill in preventing shipping pollution already provides some justifiable results. Table 4.2 presents a summary of the analysis based on the framework for the study. Broadly, potential influence of the RCU as an IB can be found to be characterized by two dynamics: *existing state-centric inter-governmental co-operation*, and *emergent transnational arena*, that are nuanced with constraining and potentially enabling factors respectively.

RCU's *existing state-centric inter-governmental co-operation* gives an assumption of collective action with overriding emphasis on the role of the RCU as an IB assisting parties to realise common interests. Generating and disseminating knowledge and information by the RCU has set the agenda for framing shipping pollution prevention measures among Parties. It has shaped awareness and attention of parties to oil spill and ballast

water issues, and led to the development of measures, the regional oil spill contingency plan and the regional strategic action plan for ballast water, to deal with them. Furthermore, the RCU initiating and facilitating a variety of discussions and negotiations in ways that makes it look like a service provider has shaped the processes for co-operation toward matters of common interest. This is particularly evident from how the RCU brought together Parties and Non-Parties, regional economic communities and international actors together to deliberate and decide on AC's revitalisation as well as strengthening the RCU itself. These strong influences are however weakened by the RCU's inability to provide adequate support for capacity building due to Parties' lack of financial commitment. This makes the RCU's efforts at influencing shipping pollution prevention through its internal resources and competencies rather inadequate. The lack of commitment by Parties already reveals that, next to efforts of IBs to influence Parties' behaviour, much depends on how their efforts are received in the national politico-administrations of Parties. Ultimately, giving effect to RCU's effort towards action on oil spill and ballast water is expressed in their receptivity and uptake of measures emanating from IBs' efforts. Therefore, understanding RCU's influence becomes inclusive of both its internal organisational factors as well as external factors from Parties.

The receptivity and uptake of RCU's measures by Parties is couched in heterogeneous domestic political systems. Additionally, here, presumption of equality among Parties and propensity for mutual benefit from inter-governmental co-operation becomes illusive. The uptake of RCU's oil spill and ballast water measures vary among Parties, reflecting a case of the lack of political will. Parties with hierarchical and highly centralised institutions as Cameroon and Ivory Coast have on one hand, to some degree, taken up oil spill measures at national and sub-national levels, but with no action on ballast water. On the other hand, Parties with decentralised institutions as Ghana and Nigeria have taken up and implemented both measures at national and sub-national levels. Evidently, Parties with modest oil endowment show less interest in implementation of AC's shipping pollution prevention measures. Domestic politics therefore externally constrain the already inadequate potential influence of the RCU towards shipping pollution prevention using its internal organisational factors.

The RCU however knows how to exert its strongest pathway of influence, the normative pathway, through facilitating negotiations. The RCU directs discussion processes and shapes outcomes letting it look like the idea of the Parties. This is visible in how it obtained approval of the Ninth and Tenth CoPs to collaborate with NSAs connected with ports and the environment. In a countervailing effort that offsets domestic politics, the RCU 'pushed' Parties into giving it the mandate to move beyond traditional inter-governmental co-operation towards an *emergent*

transnational arena with direct dealings among NSAs across the states. The new arrangement advances NSAs interests and approaches that aim at independent port environmental governance responses rather than influencing the decisions of Parties. This is similar to transnational co-operation on climate change between sub-national governments, NGOs, and state agencies (Andonova et al., 2009) and also, cities in climate governance (Betsill and Bulkeley, 2004; Kern and Bulkeley, 2009). In the case of this study, the NSAs are seeking to work together with core-state actors in finding practical solutions to common port environmental problems in a shift away from state-led approaches. They do not seem to be consciously set out to fill gaps in regulatory ambition of RCU's shipping pollution measures. But the absence of established broader public-private arrangement for governing common and transboundary environmental problems faced by WCA ports creates a governance failure for which collaborative actions between and among the RCU and NSAs across states seem to construct a new political space. As asserted by Duffy (2013), 'the complexity and transnationality of environmental issues lead to the call for a more and thorough engagement of NSAs to develop effective frameworks of global governance'. The RCU, oriented towards traditional inter-governmental co-operation, can be seen to be pursuing transnational governance experiments (Bulkeley et al., 2012) with innovative ways in preventing shipping pollution beyond traditional intergovernmental co-operation. This transnational governance pursuit is potentially enabling for RCU's efforts at influencing behavioural change of Parties.

Unlike private or private-public driven transnational governance arrangements established on the basis of market mechanisms (Bulkeley et al., 2012), the emergent transnational environmental governance for WCA ports is state-driven by an IB, but by-passing states at national level and dealing directly with NSAs at sub and supra-national levels in a new space of political authority.

Overall, the discussion clearly underscores the relevance of a broadened analytical approach to understanding the influence of the RCU as an IB towards the implementation of the obligations related to shipping pollution prevention in the AC among Parties. Although influence cannot be directly measured, it seems clear that whereas the RCU's influence through only its autonomy-centred efforts remain inadequate, traditional state-centric responsibility for implementation of negotiated measures through domestic regulatory-politics that subsumes role for societal actors, obstructs RCU's efforts and weakens its influence. A multi-centric analysis in which NSAs alongside state actors engage in transnational steering largely independent of inter-governmental politics offers potential for harnessing RCU's efforts and influence. It does suffice then to say that, with increasing role and relevance of NSAs and the deepening institutionalisation of NSA approaches to global environmental governance beyond the state, particularly in climate change, the influence of IBs go

beyond their internal organisation and that of states with whom they work, while transnational governance becomes an essential arena for additional focus.

4.7 Conclusion

This study has complemented perspectives of pathways of IB influence with the potential role of domestic regulatory-politics and transnational governance to better understand the influence of IBs in MEA implementation. It expresses the linkage between internal organisational factors of IBs and external factors at the domestic level in determining the influence of IBs. The analysis has particularly shown that a new conceptualisation of IB influence is essential. First, the analysis intertwines IB influence to constraints of domestic politics and already exposes the inherent weaknesses of MEA implementation. Second, the analysis accounts for spheres of influence beyond the pre-eminent realm of states and the national level. It is interesting to note that, this emergent IB-led transnational arena of port environmental governance outside institutionalised governance arenas for WCA is unlike those mostly private-led ones, as in climate change, in the literature. In short, the study contributes to the literature on IB influence and transnational approaches in international environmental governance. It remains to be seen how the emergent governance approach can have influence. Nonetheless, change of perceptions, descriptions and normative understandings of port environmental problems are already evident among WCA ports. Besides, the approval of the SAPPEIP declaration by PMAWCA Council indicates a trend towards the institutionalisation of regional port environmental governance beside state-led mechanisms for WCA.

Chapter 5. Regional convergence in environmental policy arrangements: a transformation towards regional environmental governance from West and Central African ports?

This chapter has been submitted and is undergoing review as: Barnes-Dabban, H., Van Koppen, C.S.A. (Kris), and Van Tatenhove, J.P.M. Regional Convergence in environmental policy arrangements: a transformation towards regional environmental governance for West and Central African ports? *Ocean and Coastal Management*.

Abstract

Environmental policy-making in West and Central Africa, with implications for the region's ports, is usually dominated by state actors that also represent the nation-states at regional inter-governmental co-operation. The ports share common and transboundary environmental problems but fall under diverse political and decentralisation systems. Also, in spite of regional inter-governmental co-operation there is disagreement between regional environmental policies and those for the ports at sub-national (local) level. The port authorities are largely absent in environmental negotiations with outcomes ignoring their contributions. However, institutional reform of the ports from the year 2000 onwards has seen the port authorities gaining greater autonomy as public non-state actors and beginning to get involved in environmental policy-making. This paper seeks to understand how environmental policy-making and governance is transforming in West and Central African ports. By combining the policy arrangement approach, the main analytical tool for the paper, with the concept of regional convergence concept, the interaction processes among key actors involved in port environmental policy-making in West and Central Africa are studied. The study finds a developing innovation of joint environmental policy-making arrangement in which West and Central African port authorities, from sub-national (local) level, are engaging directly with regional inter-governmental and Environmental Non-Governmental actors. The developing innovation by-passes institutionalised state-led environmental policy-making arrangements, with potential for transforming environmental governance for West and Central African ports. It is concluded that non-state actors, when given flexible manoeuvring, can be innovative in overcoming diverse statist political dynamics in dealing coherently with transboundary environmental issues within a territorial region. However, state actors remain key as linking pins in transboundary environmental policy and governance.

Key words

West and Central African ports • port environmental governance • policy arrangements • regional convergence • multiple level governance

5.1 Introduction

Africa has become reckoned as the world's fastest growing continent (AfDB, 2013: 3; AfDB et al., 2015). Sustaining its economic progress has necessitated institutional and governance reforms (Joseph, 2016) to signal 'readiness for business' by the continent's governments. The reforms have led to a better business climate with investors blending in private/public-private arrangements that are building patterns for addressing real societal needs (see Mahajan, 2009; Radelet, 2010a; 2010b) and transforming policy and governance.

West and Central Africa (WCA) tends to be the most positive and optimistic region in Africa (Hofmeyr, 2013). The region, understood as a territorial confine, has multiple national jurisdictions and institutional constructs to deal with environmental issues. The region is dependent on export of cash crops and other bulk natural resources to sustain economic growth. Ports are thus crucial for the region and have become impacted by unfolding economic and political governance. Most WCA ports have undergone institutional reforms since the year 2000, with increasing public-private partnership dominated by multinational terminal operators (Pálsson et al., 2007; Drewry, 2008; AfDB, 2010), particularly A.P. Moeller-Maersk and Bolloré groups, to enhance their operational efficiency. The port authorities have thus assumed a public non-state character with greater autonomy from the state. They have hitherto been showing high growth in productivity with fastest growth rate in the world for the period between 1995 and 2005. During this period, container traffic for the ports grew 400% in ten years from 1,035,400 to 4,802,000 twenty equivalent units (TEUs) at 14.7% per annum (Ocean, 2009; Foster and Briceño-Garmendia 2010; see also Harding et al., 2007). During the same period, general cargo grew at 10.2% per annum from 23.12 to 61.23 million metric tons per annum (Ocean, 2009). The region's ports are expected to continue growing with forecasts of 7.8% per annum between 2013 and 2018 (Drewry, 2015).

While the ports are recording positive changes in productivity, their environmental policy is also transforming. The ports are beginning to take up environmental roles with the port authorities establishing specialised environment units. The multinational terminal operators have also brought along global environmental practices. Additionally, the port authorities are beginning to talk to each other on their shared and common environmental problems. Some of those receiving attention are oil spill, ballast water, ship-generated waste, port waste, and air pollution from carbon emissions.

There have also been a number of regional developments. Inter-governmental actors from regional institutions are beginning to engage with port environmental issues. The Port Management Association of West and Central Africa (PMAWCA) has

integrated environment into its technical committees. The Regional Coordinating Unit (RCU) of the region's Convention for Co-operation in the Protection and Development of the Marine and Coastal Environment for the West, Central and Southern Africa, referred to as the Abidjan Convention²⁵, is also beginning to deal directly with the port authorities. Also, there has been the emergence of Environmental Non-Governmental Organisations (ENGOS), particularly the Ports Environmental Network-Africa (PENAF), working with ports across the region on environmental issues. State actors are therefore no longer dominant initiators of environmental policy in WCA ports.

WCA ports fall under diverse political and decentralisation systems (Table 2) (Barnes-Dabban et al., 2017). The WCA region is itself part of a continent best described as one of 'diversity and contrasting trajectories' (Michailof, 2013). The governments realise the potential of co-operation (Julian, 2012). They have in the last decades developed a variety of state-led regional co-operation arrangements (Sakyi and Opoku, 2014) that subject the ports to multiple actor-multiple level dynamics. However, the disagreement between regional and sub-national (local) environmental policies at the level of the ports can be rather puzzling. Many of the states have several different arrangements, sometimes with conflicting goals (Aryeetey, 2001). Power remain concentrated at national level, leaving both sub-national (local) and regional levels with limited authority (Collier, 2014). Therefore, how non-state actors from multiple levels are involving themselves in environmental policy of WCA ports and transforming environmental governance of the ports require a more adequate understanding.

This study will shed light on the environmental policy and governance processes of WCA ports within the maritime sector. Studies on WCA's marine environment have, for instance, focused on status of biodiversity (Polidoro et al., 2017), sustainable fisheries (Ukwe et al., 2006; Agbeja, 2016), impact of climate change (Donkor and Abe, 2012), valuing the region's large marine ecosystem (Chukwuone et al., 2009) and ecosystem concept for transboundary pollution management (Ukwe and Ibe, 2010). This paper adds to this body of literature with insights in environmental policy interactions between WCA port authorities as sub-national (local) actors, regional inter-governmental actors, and ENGOS working across nation-states beyond institutionalised state-led policy arrangements.

The paper investigates two questions. First, what kind of regional arrangements are emerging for environmental policy-making in WCA and what are the implications

²⁵ Adopted in 1981 as a comprehensive legal framework agreement for marine pollution prevention in WCA (amended in 2008 to include Southern Africa) region through inter-governmental co-operation.

for WCA ports? Second, what factors are enabling or restraining emergent arrangements from transforming environmental governance for WCA ports?

Environmental interactions of four WCA ports – Abidjan, Douala, Lagos, and Tema – with state actors, RCU, PMAWCA, and PENAf as well as their regional setting are used as comparative case studies within a territorial regional geo-political context. Primary data was collected at both port and regional levels through a mix of face-to-face semi-structured in-depth interviews, closed and open-ended questionnaires, and participatory observation over the period of 2010-2015. Key informants were drawn from environmental managers and private port operators of the four selected ports; officials of environment ministries and agencies, and maritime administrations of countries of the selected ports; officials of International Maritime Organization's (IMO) Regional Office in Accra, PMAWCA, and RCU and its National Focal Points (NFPs) for countries of the selected ports. Some empirical data were also gathered through participation in the first West and Central Africa Ports Environment Conference²⁶; the First Panel of Experts' Meeting on Strategic Assessment of Port Environmental Issues Policies and Programs (SAPEIPP)²⁷ in West, Central and Southern Africa; and Abidjan Convention's Ninth and Tenth Conference of Parties²⁸ meetings. Secondary information was obtained through literature review, newsletters, management and operational reports, and relevant working documents of institutions involved.

The next section introduces the conceptual framework for the study, followed by an analysis of regional environmental policy arrangements in WCA and their implications for WCA ports. Subsequently, factors enabling or restraining the transformation of environmental governance for WCA ports by emergent regional environmental arrangements are discussed. Finally, conclusions for the study are drawn.

²⁶ First author in his PENAf role organised this conference in Tema in June 2010.

²⁷ First author in his PENAf role co-organised this meeting with the Regional Coordinating Unit of the Abidjan Convention, held on 5-7 May 2015 in Abidjan.

²⁸ First author's role in PENAf facilitated his participation in the Ninth and Tenth Conference of Parties meetings held in Accra and Pointe Noire in 2011 and 2012 respectively.

5.2 Environmental governance transformation: policy arrangements approach.

Conceptual Framework

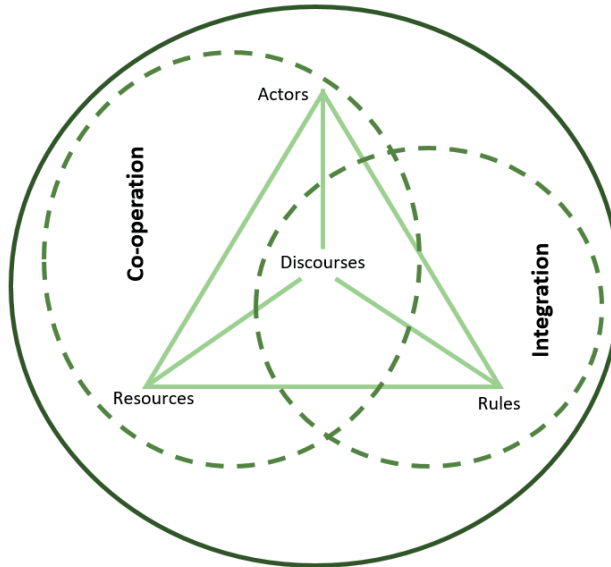


Figure 5.1: Dimensions of policy arrangements in relationship with processes of regional convergence.

Source: Authors' own elaboration

In this study, the concept of policy arrangements is used as the main analytical tool (Van Tatenhove et al., 2000; Arts and Van Tatenhove, 2006) and complemented with the regional convergence concept. A policy arrangement is defined as a temporary stabilisation of the organisation and substance of policy processes. It refers to the way in which a given policy domain is shaped by the interplay of four distinguished analytical dimensions: actors, resources, rules and discourses (Arts and Buizer, 2009). The *actors* dimension relates to key players involved in the policy domain, such as state officials, businesses and organisations, NGOs, etc. from different levels of governance. *Resources* refer to assets as knowledge, finance, mandate, technology, and even social conscience that actors can mobilise in order to achieve desired outcomes. The *rules* dimension consists of mutually agreed regulations, formal procedures and informal routines of interaction within the policy domain. Rules define the way the arrangement should be organised, by way of norms and procedures (Arts and Buizer, 2009). *Discourses* are the collection of ideas, concepts, and narratives that give meaning

to the organisation and substance of policy issues in the policy domain or a certain real world phenomenon (Hajer, 1995; Dryzek, 1997). The sustainability discourse, for instance, brings about the notion of integrating economy, ecology and society in a win-win situation. The dimensions are interrelated with each other. A change in one dimension will result in a change in another.

Policy arrangements can evolve at different levels of governance: sub-national (local), national, and regional (Arts and Van Tatenhove, 2004). The complexities of environmental problems, particularly transboundary ones and the desire of diverse actors to achieve preferred solutions leave environmental policy arrangements susceptible to new linkages with capabilities of being negotiated and transformed (see Beck, 1996). Multiple level policy arrangements can jointly and interdependently co-determine policy outcomes through complex processes of participation and decision-making (see Kohler-Kock and Eising, 1999); Hooghe and Marks, 2001a; Held and McGrew, 2002) in new steering mechanisms (see Van Leeuwen, 2010).

Within a territorial region, interactions among multiple level environmental policy arrangements offer potential for transforming environmental governance in a regional convergence through processes of *co-operation* and *integration*. Using insights from extant literature (Kaiser and Prange, 2002; Varjopuro et al., 2008; Bosch-Sijtsema and Postma, 2009; Lockwood et al., 2010; Kolařík et al., 2014; Soma et al., 2015), regional convergence is defined here as the trend towards multiple actors from multiple levels of governance across multiple nation-states in a territorial region becoming enmeshed in harmonising policies, activities and actions. Co-operation and integration become key. Co-operation refers to organisational aspects of the interaction processes, particularly of actors and their resources while integration refers to the substantive aspects, particularly rules. For both co-operation and integration, discourses, which are also a substantive aspect of policy arrangements, play a crucial role. This is shown in figure 5.1 above. Through co-operation, actors co-determine common policy outcomes in participatory and communicative interaction characterised by mutual exchange of arguments. Actors willingly co-operate when collective goals bring about communal benefits (Bosch-Sijtsema and Postma, 2009). They pool their resources together (see Varjopuro et al., 2008) to mutually interdepend on each other in jointly addressing common problems. These characteristics open the way for integration in which different rules, plans, priorities, and activities of the multiple actors from multiple nation-states and governance levels get amalgamated in a coordinated agreeable procedure (see Lockwood et al., 2010). Through integration, differences in perception and definition of problems become unified with unanimous rule-making (see Kaiser and Prange, 2002; see also Kolařík et al., 2014) as opposed to self-interests and divergent norms. Co-operation and integration make the behaviour of actors and their rules of procedure compatible and

consistent, and structured in a coherent way. They both become supported and guided by shared discourses, which motivate actors' co-operative organisational behaviour and integrative rules of procedure. A shared discourse on governance steering in which no actors impose their preference on others will, for instance, bring about non-hierarchical participatory interaction, communication, and consultation. Similarly, shared discourses on sustainability for instance, will define the character of common problems, causes, possible solutions and norms (see Liefferink, 2006) as well as common vision. Co-operation and integration can therefore be mutually inclusive. Through co-operation, multiple actors come together to interact. Moreover, co-operation can be a strategy necessary for integration (see Soma et al., 2015) of rules that give meaning to their policy pursuits. Deepening of co-operation and integration in a regional convergence as a steering mechanism has the potential of transforming environmental governance in a regional vein.

5.3 Regional environmental policy arrangements in West and Central Africa and implications for the region's ports

The state, through its competent environmental ministries and agencies, has been the pivotal actor for environmental policy in WCA ports. However, with the port authorities having gained greater autonomy from their institutional reforms since year 2000 onwards, two multiple level environmental policy arrangements have become identifiable for them. First, there is a state-based regional environmental policy arrangement among the region's nation-states in which the states agree on environmental policies and regulations at the regional level but differ in implementation at sub-national (local) level of the ports. Second, there is an emerging innovative joint environmental policy-making arrangement among the port authorities, as sub-national actors, from the multiple nation-states and other regional and ENGO actors. Using the conceptual framework for the study, this section analyses interactions in the two environmental policy arrangement interactions. The analysis proceeds, first, with the state-based regional environmental policy-making arrangement and divergent situations in four WCA ports – Abidjan, Douala, Lagos, and Tema - and then, with the emergent innovative joint environmental policy-making arrangement. Additionally, key actors, and their resources, rules, and discourses are specifically analysed. Simultaneously, how the policy arrangements are transforming environmental governance of the ports through co-operation and integration processes are scrutinised.

5.3.1 State-based regional environmental policy arrangement

WCA has the Abidjan Convention as its regional environmental co-operation agreement. Regarding the *actors* dimension of this arrangement, party-states (nation-

states) and the RCU, which is the Convention's secretariat, are the key actors. The nation-states are represented by state actors, primarily state environmental ministries and agencies, referred to as national focal points (NFPs). The RCU is made up of international (regional) civil servants, recruited from the Party-states of the Abidjan Convention, as regional inter-governmental actors. The NFPs and RCU interact under a hierarchical arrangement that has the Conference of Parties as its highest decision making body. The Conference of Parties interacts biennially to discuss, negotiate and adopt policy decisions, regulatory directives, and recommendations or agreements. Co-operation in communicative interaction and mutual exchange of arguments is among limited key actors, being NFPs and RCU.

With the *resources* dimension, the NFPs come from diverse national political systems but together with the RCU, they interdepend on each other's resources. They interdependently use their mandate, knowledge and finance to commonly pursue the Convention's objective of 'taking appropriate measures to prevent, reduce, combat and control pollution of the region's marine environment' (UNEP, 2005a). NFPs, on one hand, have legal mandate embedded in state obligations under international law (see Gray, 2003) to manage and intervene in environmental problems and their effects on their national jurisdictions. The RCU, on another hand, has the mandate of the nation-states to support and strengthen national regulatory measures for implementing the Convention's action plan. In these respects, NFPs are required to provide guidance, technical and scientific advice while the RCU generates knowledge and information on marine pollution issues to inform policy recommendations and adoption. Pollution from shipping is one of the sources listed by the Convention as requiring policy control (UNEP, 1981; UNEP, 2005a). However, most NFPs do not have sufficient shipping and marine environment background to be able to provide the needed technical and scientific advice. This weakens the knowledge resource base of the Convention. Furthermore, achieving the Convention's objective rests on financial resources. Party-states are thus obliged to make financial contributions to the Convention's trust fund to support activities of the Convention's action plan. They have however failed to honour this obligation. In effect, while there is interdependence on resources as mandate and knowledge, pooling of finance remain a mirage. This lack of financial commitment has led to a slow and staggering performance of the convention (UNEP, 2005a) and weakens the regional policy-making arrangement's co-operation.

Turning to the *rules* dimension, NFPs together with the RCU have initiated three new regional policy guidelines and rules of procedure for preventing and dealing with shipping pollution. These relate to ports, being sites where shipping begin and end. First, there has been the revision of the Convention's flagship Protocol, the Protocol Concerning Co-operation in Combating Marine Pollution in Cases of Emergency

(UNEP, 2011a). This is tied to the second, the regional oil spill contingency plan (UNEP, 2011b). Both are regional counterpart of IMO's International Convention on Oil Pollution Preparedness, Response, and Co-operation (OPRC) and were adopted by the Ninth Conference of Parties in the year 2011 in Accra. The third is, the regional strategic action plan on ballast water (IGCC, 2009a), a regional framework for minimizing the transfer of invasive aquatic organisms in line with IMO's International Convention on the Management of Ships' Ballast Water and Sediments (BWMC), which is entered into force on September 8, 2017. The regional strategic action plan was adopted in the year 2009 in Abidjan (IGCC, 2009b) and revised in Lomé in the year 2011 (GCLME, 2011) under the Convention's Guinea Current Large Marine Ecosystem (GCLME) project. It is however yet to receive official adoption by the Convention's Conference of Parties. Developing the new rules have been mostly through RCU's access to financial resources from UNEP and other multilateral partners including Globallast²⁹, IOC/ODINAFRICA³⁰, and GIWACAF³¹ among others. These financial resources have hugely impacted on the rules dimension of the state-based regional environmental policy-making arrangement and boosted its relevance. The Convention requires the nation-states to deal with their environmental problems in an integrated way, with article four obliging them to harmonise (sub)national policies with those of the regional (UNEP, 1981). However, the new rules are not harmonised coherently in the region's ports.

The *discourse* dimension of the regional environmental policy-making arrangement is reflected in the new ideas and concepts connected with and guiding its comprehensive review and revitalisation since year 2000 (UNEP, 2005a; UNEP, 2008; UNEP, 2009). The revitalisation aims at broad-based participation in interactive knowledge exchange and problem-solving to integrate economic growth and social development with environmental action (UNEP, 2005a: 3). This is a shift from state-centrism toward multiple actor approach to achieve sustainable development in line with 'governance steering' and 'sustainability' discourses. The revised Protocol, new regional oil spill contingency plan and regional strategic action plan, also substantiate shared sustainability discourse to protect the sustenance base of the region's marine environment. Operationalising these governance steering and sustainability discourses effectively should impact the actor dimension of the regional environmental policy-making arrangement, by opening it up to actors other than the state and mobilize new resources for the new rules of their game. However,

²⁹ A joint programme between GEF, UNDP, and IMO to assist developing countries reduce transfer of harmful aquatic organisms in ships' ballast water.

³⁰ The Ocean Data and Information Network for Africa project of the Inter-governmental Oceanographic Commission of UNESCO.

³¹ Partnership between IMO and IPIECA (the global oil and gas industry association for environmental and social issues).

participation of non-state actors to give meaning to the steering governance discourse seem yet to be effected.

Put together, as summarised in Table 5.1, the state-based regional environmental policy-making arrangement has limited actors, state and RCU, interacting across limited multiple levels of central government and regional. They are interacting communicatively and interdepending co-operatively on resources as mandate and knowledge. They are, however, not pooling financial resources and therefore weakening their co-operation. Their interactive behaviour and policies seem premised on sustainability and governance steering discourses, but governance steering is yet to be given effect. Also, three new common policies and rules have been developed. These are divergently and less coherently integrated at sub-national (local) level of ports across the nation-states. The divergences are discussed in the next sub-section.

Divergences in environmental policies of West and Central African ports

Approaches to the implementation of mutually agreed regional policies by nation-states of the state-based regional environmental policy arrangement have generally been contingent on national political systems and decentralisation processes. These are mostly top-down, and command-and-control in a 'regulatory governance' discourse (King, 2009) with differences in implementation typified among the four case study ports in this paper, and summarised in Table 5.2.

Abidjan port. The Ministry of Environment, Water and Forests (MinEEF) and its agency, Ivorian Anti-pollution Centre (CIAPOL) are key *actors* together with the port authority and private operators in a centralised and compartmentalised system under Ivory Coast's (Cote d'Ivoire in French) political hybrid (see Ottaway, 2003). In the *resource* dimension, the port authority has finance and mandate that is exercised under state regulatory control mechanisms. Private operators have knowledge, while CIAPOL controls oil spill response equipment and technology. CIAPOL has nine oil pollution vessels fitted with booms, skimmers, pumps, and inflatable storage barges on which the port authority depend. In the *rules* dimension, the monistic approach (see Jackson, 1992) to domesticating external regulations is applicable. Negotiated external regulations, and in this case regional, become implementable without requirement for legislative action after being ratified or acceded to by the state. This means the port authority can, for instance, easily adopt regional environmental policies, yet this is not the case. Adoption and implementation is dependent on state actors. No documented formal regulations for the implementation and enforcement of the regional oil spill contingency plan in the required two tiers of national contingency plan and port level contingency plan, could be sighted during this study. Information however had it that, an old plan was being

updated. CIAPOL also has responsibility for ballast water discharge. With this also, no policy documentation for implementing the regional strategic action plan was available. On *discourses*, state actors follow participatory engagement with the port authority in a seeming governance steering discourse, but regulated and controlled by the state actors. The port authority has since the year 2015 become ISO 9001 and 14001 certified pursuant to sustainability discourse that enable proactive interventions to prevent and mitigate adverse environmental impacts of port activities while enhancing environmental benefits.

Douala port. The Ministry of Environment and Nature Protection (MinENP), Ministry of Transport (MinT), National Ports Authority (NPA) and National Hydrocarbons Company (NHC) are key *actors* together with the port authority and private operators in a hierarchical, overlapping, and compartmentalised system under Cameroon's political hybrid (see Ottaway, 2003). In the *resources* dimension, the Douala port authority has finance and environmental mandate but barely exercises it without formal state control. While the private operators have knowledge, the National Hydrocarbons Company under the Prime Minister's office has mandate for oil spill response with equipment and technology owned by oil companies. In the *rules* dimension, the monistic approach (see Jackson, 1992) applies just like Abidjan port, with external regulations requiring no counterpart domestic regulation after state accession. Here too, the port authority depends on state actors to adopt regional environmental policies relating to them. There is a draft oil spill response policy in line with the regional oil spill contingency plan but no real implementation status. Ballast water, with regard to the regional strategic action plan, is not addressed with any regulation or inspection and yet the port authority is unable to initiate its own. With the *discourse* dimension, MinENP regulates a limited form of participatory engagement with the Douala port authority and private operators in a seemingly governance steering discourse.

Lagos port. The Nigeria Environmental Standards Regulatory and Enforcement Agency (NESREA), National Oil Spill Detection and Response Agency (NOSDRA), and Nigeria Maritime Administration and Safety Agency (NIMASA) are key *actors* together with the port authority and private operators. They operate a decentralised but compartmentalised system under Nigeria's political fragmentation (see also Ottaway, 2003). In the *resources* dimension, there are some interdependencies but not without overlaps and conflicts. NIMASA has mandate for ballast water and oil spill response three nautical miles offshore. NOSDRA has mandate for inland oil spills while the port authority for Lagos has finance and mandate for oil spills within the port enclave, which could be seen as inland. The port authority and state agencies independently control equipment and technology for oil spill but they also depend

on private operators, Clean Nigeria Associates³², for same depending on magnitude of spill. The private operators have knowledge. In the *rules* dimension, the dualistic approach (see also Jackson, 1992) to internalising external regulations is applicable. With this approach, negotiated external rules must necessarily be domesticated through a counterpart national legislation. Adopting regional environmental policies is therefore dependent on state actors. Both the regional oil spill contingency plan and regional strategic action plan have been internalised with regulations and policy guidelines by relevant state actors. The National Oil Spill Detection and Response Agency (NOSDRA) has adopted a national oil spill contingency plan while Lagos port authority has also developed a port-level oil spill response plan, both in line with regional oil spill contingency plan. The Nigeria Maritime Administration and Safety Agency (NIMASA) has also legislated the Nigerian Merchant Shipping (Ballast Water Management) Regulations, 2012, towards the implementation of the regional strategic action plan, with elaborate procedural requirements (Ojesanmi et al., 2016) to guide Lagos port authority. For *discourses*, state actors collaboratively interact with the port authority for Lagos in a form of co-management that follows governance steering discourse while the adoption of the oil spill and ballast water rules follow sustainability discourse. Their collaborative interaction is however seen to be fraught with some form of regulatory control in which state actors impose regulations on environmental behaviour of the port.

Tema port. The Environmental Protection Agency (EPA) and Ghana Maritime Authority (GMA) are key *actors*, also together with the port authority and private operators. They operate in a decentralised and yet inclusive and interactive system under Ghana's political integration (also see Ottaway, 2003). In the *resources* dimension, state actors have mandate but depend on the port authority, which has finance and mandate, for equipment and technological resources in responding to oil spill. Like CIAPOL for Abidjan, the port authority for Tema also has pollution control boat fitted with relevant accessories for oil spill response. The private operators here also have knowledge. In the *rules* dimension, the dualistic approach (see also Jackson, 1992) requiring domestic counterpart legislation for negotiated external regulations apply, as it is for Lagos port. However, the port authority for Tema directly adopts regional environmental agreements ahead of state regulations. Ideally, this situation is what should have prevailed for Abidjan and Douala with monistic rule-making. Like the case of Lagos port, the Environmental Protection Agency has developed a national oil spill contingency plan with the port authority for Tema also having a port-level oil spill contingency plan in line with the regional oil spill contingency plan. However, regarding the regional strategic action plan, the

³² Clean Nigeria Associates (CNA) is a second tier Oil Spill Response Co-operative established by the Nigerian Petroleum Industry.

port authority for Tema adopted it in the year 2011 in the absence of a national ballast water regulatory framework, which was only drafted later in the year 2013 by the Ghana Maritime Authority. The port authority went ahead of the state to initiate port biological surveys to establish a baseline for the characteristics and quality of its waters as required by the regional strategic action plan as a ballast water monitoring programme (GPHA/UoG, 2011). For *discourses*, EPA pursues a co-management approach like state actors do for the Lagos port authority, in a governance steering discourse. However, here, initiatives of the port authority and operators are implicitly tolerated, supported and acknowledged by the EPA. The port authority for Tema, like the case of Abidjan, follows the sustainability discourse in becoming ISO 9001 and 14001 certified in the year 2016. The sustainability discourse also goes for their oil spill response and ballast water discharge rules.

In sum, the common policies and regulations of the state-based regional environmental policy-making arrangement remain at the regional level without intersecting coherently and harmoniously at sub-national level of the ports across the multiple WCA states. Additionally, there is limited pooling of financial resources among the states. Co-operation and integration processes of the regional environmental policy-making arrangement therefore remain weak.

5.3.2 Emergent innovative joint environmental policy-making arrangement

As mentioned earlier, the 2000s have been marked by institutional reform of WCA ports in which the port authorities have gained greater autonomy as public non-state actors. The port authorities have their own budgets and do not rely on state subvention. They are generating revenue from which they pay dividend to the state, their 100% shareholder (see GNA, 2009 for the case of Tema port, Ghana).

In an innovative twist, the different port authorities are beginning to connect directly with regional and ENGO actors in finding ways of jointly addressing common and transboundary environmental problems facing WCA ports. The port authorities are co-operating with their regional management association, PMAWCA, to directly identify themselves with regional inter-governmental actors, the RCU, and the ENGO, PENAF, which has interest in the environmental health of African ports. State actors are participating, but, as only one of the actors, with no dominance. The multiple *actors* involved are creating and upscaling interdependent non-state driven interaction to the regional level in joint environmental policy-making. The goal has been to harmonise approaches through mutual exchange of environmental information and best practice to address common port environmental problems.

Table 5.1: Regional environmental policy arrangements for WCA and its ports

Policy Arrangement	Policy Arrangement Dimensions				Regional Convergence Process	
	Actors	Resources	Rules	Discourses	Co-operation	Integration
State-based Regional Arrangement	NFPs (State)	Mandate	Protocol for co-operation in cases of marine pollution emergency*; Regional Oil Spill Contingency Plan*; Strategic Regional Ballast Water Action Plan;	Governance steering; Sustainability;	Limited actors; mutual communication; Less multiple level coverage; Limited resource pooling;	Less coherence;
	RCU	Mandate; Knowledge; Finance;				
Emergent Innovative Joint Environmental Policy-Making	Port authorities	Mandate; Finance;	Routines of procedure for ballast water, ships' waste, port/municipal waste, and air pollution; PERS Certification;	Governance steering; Sustainability; Transnational governance;	Expanded multiple actors; Communicative non-hierarchical interaction; Expanded multiple level coverage; Resource pooling;	Common action plan harmonising routines of procedure coherently across multiple levels and multiple nation-states;
	PMAWCA	Mandate;				
	RCU	Mandate; Knowledge; Finance;				
	PENaf	Knowledge; Social conscience;				
	NFPs (State)	Mandate;				

*denotes rules of the same policy

Table 5.2: Divergences in environmental policies of WCA ports under state-based regional arrangement

Port (Nation-state)	Political System	Policy Arrangement Dimensions				Implementation of Regional Policies (Regional Convergence)	
		Actors	Resources	Rules	Discourses	Regional Oil Spill Contingency Plan	Strategic Regional Ballast Water Action Plan
Abidjan (Ivory Coast)	Political hybrid; Centralised and compartmentalised;	MinEEF; CIAPOL; PA*; PO**;	Mandate; Knowledge; Technological equipment; Finance;	Undocumented national oil spill plan;	Regulated governance steering; Sustainability;	∅	∅
Douala (Cameroon)	Political hybrid; Hierarchical, and compartmentalised;	MinENP; MinT; NPA; NHC; PA*; PO**;	Mandate; Knowledge; Technological equipment; Finance;	Draft national oil spill plan;	Limited governance steering;	∅	∅
Lagos (Nigeria)	Political fragmentation; Decentralised and compartmentalised	NEASREA; NIMASA; NOSDRA; PA*, PO**;	Mandate; Knowledge; Technological equipment; Finance;	National oil spill plan; Port-level oil spill plan; Ballast water discharge;	Regulated co-management governance steering; Sustainability;	‡	‡
Tema (Ghana)	Political integration Decentralised and inclusive;	EPA; GMA; PA*, PO**;	Mandate; Knowledge; Technological equipment; Finance;	National oil spill plan; Port-level oil spill plan; Ballast water discharge;	Co-management governance Steering; Sustainability;	‡	‡

* denotes port authority;

** denotes private operators; ∅ denotes no real implementation status;

‡ denotes real implementation status

This began with the organisation of the first WCA ports environment conference in Tema in the year 2010. The RCU was then represented by the Interim Guinea Current Commission (IGCC) under the GCLME project³³. Later, the RCU became directly involved through a collaborative arrangement with PENAf to support environmental capacity building of WCA ports (UNEP, 2012). The RCU sought approval for this collaboration from the Abidjan Convention's Ninth and Tenth Conference of Parties meetings held in Accra and Pointe Noire in the years 2011 and 2012 respectively.

With regard to *resources*, the key actors: the port authorities, PMAWCA, RCU, PENAf, and NFPs have unequal access. The port authorities have an environmental mandate for their ports and access to finance but lack environmental knowledge. PMAWCA has a regional mandate to strengthen the relationship between WCA ports and to co-ordinate regional harmonisation (PMAWCA, 1972), but lacks environmental knowledge and finance. Additionally, PMAWCA relies on the port authorities for its budget. The RCU, like PMAWCA, has a regional mandate to support and strengthen national environmental regulatory policies and measures of Abidjan Convention parties (UNEP, 2005). It also has environmental knowledge and access to finance. PENAf has environmental knowledge and acts as social conscience but lacks finance or any formal mandate. The national focal points, as state actors, have national mandate but also for the region as a whole. In organising the 2010 conference in Tema, the multiple actors interdependent on each other's resources. The port authority for Tema hosted the conference, with the IGCC and PENAf providing knowledge. The conference declaration (PENAf, 2010) gave impetus for further action and culminated in the multiple actors organising the first panel of experts' meeting on Strategic Assessment of Port Environmental Issues Policies and Programs (SAPEIPP) in West, Central and Southern Africa, in Abidjan in April 2015 (Green Ports, 2015)³⁴. The multiple actors again co-operatively pooled resources from their multiple levels of governance across multiple states to reduce the variability of actors and behaved like a single body. The port authorities supported with their mandates, while the port authority for Abidjan hosted the event. The RCU provided financial resources and together with PMAWCA supported with their regional mandates. The RCU further provided environmental knowledge together with PENAf. In both the 2010 conference and 2015 SAPEIPP, state actors participated with their national and collective regional mandates. Deliberations were held in a non-hierarchical way. The multiple actors interacted as equitable partners,

³³ A GEF-funded ecosystem-based effort to assist the sixteen countries lying adjacent to West and Central Africa's Guinea Current Ecosystem achieve resource and sustainability. It had components for improving sustainability of fisheries and reducing land and sea-based pollution.

³⁴ <http://www.greenport.com/news101/africa/homing-in-in-environmental-management>
Accessed on 28/03/2017.

refraining from strong and self-interest interventions in an expression of governance steering discourse.

In the *rules* dimension, the multiple actors through mutual exchange of arguments at the 2015 SAPEIPP meeting developed common rules of procedure by which their game should be played. The rules covered ballast water discharge, ship-generated wastes, port/municipal waste, and air pollution, which were agreed on and prioritised as common issues with mutual benefit, if addressed in a coherent manner. They were integrated into an action plan to harmonise routines and procedures for dealing with them within a regional context. Targets in measurable or quantifiable terms were however not set, leaving room for manoeuvre by the individual ports. The multiple actors also proposed the adoption of EcoPort environmental review system (PERS) certification, a port sector specific environmental management standard developed by seaports and for seaports (ESPO/EcoPorts, 2016), as common environmental management system across WCA ports. This decision demonstrates the institutionalisation of sustainability and accompanying rule of certification, emphasising voluntary commitment to systematic identification and management of environmental aspects of port operational activities. This is far different from port policy in WCA before the year 2000, when the idea of environment in the ports resonated basically with sanitation and cleanliness. Furthermore, the multiple actors issued a declaration of intent (UNEP, 2015) calling for a new context of port environmental steering at the regional level in an inter-port environmental co-operation on non-legally binding common procedures and norms, sharing of common database, and harmonised policy guidelines. This sought to facilitate the consolidation of the behaviour of the actors towards a common vision. Finally, each port authority identified a port contact person (PCP) to work closely with their respective NFPs to the Abidjan Convention on the agreed measures. PMAWCA consulted with its council on the declaration at the 2015 PMAWCA council meeting in Abidjan and got it approved (PMAWCA, 2015). PMAWCA council is made up of chief executives of WCA port authorities. These are politically appointed.

Regarding *discourses*, the non-hierarchical interaction of the actors and adoption of an environmental management system come up as expressions of governance steering and sustainability discourses respectively. However, the emergent innovative joint environmental policy-making arrangement, being non-state actors and state actors, together, generating principles, norms, rules and decision-making procedures, beyond legally binding agreements negotiated by statist inter-governmental co-operation, for implementation across multiple jurisdictions expresses transnational governance discourse (see Espach, 2009; cf. Pattberg, 2012).

As summarised in Table 5.1, the innovative non-state driven environmental policy-making arrangement for WCA ports is only emergent, with more diverse actors from

more levels across multiple nation-states. The multiple actors are interacting communicatively and co-operatively pooling their resources as mandate, knowledge and finance to jointly address common environmental problems facing WCA ports. The multiple actors are also integrating their rules and procedures harmoniously and coherently across multiple levels of the multiple nation-states. Their organisation and behaviour is guided by shared governance steering, sustainability and transnational governance discourses.

5.4 Factors influencing the transformation of environmental governance for West and Central African ports?

Globalisation processes have been accompanied by a ‘new politics of pollution’ (Weale, 1992) that has faded conventional statist environmental policy arrangements (Biermann and Dingwerth, 2004; Arts et al., 2006). It has brought about new conceptualisations and practices for ports in finding possible solutions to their environmental problems (Lam and Notteboom, 2014) in new arrangements of public-private actors (Bendell, 2000; Glasbergen et al., 2007). Moreover, the transboundary nature of port environmental problems reduces the effectiveness of conventional statist arrangements alone to address. The empirical analysis of regional environmental policy arrangements in WCA and implications for WCA ports, distinguishes two forms of regionalisation. The first form shows co-operation among state actors from multiple nation-states at the regional level in a state-based regional environmental policy-making arrangement. The second form shows organisation and co-operation among sub-national public non-state actors (port authorities) at the regional level circumventing WCA nation-states in an emergent innovative joint environmental policy-making arrangement. The two forms reflect Hooghe and Marks’ (2001b; 2003) Type I and Type II multiple level governance arrangements. The first form, being a territorial mutually exclusive state actors’ policy arrangement with limited governance levels reflects Type I multiple level governance, while the second form, being a territorially non-tiered flexible policy arrangement with more diverse actors from overlapping governance levels reflects Type II multiple level governance. The emergent Type II innovative joint policy-making arrangement also reflects transnational governance (see Pattberg et al. 2011; Biermann and Pattberg 2012; Duffy, 2013). The emergence can be seen as WCA port authorities moving beyond their Type I state-based environmental policy-making arrangement to generate collective problem solving in an environmental sub-politics fashion. The multiple actors involved in the innovation are trying to overcome WCA’s diverse national political dynamics and divergent port environmental policies as well as the alienation of the port authorities from the state-based Type I regional environmental policy arrangement. Nonetheless, state actors play an important role in WCA’s

environmental policy arrangements. Statist arrangements remain important in transboundary environmental arrangements as they necessitate co-operation among nation-states (Reed and Bruyneel, 2010) represented by state actors. Therefore, for the emergent Type II innovative arrangement to stabilise as a transformative view of environmental governance for WCA ports, agreed measures must resonate with state actors in the Type I state-based environmental policy-making arrangement. This could only be visibly manifest by the extent to which diverse national approaches and rules for environmental policy of WCA ports are shaped or influenced by multiple actors involved in the emergent innovative arrangement. Pursuant to this, two mutually supportive influencing factors: *institutional alignment* and *political communication and consultation*, become visible. These are, however, nuanced by state passivity as a restraining factor.

5.4.1 Institutional alignment

In fulfilling the coherence goal of the emergent innovative joint policy-making arrangement for WCA ports explicitly requires implementation of mutual agreements at sub-national (local) level of the ports across the region's multiple states. Nevertheless, as indicated above, state actors remain key in transboundary environmental protection and policy. They retain the means to facilitate or hinder rule-making and can defect from or fail to comply with measures that go against their interest (Bellamy, 2003). Therefore, the appointment of port contact persons to work closely with respective NFPs of their states to the Abidjan Convention expresses a deliberate move towards getting the goal and action plan of the emergent innovative environmental policy-making arrangement to resonate with state actors. While policies from the state-based regional environmental policy-making arrangement are not harmonised in WCA ports, the move to work closely together becomes substantial evidence of actors in the emergent innovative joint policy-making arrangement getting to align with and influence how institutions of their individual states organise port environmental policy. The institutional alignment has three potential aspects that inure to the transformation of environmental governance of WCA ports. One is that, it establishes the emergent innovative policy-making arrangement as a site of port environmental policy innovation and change, with the port contact persons as new and continued source of national attention for port environment. Another is that, it can re-orientate the handling of port environmental policy from individual state-centeredness towards a regional perspective. Port contact persons will be enabled to inform and input into port environmental policy in their individual states by expressing collective positions of the innovative policy-making arrangement. The third is that, it has the propensity of encouraging the expansion of the state-based environmental policy-making arrangement with new

capacity and dedicated focus for ports environment that can be coordinated coherently in a regional environmental convergence.

These are not to suggest that state actors will abandon national devotion for the goals of the emergent innovative joint environmental policy-making arrangement. Rather, all actors (state and non-state) will become closely linked with realities of social transformation from the changing relationship between nature and society, and specifically, ports and the environment, in an era of globalisation. This will strengthen the role of state actors and statist environmental policy-making arrangements while making place for a new role for the emergent innovative arrangement as a steering mechanism for regional environmental convergence. Environmental governance of WCA ports could then be transformed in the 'local (subnational) going regional and regional acceding to the local (sub-national)'.

5.4.2 Political communication and consultation

Political approval for the declaration at the 2015 SAPEIPP meeting in Abidjan was fundamental if the innovative pursuits of the multiple actors was to become a reality. In this regard, PMAWCA Council, made of up national political actors, was consulted. This kind of communication and consultation with national political actors is also evident in RCU's consultation with NFPs at Abidjan Convention's Ninth and Tenth Conference of Parties meetings for approval before adopting direct dealings with port authorities through PENAf. The communications and consultations with national political actors and their subsequent approval alludes to their buy-in and acceptance of the emergent innovative environmental policy-making arrangement as a new regional environmental governance steering mechanism for WCA ports. It lends credence to the defining of environment as a new issue-domain for WCA ports with the assurance of political support to foster its coherent environmental reform of the ports progress within the context of a territorial region. Little progress could be possibly made by the multiple actors involved in the emergent innovative joint environmental policy-making arrangement, if they unilaterally pursue their measures and goals in defiance of existing statist environmental policies and arrangements. Communication and consultation with political actors therefore averts the 'catching by surprise' of relevant statist environmental policy actors, in which case they could block the progress of joint actions of the emergent policy arrangement. Under the circumstance, political actors are enabled to re-orient themselves in view of the changing dynamics. The political communication and consultation thus engenders trust in creating conducive conditions for forging ahead with the innovative environmental policy-making arrangement as an emergent environmental steering mechanism for transforming environmental governance of WCA ports in a regional environmental convergence.

5.4.3 State passivity

The changing political structure of WCA ports, from predominantly state controlled to public-private partnership, has certainly left the port authorities with greater autonomy. They are gradually strengthening their position on environmental policy-making in relation to the state. However direct dealings with regional inter-governmental and ENGO actors undermine state authority and conventional political arrangements. The innovative joint environmental policy-making arrangement is emerging with state actors' participation and side-by-side the state-based regional environmental policy-making arrangement. States will remain pivotal in national and supra-national environmental politics. The challenge, however, are drawbacks from passive statist approaches to environmental policy in WCA ports. Multiple actors in the emergent innovative policy arrangement are seen to having to essentially penetrate statist environmental politics through institutional alignment and political communication and consultation as discussed above, to become operative and effective towards coherence. Nevertheless, WCA's differing political and decentralisation systems remain fundamental to the success of this penetration. WCA states, being parties to the Abidjan Convention and having together developed regional oil spill contingency plan and regional strategic action plan are expressive of regional co-operation. However, their commitment to policy integration is rather passive and sometimes paradoxical. On one hand, the port authority for Tema for instance, falling under dualistic rule-making that needs domestication of external regulations by the state, voluntarily and independently adopted the regional strategic action plan in the absence of national regulation. On the other hand, Abidjan and Douala ports falling under monistic rule-making, not necessarily requiring domestication of external regulations are both yet to have regional oil spill plan and strategic action plan implemented in the manner required. In effect, state preference relating to national policy styles can enhance or constrain coherence and homogenisation of environmental policy in a regional environmental convergence for WCA ports.

WCA state actors are hardly exploiting their resources. Multiple actors and multiple level interactions on port environmental policy in their state-based regional environmental policy-making arrangement are limited and policies are not systematically coordinated and harmonised coherently by them at sub-national (local) level of the ports. This brings to question, how the 'hard shell with soft belly' (Desai, 2010) character of inter-governmental policies having no binding commitments can create long-term success of regional environmental co-operation (Haas, 1991; cf. Knecht, 1994). States have the political latitude to follow any procedure and approach to realise set objectives. WCA state actors clearly have their own interests that could pre-supposedly include maximising their autonomous control over port

environmental policy-making. Their undeniable legitimacy and pivotal place in the region's environmental politics make them a 'linking pin' in shaping environmental policy for WCA ports. The emergent innovative environmental policy-making arrangement for WCA ports is challenging existing statist arrangements and yet, the statist arrangements cannot be escaped. The emergence reverses the passivity of statist regional environmental policy arrangements in pushing regional environmental convergence through deepened co-operation and integration processes (see Grande, 2001; Hooghe and Marks, 2001a; Kolařík et al, 2014). Actors other than the state are rather beginning to influence regional environmental convergence, with the state playing a role. The passivity of state actors can therefore potentially restrain the emergent innovative joint policy-making arrangement from transforming environmental governance of WCA ports in a regional environmental convergence.

5.5 Conclusion

This study has complemented the policy arrangements concept with regional convergence concept in a conceptualised analytical framework for understanding regional environmental policy arrangements in WCA Africa and their implications for environmental performance in the region's ports. How the policy arrangements are transforming environmental governance for WCA ports in a regional convergence have been scrutinised. Factors potentially enabling and restraining the transformation have been identified. Four WCA ports – Abidjan, Douala, Lagos and Tema – and their regional setting were used as cases. Two forms of regional environmental policy arrangements – a conventional state-based regional policy-making arrangement and an emergent innovative joint policy-making arrangement, with state actors' participation have been distinguished. The two forms of environmental policy arrangements are reminiscent of Hooghe and Marks' (2001b; 2003) Type I and Type II multiple level governance and can thus be said to be occurring in the regionalisation of environmental governance of WCA ports in a co-existence.

The state-based Type I arrangement has limited multiple actors interacting across limited levels that do not transcend sub-national (local) level of the multiple nation-states. Common regional environmental policies developed by the arrangement and relating to ports do not reflect coherently at the sub-national (local) level of the region's ports. The ports have divergent environmental policies. This leaves the state-based arrangement's co-operation and integration process short of pushing towards regional convergence. The innovative joint Type II arrangement has thus emerged with port authorities from sub-national (local) level and their regional association (PMAWCA) connecting directly with regional inter-governmental and ENGO

actors. This is happening in a transnational form of governance driven by non-state actors, with state actors participating. Interactions in the emergent innovative joint arrangement spans over enlarged multiple actors from more multiple levels across WCAs multiple states. Co-operation and integration processes are more pronounced with resource pooling and harmonised common routines of procedure toward coherent application across the region's ports.

The emergent innovative joint environmental policy-making arrangement signals a new environmental governance steering mechanism with promise for transforming environmental governance of WCA ports in a regional environmental convergence. Actors involved seek to achieve this transformation by penetrating statist arrangements with their coherence and harmonising goal. Their two mutually supportive factors, institutional alignment and communication and consultation with political actors, are influencing this. Nonetheless, these are nuanced by the passivity of state actors, which has the potential of constraining the environmental governance transformation for WCA ports.

While it may be too early to conclude on the emergent joint environmental policy-making innovation, it is undeniable that a non-institutional and sub-systemic interaction either next to or as an extension of existing conventional statist environmental policy arrangements has taken place for WCA ports. The emergent innovation is therefore more likely to continue and to open up environmental policy in WCA towards collaborative governance steering than ever before. It can therefore be safely concluded that, non-state actors, when given flexible manoeuvring, can be innovative in overcoming diverse statist political dynamics in dealing coherently with transboundary environmental issues, but without avoiding state actors. To this point, this study shows that interactions among broader multiple actors in multiple level policy arrangements across multiple nation-states within a territorial region can transform environmental governance in a regional environmental convergence.

Chapter 6. Conclusion

6.1 Introduction

WCA ports face environmental threats from increasing vessel and cargo throughput. The port authorities, however, lack capacity to address the threats. WCA states have different environmental institutional arrangements, dependent on their diverse national political systems, but a national state-led command-and-control mode of environmental steering prevails.

The situation is beginning to change. Port environmental politics in WCA is becoming involved in interdependent global networks. Also, cross-border environmental co-operation in the region is emerging among the ports. These global and regional linkages increasingly influence the environmental state of affairs within and among the ports. Environmental globalisation, in which environmental protection regulations and practices are coordinated internationally, is laying down environmental regulatory demands that the ports are expected to meet. The multinational terminal operators in WCA ports are bringing along with them global environmental practices and approaches. These are not only influencing environmental change in the ports but also interconnecting them from their different local places of proximity with common environmental practices and approaches.

To overcome challenges in the implementation of the Abidjan Convention, which translates international marine environmental agreements including those on shipping into regional regulations and policies, the Convention's Regional Coordinating Unit (RCU) has shifted into direct dealings with the region's ports. The resulting interdependence among the actors involved creates a network of regional environmental connectedness for WCA ports.

Such patterns of environmental globalisation and regional environmental interconnectedness have been observed and documented in research for developed ports and their regions, for instance within the EU (see ESPO, 1994; 2001). How these patterns evidence themselves in WCA and how they influence port environmental reform has hardly been investigated until now. The interest of this thesis is therefore to understand the interactive dynamics and interplay between states, port authorities, private economic actors, societal actors, as well as regional and global institutions in bringing about environmental governance transformation in WCA ports. Pursuant to a need for understanding the interactive dynamics and interplay, five WCA ports – Abidjan, Douala, Lagos, Monrovia, and Tema – were investigated. The ports have all undergone institutional restructuring with private sector participation and are at various stages of environmental reform.

This final chapter combines and synthesises the findings on the institutional dynamics within which the environmental reform of WCA ports is developing in answering the central research question of this thesis:

‘How has environmental governance of West and Central African ports changed following the interplay between global, regional, national, and sub-national (local) governance levels and what are the enabling and constraining conditions for effective port environmental governance in West and Central Africa?’

This chapter also answers the four research sub-questions:

1. How is environmental reform organised and institutionalised at the port level (local) in West and Central African states?
2. How and to what extent does the institutional setting of West and Central African states affect the way their ports address environmental problems?
3. What has been the role and relevance of regional institutions in shaping environmental governance of West and Central African ports?
4. How has the interplay of sub-national, national and regional level policies transformed the environmental governance of West and Central African ports?

To guide the research, key elements of different sets of theoretical perspectives relating to environmental reform and regulatory implementation were appropriated as analytical lenses to understand the transformation process for environmental policy-making and governance in WCA ports. The environmental arrangements, roles, rules and practices occur across multiple levels of governance. Therefore, the research was operationalised over four empirical situational contexts for analysis: sub-national (local), national, regional, and the interplay across them. The analysis was done with due reference to the global interconnectedness of each of the four situational contexts. In the sub-national (local) context, how port authorities are reforming environmentally within the purview of their greater autonomy from the state was analysed using sense-making and institutionalisation perspectives. In the national context, how state environmental institutions are enabling port environmental reform was analysed, drawing upon ecological modernisation perspectives. The regional context analysis focused on the influence of regional bureaucracies on port environmental reform. Here, perspectives on international bureaucracies, domestic regulatory-politics, and transnational governance were applied. Finally, the interplay across them was analysed by concentrating on the influence of multiple level interactive dynamics regarding the environmental governance of the ports, using policy arrangements and convergence perspectives.

This chapter discusses findings from the analyses of how environmental governance for WCA ports is transforming and concludes with recommendations and a future outlook for research on environmental governance for ports.

6.2 Port environmental governance transformation

This section takes stock of the four empirical chapters of this thesis to answer the research sub-questions. Looking back at the cases investigated, it becomes discernible that the approach of complementing different theoretical perspectives has been useful for identifying and analysing key actors and institutions across multiple levels in multiple states connected with port environmental policy-making; their interactions; and emergent dynamics that are transforming environmental governance in WCA ports. The perspectives have particularly been important in providing a better understanding of new and changing forms of environmental governance processes in WCA ports in the 21st century world in which social, economic, ecological, and political dimensions of function through networks. Findings are systematically summarised and analysed in view of each of the research sub-questions in the subsequent sub-sections.

6.2.1 Port-level (sub-national) environmental change

Research sub-question 1: How is environmental reform organised and institutionalised at the port level (local) in West and Central African states?

The globalising concept of sustainability is compelling WCA ports, like all others across the globe, to balance their development and operations with environmental demands. For ports globally, the concept has culminated in a phenomenon labelled ‘green port’. It has meant that ports have to pay close environmental attention, which, to varying extents, is beginning to happen and increasingly being asserted in all the five ports studied. Environmental consciousness and awareness has become a policy for these ports. The interpretation of environment for WCA ports has shifted from port sanitation and landscape beauty to include the overall human-induced impacts on air, land, water, biodiversity, and human health in all aspects of port operational activities. The processes for establishing and making environmental roles visible and routinized in the ports however are varied and nuanced. While in some ports, like Abidjan, these roles and responsibilities were established by state directive, in other ports, like Tema, these were established by the port authority (chapter three). Even when established by port authorities, roles and responsibilities were ad-hoc for some, like Douala, and more formalised for others, like Freeport of Monrovia, Lagos, and Tema. Albeit, environmental protection has become institutionalised with specialised units in one form or the other in WCA ports.

There are differences in the institutional setting of the different WCA ports, as seen in chapters two and three. This, matched against the willingness of the port authorities to take up environmental roles, opens up diverse sets of approaches to

organising the routinisation and institutionalisation of environment as part of port planning and policy-making. Put together, two sets of interlinked organisational and institutionalisation approaches become explicitly identifiable. These are, a flexible organisational process and social interaction.

In a flexible organisational process, WCA ports are modifying their organisational procedures flexibly to respond to their environmental circumstances. The port authorities, as organisations embedded in national institutional structures, are adjusting flexibly to their contextual local circumstances to adapt practices that generate actual solutions for specific environmental problems. Port authorities in Abidjan and Douala (chapter three) have less orderly and well-defined environmental relationship and boundaries between them, their private economic actors, and state actors. They are shaping their organisational response to the environment by confronting incompatibilities between their status and role in port environmental policy and the role of the state as central political actor. The port authorities are using ad-hoc and interpersonal collaborative interaction as favourable administrative processes for the pursuit of their environmental interest and objective. They interact with other port actors using personal contacts or committee meetings. This is a local adaptation that subtly fragments the statist order without challenging it directly. For port authorities with defined environmental relationships and roles, such as Lagos, Freeport of Monrovia, and Tema (chapters two and three), they are combining bottom-up approaches with their predominant top-down organisational procedure. In the absence of a masterplan for Freeport of Monrovia going green, management flexibly allowed employees of the new environment department, who innovatively constituted themselves into sense-agents, to catalyse and co-ordinate a sense-making process to give meaning to the port's environmental reform in a bottom-up process (chapter two). The port authorities for Lagos, Tema and Freeport of Monrovia are orienting their process toward a mix of top-down and bottom-up approaches. They co-opt actors horizontally and vertically to overcome top-down failings (such as discussed by Fraser et al., 2006). The port authority for Freeport of Monrovia initiated an environmental reform without knowing exactly how to proceed, but in a horizontal-vertical mix, that brought together state actors, port authority staff and stakeholders, a common direction forward was charted. The port authority for Lagos (chapter three) also takes environmental policies and ideas vertically down from its multinational terminal operator, which it supervises, to adopt it horizontally as official policies for other port users.

Connected with flexible organisation is social interaction, in which the port authorities together with their varying stakeholders within the port community interrelate mutually and inclusively on their environmental issues and approaches. This is organised in different ways among the different ports in a participatory

approach. While it is less formal with limited participation between port authorities and economic actors in ports like Abidjan and Douala (chapter three), it is formal and intensive with broader participation including state and societal actors in ports like Freeport of Monrovia and Tema (chapters two and three). Freeport of Monrovia's environmental reform, for instance, began in an 'unknown unknown' (chapter two) but, through the port authority's organisational culture with values for dialogue and consultation, they pursued early stakeholder engagement in open internal and external communication for shared meaning and interpretation. Through social interaction, environmental reform of WCA ports is being organised through collective and shared action. The reform can only flourish to the extent that collective decision-making is made efficient and strengthened by the port authorities. The port authorities are adjusting the routinisation of environmental protection in their ports while incorporating new knowledge.

In organising and institutionalising environmental reform at the port level in WCA, the different port authorities are opening themselves up in pragmatic ways to relevant actors to shape their reform. They are doing this with due cognisance to their local institutional context. They are combining their organisational circumstances with varying actors discursively to affect the kinds and scope of practical actions needed for institutionalising environmental reform of the ports. By their actions, WCA port authorities and their stakeholders are beginning to act independently to make their own environmental decisions. They are thus creating new agency (mostly ad-hoc) in taking up new environmental roles. They are doing this through collective and shared action in an emergent sub-national (local) architecture (mostly ad-hoc) for decision-making procedures and organisational arrangements to address their environmental problems. Social interactiveness, in which the port authorities interact inclusively with stakeholders, serves as the mechanism for furthering their objective of routinizing environment in an institutionalised port environmental reform. There is an influence of global concepts and ideas, also through multinational terminal operators, on the emergent interactive dynamics of environmental change at the sub-national (local) level of the different ports. Nevertheless, this is in no way homogeneous. The port authorities have certainly responded differently to the global influence with due regard to their local and situational institutional context.

6.2.2 Port environmental reform in a national context

Research sub-question 2: How and to what extent does the institutional setting of West and Central African states affect the way their ports address environmental problems?

The institutional restructuring of WCA ports from the year 2000 onward was initiated in the individual ports by their respective governments. This was induced by globalising economic liberalisation. Conduct of policy within the states of the ports has mostly been reactive command-and-control and less participatory. State institutions are structured on national political systems with predominantly centralised approaches (chapter three). State actors therefore dominate policy-making. Additionally, public policy is more sectoral than integrated. These centralised national politico-administrative systems and sectoral approaches characterised the port institutional reform. Environmental reform of the ports emerged incidentally rather than planned. The port authorities becoming landlord following their institutional restructuring and therefore having to take environmental responsibility of the ports, including the implementation of international environmental regulations (chapters two and three), have influenced the environmental reform of the ports. As seen in chapter three (of this thesis), multinational terminal operators have had a large influence in bringing environmental approaches and behaviour into the ports.

Comparative analysis of the four ports in chapter three of this thesis reveals that their common centralised national policy-making character comes on a continuum of highly centralised and hierarchical to less centralised, with nuanced forms of decentralisation and collaborative approaches in between the continuum. These could be traced to the historical trajectories of colonial legacies of the states, categorising the ports under two primary classifications of French and British model ports (Table 3.3). Institutional arrangements for the two classifications and models differ and influence how environmental problems of the ports are being addressed. They further determine the extent to which the ports are reforming environmentally. The ports with high centralisation have limited to moderate environmental reform, while the more decentralised ones have fragmented to progressive environmental reform. The relationship between decentralised political systems and environmental reform of WCA ports is also evidenced in the case of the institutionalisation of environmental reform in the Freeport of Monrovia in chapter two of this thesis. Liberia is historically tied to USA and has its national political system structured after USA's democracy and associated decentralisation. The port authority for Freeport of Monrovia, relying on its greater autonomy from the state and arising out of its state-led institutional reform, formally introduced port environmental reform.

In all of the five ports studied, it is seen that the ports remain national assets owned by the state despite increasing private sector participation. State environmental institutions remain responsible for environmental protection but environmental reform of the ports, except for Abidjan, is not initiated by them. The port authorities as new public non-state actors are creating new agency – mostly informal and ad-hoc – in taking up new environmental roles at the sub-national (local) level of the ports.

They are doing this through varying forms of collaborative environmental arrangements with port economic actors other than existing state institutional arrangements for port environmental policy. The varying collaborative arrangements are emerging with informal norms and rule-making in ad-hoc architectures that exist side-by-side and expand formal national arrangements to address port environmental problems. In less centralised national political systems, as those for Freeport of Monrovia and Tema (chapters two and three) for instance, state actors participate in these collaborations just as one of the actors. Collaborations in all of the newly emerging arrangements are based on mutual interactiveness. The actors deliberate non-hierarchically and communicate mutually on approaches and solutions to deal with environmental problems of the ports.

Within the national context of WCA ports, state actors are not interfering with the new layer of ad-hoc non-state-led agency and architecture facilitated by mutual interactiveness that is emerging within port environmental policy-making. Even in states with hierarchical centralised political systems, as in the case of Douala port for instance, the port authority is able to utilise interpersonal relations without any hinder by the state (chapter three). This new layer is driving and enhancing opportunities for environmental improvements and transformation of WCA ports. The emergence of the new layer can be understood within the context of Castells' (2000) interpretation of a network society, in which he attributes societal transformations to a new layer powered by global networks and flows of private actors, capital, environmental knowledge, and technology. This is exactly the case for WCA ports. The new layer has influence through flows of international environmental regulations and actions from multinational operators who have brought environmental knowledge, technology and capital to the ports. However, the new layer has far from homogenised environmental reform of the ports as the ports show different extents of environmental reform progress. The extent of environmental reform penetration in the ports is dependent on these global flows and networks, national institutional context and the local influence of the ports.

Institutional settings for WCA ports are therefore beginning to experience simultaneously ad-hoc forms of sub-national organisational arrangements and processes for addressing environmental problems of the ports. Nonetheless, the extent of environmental reform is being mediated by the predominantly centralised national institutional structures. That means, notwithstanding the willingness of WCA port authorities and global private economic actors to address their environmental problems, national institutional underpinnings determine successful environmental reform progress.

6.2.3 Regional influence on port environmental reform

Research sub-question 3: What has been the role and relevance of regional institutions in shaping environmental governance of West and Central African ports?

The Abidjan Convention combines multilateral environmental agreements (MEAs) with regional circumstances to create relevant regional environmental regulations and policies including those relating to ports and shipping. The regional regulations and policies emerge out of consensus and the political will of WCA states, as Parties, to go forward on the issues involved. The Convention has a regulatory effect on the behaviour of WCA states and yet, as observed by Desai (2010) regarding MEA implementation, implementation of Abidjan Convention's regional regulations and policies is influenced by how WCA states balance their national sovereignty and international (regional) dependence. The Abidjan Convention was triggered by dissatisfaction of some WCA states on the inadequacy of existing agreements to address their specific needs. UNEP thereto initiated it as one of its need-based response to regional seas conventions in 1981. As observed in chapters four and five of this thesis, WCA states have taken over formal inter-governmental negotiations with the Regional Co-ordinating Unit (RCU) functioning through UNEP as its institutionalised secretariat and bureaucracy. The RCU in this way supports WCA states with capacity to implement the Convention. Its competence is however circumscribed by instruments setting up the Convention. It has no decision-making mandate except as mandated by the Conference of Parties (CoP), in a similar way as for other international bureaucracies. As policy decisions are made by the states, the RCU mainly influences policies through its internal logic and dynamics.

In a globalising world with increasing participation in network interdependence (Castells, 2000; Keohane and Nye, 2000), most WCA states connect weakly to any policy implementation that transcends them. Even when it comes to implementation of their own regional environmental policies, they fall into the 'nationality trap', clinging to state sovereignty, with ties to their individual states becoming a bind. It is expected that the states tailor their national environmental policies towards implementing regional environmental policies they have together negotiated. However, this is barely the case. They show various implementation gaps guided by their own national political logic and dynamics. The RCU's use of its internal logic and dynamics have not been sufficient for effective implementation of the Abidjan Convention. In overcoming this, the RCU has since 2011 adapted co-operation with relevant non-state actors on the issue area of shipping pollution prevention (chapters

four and five). The RCU is directly collaborating interactively from the regional level in an ad-hoc triad with WCA port authorities at their sub-national (local) level together with the regional ports association and the cross-border ENGO, PENAf. This has been to strengthen implementation of the Abidjan Convention.

The new role taken up by the RCU, in collaborating with the port authorities and their regional association as well as PENAf, is influencing the transformation of environmental policy and governance within WCA ports. It has introduced a transnational environmental governance approach (see Gulbrandsen, 2010; Bulkeley, 2005) for WCA ports in which non-state actors have become involved in port environmental policy in ways beyond the states and transcending inter-governmental negotiations and mechanisms. This is a shift from port environmental policy being within the state container. Transnational governance activities are embedded in geopolitical structures and envelope multiple interacting actors and institutions (Djelic and Sahlin-Anderson, 2006). It therefore gives cognisance to territorial (regional) non-contiguous space as well as national sovereignty. The RCU could not have wished the states away, but it went beyond the conventional inter-governmental interactions to make state actors only one of the actors among the region's non-state actors connected with ports in a new ad-hoc regional constellation. The constellation constitutes a new form of regional agency that interacts jointly and deliberates non-hierarchically and communicatively on environmental policy for WCA ports, as shown in chapters four and five of this thesis. What is more, the constellation also constitutes a new regional architecture for adapting less formalised ways of implementing the region's environmental policies relating to shipping pollution prevention.

From the foregoing, the RCU is shaping environmental governance of WCA ports without necessarily coinciding with existing national environmental policies and actors. It is bringing about a transnational rule-setting for port environmental policy and governance in WCA and promoting regional port environmental co-operation. Unlike transnational governance for cities and climate change (Betsill and Bulkeley, 2006), which is led by local governments, and forest governance under the Forest Stewardship Council (Gulbrandsen, 2010), which is led by private actors, the emergent transnational arena for WCA's port environmental governance is led by a regional (international) bureaucracy. In influencing shipping pollution prevention in WCA ports, the RCU enters into an ad-hoc triad with states and ports. This shows that in this area, international (regional) bureaucracies can be said to have more influence and ability for implementation of international environmental agreements than suggested in the literature (see Biermann and Siebenhüner, 2009). The use of only internal logic of international bureaucracies, as done in the literature (Biermann and Siebenhüner, 2009), to analyse the RCU's influence would have limited and

obscured its role and relevance in the processes transforming environmental governance for WCA ports. Going beyond its conventional role in inter-governmental co-operation, the RCU is simultaneously carving new relevance in constructing a new political space with broader state-non-state actors that is shaping environmental governance for WCA ports. In doing so, it strengthens implementation of the Abidjan Convention. It is bringing on board non-state actors – port authorities and civil society (PENAF) – who, until now, have been excluded regardless of their having potential for strengthening implementation of regional environmental policies.

This discussion highlights the potential of regional institutions through transnational governance approaches to shape environmental policy-making arrangements for enhancing transboundary environmental solutions. The findings, however, also highlight the embeddedness of state institutional locus and logic in shaping environmental governance transformations even if they do not initiate the transformations.

6.2.4 Multiple level interplay in port environmental policy-making

Research sub-question 4: How has the interplay of sub-national, national and regional level policies transformed the environmental governance of West and Central African ports?

There is an imminent shift in environmental policy-making in WCA ports away from the focus and locus of prevalent hierarchical statist regulatory forms. Ad-hoc and less formalised forms of governance have already become manifest at different levels of governance – sub-national (local), national, and regional – as shown in chapters two, three and four of this thesis. In these forms of governance, policy interactions and interconnectedness are changing within, between and beyond WCA states and port-related actors with a resulting effect on environmental policy-making practices and arrangements. The newly emerging practices and arrangements resonate, in many respects, with contemporary forms of global governance reflected in concepts such as network governance, multiple level governance, deliberative governance, and collaborative governance (Jessop, 2004; Ansell and Gash, 2008; Papadopoulos, 2010; Bäckstrand et al., 2010).

As was described in the previous sections, non-state actors are beginning to gain relevance and are interconnecting and interacting with state actors at multiple levels of governance and across the multiple states. Their interplay has brought about an emergent joint regional environmental interaction, which is not structured by existing

statist arrangements, and is developing new forms of co-operation on resources, rules and discourses to govern common environmental problems facing WCA ports, including joint policy-making through integration of rules and shared discourses. This collaborative integration can be described in terms of new ad-hoc agency and a new ad-hoc governance architecture. The interplay of multiple actors across multiple levels and states is co-ordinated from the regional level towards a regional convergence with coherent and harmonised environmental policy across the ports. The regional co-ordinated interaction is being pursued through multiple-actor interactiveness using mutual non-hierarchical dialogue and communication. The approach has potential for giving the ad-hoc agency and architecture relevance and acceptability as discussed in chapter five of this thesis. The emergence of regional convergence brings to bear the interest and preparedness of sub-national and non-state actors to overcome cross-national place-based variation and to interconnect with other levels of governance and across other jurisdictions. It does not seek to replace existing conventional statist regulatory institutions and approaches, but rather complement them. Actually, it could only begin through approval by the Abidjan Convention's Ninth Conference of Parties meeting, as discussed in chapter four of this thesis. The tendency of it being inhibited and scuttled by the states, should it not resonate with them, is overcome by the mutual inclusiveness between state and non-state actors. Institutional alignment and political communication are used as an interactive approach for the mutual inclusiveness.

The multiple level interplay can be understood as transforming environmental governance of WCA ports in environmental regionalisation. Environmental regionalisation is used here for WCA ports to mean the mutual effect of environmental interdependence among the multiple actors and ports from multiple levels and states within their geographic regional territorial confine. The interplay illustrates a new layer at the regional interface for environmental governance in WCA ports in a shift from forms of 'government' for the individual ports to 'governance' among the ports in a regional mode. This is different from the existing statist environmental policy arrangements, which happen either differently within national and sub-national levels of states and ports or among a single linkage of state actors from multiple states. It amply testifies that increasing environmental momentum offers potential opportunity for subverting state dominance in policy-making. While, as already indicated in chapter five of this thesis, it might be early to pass judgement on the success or otherwise of the emergence, it cannot be ignored that environmental governance for WCA ports is transforming in ways that cannot be understood only nationally without recourse to institutional and actor interactions at multiple levels of governance.

6.3 Synthesis of findings

The comparative analysis of the five ports in this thesis clearly shows that the role of the state in environmental policy-making and governance in WCA ports is changing. Non-state actors are gaining relevance. New state-non-state collaborations are redefining environmental policies and practices for the ports and shifting them from being state-focused. This process is bringing about new instruments of voluntary, collaborative and deliberative environmental policy-making and governance, next to existing command-and-control regulatory approaches.

WCA ports have characteristically become environmentally, economically and politically networked. They are functioning in a networked society and are not the kind of ports they are, just because of their local image and roles but also because they are nodal points within regional and global networks. Their environmental concerns and solutions are thus no longer defined only by their contiguous local places but also by a new layer of non-contiguous regional space that defines environmental problems and approaches commonly among them. The stage is set for innovative environmental interactiveness within and among the ports, and between state and non-state actors from different governance levels across the different WCA states. Environmental governance is not in the hands of state actors alone nor in the hands of non-state actors alone. Findings from this thesis suggest that this multiple actor-multiple level interaction emerges as a suitable alternative in the face of state implementation deficit and incoherence to drive port environmental improvements in WCA. Significant to this is the emergence of a new environmental steering in a new regional port environmental co-operation, with potential for contributing to improving environmental quality and sustainability of WCA ports. Nonetheless, the states, with differing national institutional contexts, remain prominent in the emergent environmental governance transformation in WCA ports. The state does not only remain key, but also constitutes a potential constraint to the transformation progress if it does not handle the transformation strategically.

6.3.1 Key institutional aspects

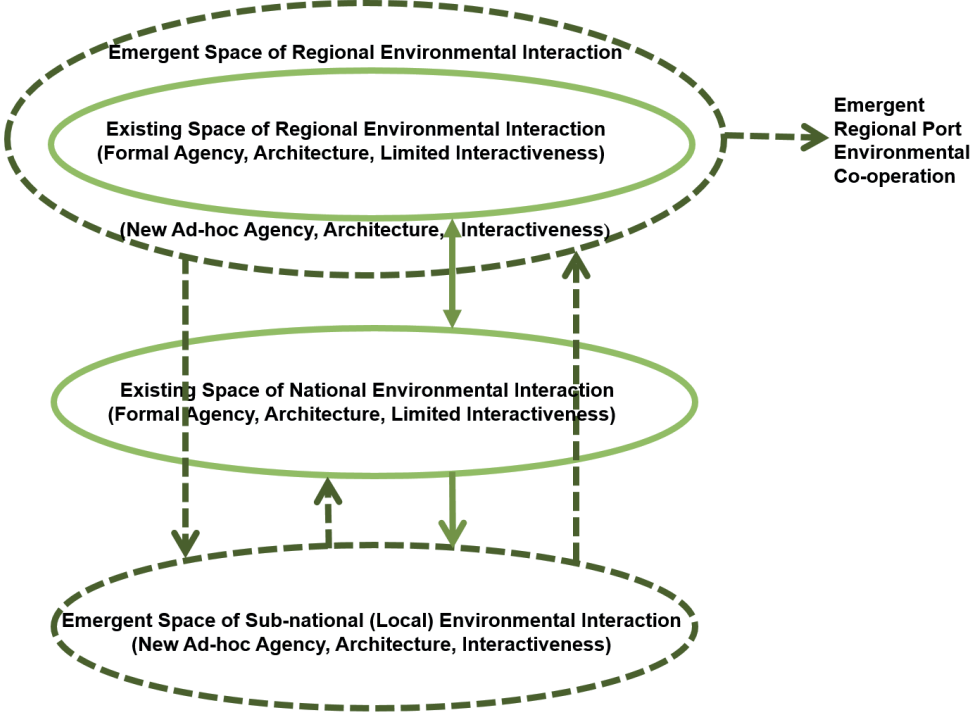


Figure 6.1: Spaces and aspects of interactive interplay transforming environmental governance for WCA ports (Solid arrowed lines and ovals denote formal and institutionalised interactions and spaces respectively; Dashed arrowed lines and ovals denote informal and ad-hoc interactions and spaces respectively).

Overarching the key findings enumerated above are three mutually inclusive institutional aspects – **agency, architecture, and interactiveness** – that interplay across three spaces of environmental interaction – **sub-national (local), national, and regional**. These institutional aspects refer to the structures and mechanisms of co-operation governing the behaviour of the multiple actors involved in port environmental policy in WCA. They help in clarifying the transformation of environmental governance for WCA ports, and in providing adequate answer to the central research question for this thesis, ‘How has environmental governance of West and Central African ports changed following the interplay between global, regional, national, and sub-national (local) governance levels and what are the enabling and constraining conditions for effective port environmental governance in West and Central Africa?’ Understanding these aspects is also essential for strengthening and

moving the emergent environmental governance transformation forward. Their interplay is depicted in Figure 6.1 and explained below.

The spaces of environmental interaction are shown in three-tiered ovals. The *space of sub-national (local) environmental interaction* is the port level where port authorities are initiating environmental interactions with terminal operators and other stakeholders. The interactions are emergent, mostly ad-hoc and informal, with or without direct involvement by state actors. The *space of national environmental interaction* is the formal and institutionalised in-country state-led interactions on port environmental policy-making. State actors in command-and-control style mostly dominate the interactions. The *space of regional environmental interaction* is the supra-national interaction on port environmental policy among WCA ports and states in their regional territorial confine. Here, there are two different spaces of interaction existing side-by-side. This is the top-tier of the three-tiered oval in Figure 6.1. There is the formal and institutionalised inter-governmental space for interaction on port environmental policy. The interaction is among state actors from WCA governments. Alongside this formal interaction is an emergent space of interaction that brings together port authorities and their regional association (PMAWCA), civil societal actors (PENAF), the regional co-ordination unit (RCU) of the Abidjan Convention, as inter-governmental actors, as well as state actors. The emergent interaction is informal and ad-hoc, and not state-led. State actors participate only as one of the actors.

The first two of the institutional aspects that are distinguished – agency and architecture – are moulded on the earth system governance (ESG) framework (Biermann et al., 2010), which outlines the concept of earth system governance in five ‘A’s – Agency (key actors in governance); Architecture (institutional arrangements in governance); Accountability and Legitimacy (representation in governance); Allocation and Access (who gets what, where, and how in governance); and Adaptiveness (preparing for an inevitable global change). Of these five ‘A’s, Agency and Architecture are relevant to the synthesis of this thesis’ findings. Interactiveness was added as a third key aspect, because interactions between actors (within ports and across different levels of governance) were central to the analysis presented.

Applied to the findings of this thesis, *Agency* refers to the performative roles of actors – state or state and non-state, or both state and non-state together – in addressing common environmental problems facing WCA ports. *Architecture* refers to the collaborative establishment of norms, rules and regulations, and decision-making procedures for addressing WCA’s common port environmental problems. *Interactiveness* refers to the mutual non-hierarchical dialogue and communication among actors in addressing common port environmental problems in WCA. The three institutional aspects are discussed as follows.

In *agency*, port authorities in WCA are taking up new environmental roles beside the state. They are pursuing mostly informal and ad-hoc innovative multiple-actor collaborative arrangements with stakeholders in the sub-national space of environmental interaction. This is occurring in individual ports to exchange environmental information and initiate solutions to bring about environmental change in the ports. It is, however, not organised homogeneously among the port authorities. It is rather differentiated based on national institutional arrangements, ranging from highly centralised to decentralised politico-administrative systems. State actors have formal and institutionalised agency in the national space of environmental interaction, based on the conventional role and responsibility of the state for national environmental protection. Before the emergent agency of the port authority-led innovative environmental collaboration in the ports, the ports were characterised by hierarchical modes of governance in which the state solely directed port environmental policy and regulations. This excluded the port authorities and stakeholders from port environmental policy-making. In the regional space of environmental interaction, state actors from multiple WCA states, by the conventional role of states having responsibility and obligation for implementing multilateral environmental agreements, constitute the formal and institutionalised agency for inter-governmental negotiations. Alongside the formal agency of state (inter-governmental) actors under the Abidjan Convention in the existing space of regional interaction, emergent new informal and ad-hoc agency emerges, containing the RCU, port authorities and their regional association, and PENAf, together with state actors in multiple-actor collaboration. These multiple actors are taking up new roles by innovatively pooling resources, skills and ideas together to commonly address WCA's port environmental problems. This emergent multiple-actor agency reflects a globalising governance trend as indicated above. In the regional space of environmental interaction, such agency is existing side-by-side with conventional inter-governmental agency.

In relation to *architecture*, the innovative collaboration among port authorities and stakeholders in the sub-national space of environmental interaction is initiating new norms and rules of procedure for dealing with ships' waste, vehicular flows, carbon emissions, energy efficiency, and waste recycling. These norms and rules mostly come voluntarily in a new ad-hoc and informal architecture ahead of and beside existing state regulations. Like agency, the new ad-hoc and informal architecture also varies among WCA ports depending on national politico-administrative systems. Nonetheless, there are similarities particularly regarding traffic flows, carbon emissions and energy efficiency. These are mostly influenced by globalised practices of predominantly the same multinational terminal operators – AP Moeller-Maersk and Bollorè Groups – across the ports. The essential architecture of the national space of environmental interaction is top-down command-and-control, but with the

emergent ad-hoc sub-national architecture, actual practices generating port environmental solutions are no longer so. For the regional space of environmental interaction, the Abidjan Convention is the formal and institutionalised architecture for hybridising multinational environmental agreements into regional policies and regulations. It is focused on global environmental regimes and therefore influenced by globalisation processes.

The agency and architecture together at each of the three spaces of environmental interaction function through *interactiveness*. The extent and scope of interactiveness vary among the spaces. In the sub-national space, there is mutual and reciprocal engagement of multiple sub-national actors, with or without state actors, to deliberate on and take environmental actions. The actors learn from each other's input, response actions, and good environmental practice in adopting common environmental behaviour. The national space has limited interactiveness. Deliberations are mostly among state actors but sometimes co-opt non-state actors. The approach remains conventional compared to contemporary forms of global governance. In the regional space, state actors from WCA's multiple states deliberate mutually among themselves, without non-state actors, in limited interactiveness. However, multiple actors from the three spaces of interaction and among multiple WCA states interacting jointly in the emergent new regional space deliberate non-hierarchically and communicatively to adopt harmonious and common solutions for common port environmental problems. Their interactive approach reflect contemporary global governance styles.

The *interplay* of the three institutional aspects across the three spaces of environmental interaction, the RCU, from the formal and institutionalised inter-governmental agency and architecture in the space of regional environmental interaction, are reaching out with PENAF directly to port authorities in their sub-national space of environmental interaction to strengthen implementation gaps of the Abidjan Convention. Simultaneously, port authorities, from the sub-national (local) space, are using their agency together with their regional association (PMAWCA) to interact directly with regional inter-governmental actors in addressing common port environmental problems. The direct and collaborative interplay between the RCU and the port authorities is creating the new informal and ad-hoc agency and architecture in a new space of regional environmental interaction. The direct interplay by-passes the space of national interaction as well as existing formal space of regional interaction, but it includes state actors. The direct interplay proceeded with the consent of state actors from their formal and institutionalised space of regional interactions but it is not driven by them. State actors from the space of national interaction continue to interact among themselves in the formal and institutionalised space of regional interaction and participate in the emergent regional

space of interaction. They then in their individual states consider interacting formally in top-down approaches with the space of sub-national interaction. Dependent on existing national politico-administrative system, the space of sub-national interaction interacts informally with the space of national interaction in bottom-up approaches. The informal and ad-hoc spaces of sub-national and regional environmental interaction exist concurrently with the formal and institutionalised spaces of national and regional environmental interaction. The emergent informal space of regional environmental interaction exists outside, more or less as an extension, of the formal and institutionalised space of regional interaction. Significant to this emergent informal and ad-hoc regional space of environmental interaction, is the emergent regional port environmental co-operation.

The dynamics of the interplay of the three institutional factors across the three spaces of environmental interaction enable us to understand the environmental transformation of WCA ports. In answering the central research question, the interplay dynamics are transforming environmental governance for WCA ports in a number of ways. In one way, the interplay is overcoming the constraints of diverse national political and institutional systems, to proceed with environmental change progressively, without contesting existing statist arrangements but co-existing with them. In another way, the interplay strengthens the ability and the role of the ports as appropriate sites for implementation of the Abidjan Convention's shipping pollution prevention regulations and policies. In yet another way, the interplay evidences the transformation of environmental governance for WCA ports from each port being governed individually by 'government' to regional port environmental 'governance' steering in which port authorities, ENGOs, as well as state actors collaborate with one other. In an emergent regional port environmental co-operation, the interaction in the new regional space has potential for enabling and institutionalising the environmental governance transformation for WCA ports.

In sum, the overarching key findings contribute to a better understanding of how state and non-state actors and institutions, formal and ad-hoc, become involved and take roles in setting the agenda for defining environmental problems and solutions in multiple actor-multiple level interactions in which conventional and contemporary approaches to environmental governance exists side-by-side. No matter what the future holds, it is very evident that environmental governance for WCA ports is no longer a nation-state monopoly. At the core of the transformation is the fundamental shift from states to transnational co-ordination of port environmental governance in a multiple actor-multiple level perspective.

6.4 Recommendations and future outlook

6.4.1 Towards a future research agenda

The cases studied in this thesis have shown that environmental governance transformation for WCA ports requires multiple actors and institutions beyond the state in multiple level interaction. They provide insights and lessons for a better understanding of dynamics and mechanisms by which actors and institutions in WCA are governing port environmental reform, and point out the significance of an emergent informal regional space of environmental interaction for WCA ports, not driven by the state. Presently, few scholars have examined such processes for ports, particularly in the context of developing countries, and a research agenda yet to coalesce. The thesis also contributes to regionalisation in marine environmental governance and shows that there is more attention needed for the larger research agenda in marine governance. Further comparative research in different geo-political regions, using similar sets of theories as applied in this thesis, is therefore proposed.

1. Doing similar studies of ports in the Eastern and Southern Africa region. This would be interesting to validate whether the findings of this study have a geographically wider relevance. Environmental reform may be relatively new for Eastern and Southern African ports just as it is for ports in West and Central Africa but the geo-political dynamics could be different.
2. Extending this study to ports in Asia. Asia has seen emerging economies in the last few decades. These economies are beginning to give attention to the environment by integrating it into their economic development processes. Moreover, political systems in Asia differ from those of WCA, among others giving their historical trajectories. It should therefore be interesting to explore the interactive dynamics between the region's state actors, port authorities, private port economic actors, and regional institutions in Asia.
3. Applying similar theoretical perspectives from this research to analyse and understand the role of the state in the environmental reform trajectories of European ports. European ports are considered frontrunners in port environmental reform compared to those in Africa, seen as laggards. Applying the conceptual model of environmental reform trajectories as was developed in this thesis to the history of port environmental reform in Europe could further validate the usefulness of this model. Additionally, the studies could bring about lessons that go beyond the 'frontrunners-laggards' labelling, to show that there are good lessons to learn from both sides of the divide.

6.4.2 Recommendations for policy

1. WCA ports must have an integrated regional code of environmental conduct that harmonizes environmental standards for the ports. The environment of the ports is threatened by increasing shipping with potential for illegal waste dumping, marine invasive species and oil spills. An integrated regional code of environmental conduct must link guidelines on these risks with requirements that are applied coherently across the ports. The ports must be treated as sites where compliance with regional and international marine environment policies can best be checked and uniformly enforced. Guidelines on illegal waste dumping in the integrated regional code of environmental conduct will for instance, increase the availability and adequacy of reception facilities in the ports. The guidelines must secure the use of port reception facilities by ships so that ships will be denied incentives for waste dumping.
2. WCA ports must establish a regional environmental information exchange. The port authorities must develop partnership in sharing environmental information with standards and obligation for environmental reporting that can secure port sustainability and public safety. This is necessary to ensure timely access to environmental information and support decision-making. The existence of such information exchange could have averted the Probo Koala dumping incident in Abidjan in 2006. The vessel had first visited the port of Lagos, to discharge gasoline, where it was observed that there was toxic waste on-board. An information sharing mechanism in place would have been triggered to alert ports in WCA and beyond, that the vessel was carrying toxic waste for the ports to take the necessary precautions.
3. The RCU of the Abidjan Convention must be strengthened as a force with which state and non-state actors must reckon to support and strengthen the environmental reform of WCA ports. The RCU must uphold its strong cognitive and normative influence on WCA states but also work on strengthening its ability in building the environmental capacity of the states, particularly on marine pollution prevention. Capacity building is the way to empower the states to take environmental action. The novelty of the RCU's ability to initiate a transnational multiple actor-multiple level governance that co-exists with conventional inter-governmental governance sets it apart from conventional international (regional) bureaucracies. It must work together with the states, port authorities and civil society to organise broad regional consultations to develop and commit to an integrated regional environmental code of conduct for WCA ports.

Bibliography

- Abbott, K.W. 2012. The Transnational Regime Complex for Climate Change. *Environmental Planning C: Government and Policy* 30:571-590.
- Accario, M., Vanelander, T., Sys, C., Ferarri, C., Rouboutsos, A., Guiliano, G., Lam, J. S. L., and Kapros, S. 2014. "Environmental Sustainability in Seaports: A Framework for Successful Innovation." *Maritime Policy and Management* 41 (5): 480-500. DOI:10.1080/03088839.2014.932926.
- Adams, M., Quinonez, P., Pallis, A.A., Wakeman, T.H. 2009. *Environmental Issues in Port Competitiveness* (Atlantic Gateway Research Initiative, Working Paper No. 7). Dalhousie University: Halifax.
- Addico, M. T. 2000. "African Shippers' Organisations: The Ghanaian Experience." *Maritime Policy and Management* 27 (2): 121-132. DOI:10.1080/030888300286545.
- Addo, S. 1994. *Port Cities and the International trade of Ghana*. *African Quarterly* 9(1-2):52-69.
- Adenikinju, A. 2008. *West African Energy Security Report*. Centre for Energy Economics. Austin: University of Texas.
- African Development Bank (AfDB). 2010. "Reforms and the Regulatory Framework for African ports." In *African Development Report*, 76-106. New York: Oxford University Press.
- African Development Bank (AfDB). 2013. *Annual Development Effectiveness Review 2013: Towards Sustainable Growth for Africa*.
- African Development Bank (AfDB). 2017. *Africa's Macroeconomic Prospects*. In: *African Economic Outlook*. Abidjan: African Development Bank.
- African Development Bank (AfDB), OECD, & UNDP. 2015. *Africa Economic Outlook 2015: Towards More Inclusive Place-Based Development Strategies in Africa*. Paris: OECD Publications.
- Agbeja, Y.E. 2016. *An Overview of Efforts Towards Collaborative Fisheries Management in The Gulf of Guinea by Nigeria*. *International Journal of Fisheries and Aquatic Studies* 4(4): 10-114.
- Akonor, K. 2006. *Africa and IMF Conditionality: The Unevenness of Compliance, 1983-2000*. Routledge: NY and London.
- Andonova, L., Betsill, M., and Bulkeley, H. 2009. *Transnational Climate Governance*. *Global Environmental Politics* 9(2): 52-73
- Ansell, C. and Gash, A. 2008. *Collaborative Governance in Theory and Practice*. *Journal of Public Administration Research and Theory* 18(4): 543-571.

- Arts, B. and Buizer, M. 2009. Forests, Discourses, Institutions: A Discursive Analysis of Global Forest Governance. *Forest Policy and Economics* 11: 340-347.
- Arts, B. and Van Tatenhove, J. 2004. Policy and Power: A Conceptual Framework Between The 'Old' and 'New' Policy Idioms. *Policy Sciences* 37: 339-356.
- Arts, B. and Van Tatenhove, J. 2006. Political Modernisation. In: *Institutional Dynamics in Environmental Governance*. Arts, B & Leroy, P (Eds.) Springer: 21-43.
- Arts, B., P. Leroy, and J. van Tatenhove. 2006. "Political Modernisation and Policy Arrangements: A Framework for Understanding Environmental Policy Change." *Public Organization Review* 6 (2): 93-106. DOI: 10.1007/s11115-006-0001-4.
- Arts, B., Noorthmann, M., and Reinalda, B. (Eds.). 2001. *Non-State Actors in International Relations*. Aldershot: Ashgate.
- Aryeetey, E. 2001. *Regional Integration in West Africa*. OECD Development Centre. Working Paper No. 170. Paris: OECD Publications.
- Asia-Pacific Economic Cooperation (APEC). 2011. Study to Develop a Green Port Evaluation Index. Presented at 34th Transportation Working Group Meeting. Brisbane, Australia. 13-17 June 2011.
- Audige, M. 1995. *Maritime Transport Serving West and Central Africa: Trends and Issues*. Sub-Saharan Africa Transport Policy Programme Working Paper No. 16 (1995). The World Bank and Economic Commission for Africa.
- Ayobayo, B.J. 2014. *The Koko Incident: Law of the Sea and Environmental Protection*. LL.M Dissertation, University of Lagos, Nigeria.
- Bache, I. and Flinders, M. (Eds.). 2004. *Multi-level Governance*. Oxford University Press.
- Bäckstrand, K., Khan, J., Kronsell, A. and Lövbrand, E. (Eds.). 2010. *Environmental Politics and Deliberative Democracy: Examining the Promise of New Modes of Governance*. Cheltenham, UK: Edward Elgar.
- Bailey, D., and G. Solomon. 2004. "Pollution Prevention at Ports: Cleaning the Air." *Environmental Impact Assessment Review* 24 (7-8): 749-774. DOI:10.1016/j.eiar.2004.06.005.
- Barley, S.R., Tolbert, P.S. 1997. Institutionalization and Structuration: Studying the Links Between Action and Institution, *Organ. Stud.* 18: 93-117.
- Barnes-Dabban, H., Van Koppen, K., and Mol, A. 2017. Environmental Reform of West and Central Africa Ports: The Influence of Colonial Legacies. *Maritime Policy and Management* 44(5): 565-583.
- Barnett, M.N. and Finnemore, M. 1999. The Politics, Power, and Pathologies of International Organisations. *International Organisation* 53(4): 699-732.

- Bauer, S. 2009a. The Ozone Secretariat: The Good Shepherd of Ozone Politics. In: *Managers of Global Change* (Biermann, F., and Siebenhüner, B. [eds.]) 2009: 225-244. USA: MIT Press.
- Bauer, S. 2009b. The Desertification Secretariat: A Castle Made of Sand. In: *Managers of Global Change* (Biermann, F., and Siebenhüner, B. [eds.]) 2009: 293-317. USA: MIT Press.
- Bauer, S., Anderson, S., and Biermann, F. 2012. International Bureaucracies. In: *Global Environmental Governance Reconsidered*. (Biermann & Pattberg [Eds.]) 2012: 27-44. USA: MIT Press.
- Bauer, S., Biermann, F., Dingwerth, K., and Siebenhüner, B. 2009. Understanding International Bureaucracies: Taking Stock. In: *Managers of Global Change* (Biermann, F., and Siebenhüner, B. [eds.]) 2009: 15-36. USA: MIT Press.
- Beck, U. 1996. World Risk Society as Cosmopolitan Society? Ecological Questions in A Framework of Manufactured Uncertainties. *Theory, Culture & Society* 13(4): 1-32.
- Beck, U. 2005. *Power in the Global Age: A New Global Political Economy*. Cambridge, UK: Polity Press.
- Beer, M., Walton, A.E. 1987. Organization Change and Development. *Annual Review of Psychology* 38: 339-367.
- Bellamy, R. 2003. Sovereignty, Post-Sovereignty and Pre-Sovereignty: Three Models of the State, Democracy and Rights Within the EU. In: *Sovereignty in Transition*. N. Walker (Ed.): 167-190, Hart, 2003. Available at: <http://dx.doi.org/10.2139/ssrn.1530445>
- Bendell, J. (Ed.). 2000. *Terms of Endearment, Business, NGOs and Sustainable Development*. Sheffield: Greenleaf Publications.
- Berger, P. and Luckmann, T. 1966. *The Social Construction of Reality: A Treatise in the Sociology of Knowledge*. Penguin Books: London.
- Betsil, M. and Bulkeley, M. 2004. Transnational Networks and Global Betsill, M.M and Bulkeley, H. 2006. Cities and Multilevel Governance of Global Climate Change. *Global Governance* 12:141-159.
- Bichou, K. and Gray, R. 2005. A Critical Review of Conventional Terminology for Classifying Seaports. *Transportation Research Part A* 39: 75-92.
- Biermann, F. and Dingwerth, K. 2004. Global Environmental Governance and The Nation-State. *Global Environmental Politics* 4(1): 1-22.
- Biermann, F. and Pattberg, P. 2012. Global Environmental Governance Revisited. In: *Global Environmental Governance Reconsidered*. Biermann, F. and Pattberg, P (Eds.): 1-23. USA: MIT Press.

- Biermann, F. and Siebenhüner, B. (Eds.). 2009. *Managers of Global Change*. Cambridge, Massachusetts: MIT Press.
- Biermann, F., and Siebenhüner, B. 2013. Problem Solving by International Bureaucracies: The Influence of International Secretariats on World Politics. In: *Routledge Handbook of International Organizations*. (Bob Reinalda [Ed.]). 2013: 149-161. London: Routledge.
- Biermann, F., Betsill, M.M., Gupta, J., Kanie, N., Lebel, I., Liverman, D., Schroeder, H., Siebenhüner, B., and Zondervan, R. 2010. Earth System Governance: A Research Framework. *International Environmental Agreements* 10:277-298.
- Bosch-Sijtsema, P.M. and Postma, T.J.B.M. 2009. Co-operative Innovation Projects: Capabilities and Governance Mechanisms. *Journal of Production Innovation Management* 26: 58-70.
- Brady, H.E. and Johnston, R. 2006. The Rolling Cross-Section and Causal Attribution. In: *Capturing Campaign Effects*. Edited by Brady, H.E. and Johnston, R. Pp. 164-195. Ann Arbor: University of Michigan Press.
- Bricki, N. and Green, J. Not dated. A Guide to Using Qualitative Research Methodology. *Medecins Sans Frontieres (MSF) Field Research*. <http://hdl.handle.net/10144/84230> Accessed 20/10/2017.
- Briggs, A.P.J. and Coleman, M. (Editors). 2007. *Research Methods in Educational Leadership and Management* (2nd Edition). London: Sage.
- Brooks, M.R. 2004. The Governance Structure. *Review of Network Economics Journal* 3(2): 168-183.
- Brown, A.D. 2015. Making Sense of Inquiry Sense-Making. 2000. *Management Studies* 37: 45-75.
- Brown, A.D., Colville, I., and Pye, A. 2015. Making Sense of Sense-Making in Organizations. *Organisation Studies* 36 (2): 265-277.
- Bryman, A. 2004. *Social Research Methods* (2nd Edition). Oxford: Oxford University Press.
- Bulkeley, H. 2005. Reconfiguring Environmental Governance: Towards a Politics of Scales and Networks. *Political Geography* 24(8): 875-902.
- Bulkeley, H., and Newell, P. 2010. *Governing Climate Change*. London: Routledge.
- Bulkeley, H., Hoffmann, M.J., Van Deveer, S.D., and Milledge, V. 2012. Transnational Governance Experiments. In: *Global Environmental Governance Reconsidered*. Biermann, F. and Pattberg (Eds.) 149-171. Cambridge, MA: MIT Press.
- Castells, M. 2000. *The Rise of the Network Society* (2nd Edition). Oxford: Blackwell.

- Chafin, B. 2010. Recasting Maritime Governance in Ghana: The Neo-Developmental State and the Port of Tema. *Journal of Modern African Studies* 48(4): 573-598.
- Chayes, A., and Chayes, A.H. 1993. On Compliance. *International Organisation* 47(2): 175-205. Collier, P. 2015. Africa: New Opportunities, Old Impediments. *Economic Affairs* 35(2): 169-177.
- Chiu, R.-H., Lin, L.-H., and Tin, S.-C. 2014. Evaluation of Green Port Factors and Performance: A Fuzzy AHP Analysis, *Mathematical Problems in Engineering*, Hindawi Publishing: Cairo.
- Chukwuone, N.A., Ukwe, C.N., Onugu, A., and Ibe, C.A. 2009. Valuing the Guinea Current Large Marine Ecosystem: Estimates of Direct Output Impact of Relevant Marine Activities. *Ocean and Coastal Management* 52(3-4): 189-196.
- Collier, P. 2014. Africa: New Opportunities, Old Impediments. *Economic Affairs* 35(2): 169-177.
- Cramer, J., Van der Heijden, A., and Jonker, J. 2006. Corporate Social Responsibility: Making Sense Through Thinking and Acting. *Business Ethics: European Review* 15(4).
- Crook, R.C. 2003. Decentralisation and Poverty Reduction in Africa: the Politics of Local-Central Relations. *Public Administration and Development* 23: 77-88.
- Daly, John. 2012. Cameroon, West Africa's Latest Oil Battleground. www.oilprice.com Accessed 18/10/2016.
- Darbra, R. M., N. Pittam, K. A. Royston, Darbra, J.P., and Journee, H. 2009. "Survey on Environmental, Monitoring Requirements of European Ports." *Journal of Environmental Management* 90 (3): 1396-1403. DOI: 10.1016/j.jenvman.2008.08.010.
- De Melo, J., and Tsikata, Y. 2015. Regional Integration in Africa: Challenges and Prospects. WIDER Working Paper, No. 2014/037.
- Dellas, E., Pattberg, P., and Betsill, M. 2011. *International Environmental Agreements* 11(1): 85-98.
- Desai, B.H. 2010. *Multilateral Environmental Agreements: Legal Status of the Secretariats*. Cambridge University Press.
- Dinawoodie, J., Tuck, S., and Knowels, H. 2012. Assessing the Environmental Impact of Maritime Operations in Ports: A Systems Approach. In D.W Song, and P.M. Panayides (Eds.). 2012. *Maritime Logistics: Contemporary Issues* 263-283. Bingley: Emerald.
- DIT (Douala International Terminal). Not dated. Vehicle Access Plan. Douala, Cameroon: Port Authority of Douala (PAD).

- Donkor, S.M. and Abe, J. 2012. Impact of Climate Change in the Guinea Current Large Marine Ecosystem Region. In: *Frontline Observations on the Climate Change and Sustainability of Large Marine Ecosystems*. (Vol. 17): 64-80. Sherman, K. and McGovern, G. (Eds.). New York, USA: UNDP.
- Drewry Maritime Research. 2015. Latest Global and Regional Trends in Port Sector. 5th Meeting of the COMCEC Transport and Communications Working Group. Ankara, 12th February 2015. London: Drewry.
- Drewry Shipping Consultants Ltd. 2008. *Ports And Shipping: Landlords Needed*. London: Drewry Shipping Consultants Ltd.
- Dryzek, J. 1997. *The Politics of the Earth: Environmental Discourses*. Oxford: Oxford University Press.
- Duffy, R. 2013. Global Environmental Governance and North-South Dynamics: The Case of CITES. *Environment and Planning C: Government and Policy* 31: 222-239.
- Dunphy, D., Griffiths, A., and Benn, S. 2007. *Organizational Change for Corporate Sustainability: A Guide for Leaders and Change Agents for the Future*. Abingdon: Routledge Taylor and Francis Group.
- Eastmond, M. 2007. Stories as Lived Experience: Narratives in Forced Migration Research. *Journal of Refugee Studies* 20 (2): 248-264.
- Eden, C. and Huxham, C. 1996. Action Research for Management Research. *British Journal of Management* 7: 75-86.
- Environmental Governance: The Cities for Climate Protection Programme. *International Quarterly Studies* 48(2): 471-493.
- Espach, R.H. 2009. *Private Environmental Regimes in Developing Countries: Globally Sown, Locally Grown*. New York: Palgrave Macmillan.
- ESPO. 2012. *Green Guide: Towards Excellence in Port Environmental Management and Sustainability*. Brussels: ESPO.
- ESPO. 2016. *Annual Report: European Sea Ports Organization 2015-2016*. Brussels: ESPO.
- ESPO/EcoPorts. 2016. *ESPO/EcoPorts Port Environmental Review 2016: Insight on Port Environmental Performance and its Evolution Overtime*. Brussels: ESPO/EcoPorts/POROTOPIA.
- European Sea Ports Organisation (ESPO). 1994. *Environmental Code of Practice*. Brussels: ESPO.
- European Sea Ports Organisation (ESPO). 2001. *Environmental Review*. Brussels: ESPO.

- Evans, R. 2010. "Trafigura Fined €1m for Exporting Toxic Waste to Africa." *The Guardian* (London), July 23. <http://www.guardian.co.uk/world> Accessed Jan 22, 2015.
- Eze, C.N. 2008. 'The Probo Koala Incident in Abidjan: A Critique of the Basel Convention Compliance Mechanism'. Paper delivered at the 8th International Conference on Environmental Compliance and Enforcement, 2008, Cape Town, South Africa.
- Facility (PRF) Guidelines. Undated. Tema, Ghana: Ghana Ports and Harbours Authority.
- Feldman, M.S. 1989. *Order Without Design*. Stanford University Press: Stanford.
- Flyvbjerg, B. 2006. Five Misunderstandings about Case Study Research. *Qualitative Inquiry* 12(2): 219-245.
- Foster, V. and Briceño-Garmendia, C. (Eds.). 2010. *Africa's Infrastructure: A Time for Transformation*. Washington D.C: Agence Française de Développement/World Bank.
- Fouda, R.A.N. 2012. "Port and Shipping Express Management: The Challenges Faced by West and Central Africa in This Century." *Open Journal of Applied Sciences* 2: 294-297. doi:10.4236/ojapps.2012.24043.
- Frantzeskaki, N., J. Wittmayer, and D. Loorbach. 2014. "The Role of Partnerships in Realizing Urban Sustainability in Rotterdam's City Ports Area, the Netherlands." *Journal of Cleaner Production* 65: 406-417. DOI:10.1016/j.jclepro.2013.09.023.
- Fraser, E.D.G, Doughill, A.J., Mabee, W.E., Reed, M., and McAlpine, P. 2006. Bottom Up and Down: Analysis of Participatory Processes for Sustainability Indicator Identification as a Pathway to Community Empowerment and Sustainable Environmental Management. *Journal of Environmental Management* 78: 114-127.
- Fraser, P. 2010. *The Probo Koala Inquiry. Second Interim Report*. <http://www.probokolainquiry.com/pdf> Accessed Jan 22, 2015.
- Friedman, J. 2012. *Saving a Sinking Agency: The National Port Authority of Liberia, 2006–2011, Innovations for Successful Societies*. Princeton, NJ: Princeton University Press.
- Galaz, V., Biermann, F., Crona, B., Loorbach, D., Folke, C., Olsson, P., Nilsson, M., Allouche, J., Persson, A. and Reisch, G. 2012. Planetary Boundaries: Exploring the Challenges for Global Environmental Governance. *Current Opinion in Environmental Sustainability* 4(1): 80-70.
- Gekara, V.O., and P. Chhetri. 2013. "Upstream Transport Corridor Inefficiencies and the Implications for Port Performance: A Case Analysis of Mombasa Port

- and the Northern Corridor.” *Maritime Policy and Management* 40 (6): 559-573.
DOI:10.1080/03088839.2013.776716.
- Gerring, J. 2004. What is a Case Study and What is it Good For? *American Political Science Review* 98: 341-354.
- Gerring, 2007. *Case Study Research: Principles and Practices*. Cambridge, UK: Cambridge University Press.
- Ghana Ports and Harbours Authority/University of Ghana (GPHA/UoG). 2011. *Water Quality and Biological Baseline Survey of the Port of Tema*.
- Giddens, A. 1990. *Consequences of Modernity*. Cambridge: Polity Press.
- Gilpin, R. 2007. *Enhancing Maritime Security in the Gulf of Guinea*. Strategic Insights VI(1). Monterey, California: Centre for Contemporary Conflict, Naval Postgraduate School.
- Glasbergen, P., Biermann, F. and Mol, A. 2007. *Partnerships, Governance and Sustainable Development: Reflections on Theory and Practice*. Cheltenham: Edward Edgar.
- GNA, 2009. ‘Government will not Interfere in Management of SOEs’, 18/08/2009. <http://www.ghanaweb.com/GhanaHomePage/NewsArchive/artikel.php?ID=167295> Accessed 29/05/2017.
- Grainger, A. 2013. Environmental Globalisation and Tropical Forests. In: *The Globalisation of Environmental Crisis*. Edited by Oosthoek, J. and Gill, B.K. Routledge: London/New York. Pp. 53-66.
- Grande, E. 2001. *Institutions and Interests: Interest Groups in the European System of Multi-Level Governance*. Working Paper No. 1/2001, Chair of Political Science, TU Munich.
- Gray, K.R. 2003. Multilateral Environmental Agreements in Africa: Efforts and Problems in Implementation. In *International Environmental Agreements: Politics, Law and Economics* 3: 97-135, 2003. Kluwer Academic Publishers, Netherlands.
- Gritsenko, D., and J. Yliskylä-Peuralahti. 2013. “Governing Shipping Externalities: Baltic Ports in the Process of SOx Emission Reduction.” *Maritime Studies* 12 (10). DOI: 10.1186/2212-9790-12-10.
- Guinea Current Large Marine Ecosystem (GCLME), 2011. *Report of the Third Regional Workshop and Task Force Meeting on the Ratification and Implementation of the IMO Convention on Ballast Water Management*. Lomé, Togo, 15-16 September 2011.
- Gulbrandsen, L.H. 2010. *Transnational Environmental Governance: The Emergence and Effects of Certification of Forests and Fisheries*. Cheltenham, UK: Edward Elgar.

- Gupta, A.K., Gupta, S.K., and Patil, R.S. 2005. "Environmental Management Plan for Ports and Harbour Projects." *Clean Technical Environmental Policy* 7: 133-141. DOI: 10.1007/s10098-004-0266-7.
- Haas, P. 1991. *Save the Seas: UNEP's Regional Seas Programme and the Co-ordination of Regional Pollution Control Efforts.* *Ocean Yearbook* 9: 188-212.
- Hajer, M.A. 1995. *The Politics of Environmental Discourse: Ecological Modernisation and the Policy Process.* Oxford: University Press.
- Harding, A., Palsson, G. and Raballand, G. 2007. *Port and Maritime transport Challenges in West and Central Africa.* Sub-Saharan Africa Transport Policy Programme Working Paper No. 84, Washington DC: World Bank.
- Hawkins, D.G., Lake, D.A., Nielson, D.L., and Tierney, M.J. 2006. *Delegation Under Anarchy: States, International Organisations, and Principal-Agent Theory.* In: *Delegation and Agency in International Organisations* (Hawkins, D.G., Lake, D.A, Nielson, D.L, and Tierney, M.J. [Eds.]). 2006: 3-38. Cambridge, UK: Cambridge University Press.
- Heidegger, M. 1998/1999. *Contributions to Philosophy (From Enowing).* (trans. P. Emand and K. Malay). Bloomington, Indianapolis, IN.: Indiana University Press.
- Held, D. and McGrew, A. (Eds.) 2002. *Governing Globalisation: Power, Authority and Global Governance,* Cambridge: Polity Press.
- Hofmeyr, J. 2013. *Africa Rising? Popular Dissatisfaction with Economic Management Despite a Decade of Growth.* Policy Brief (2), Afro Barometer.
- Holt, R. and Cornelissen, J. 2014. *Sense-Making Revisited.* *Management Learning* 45 (5): 525-539.
- Homsombat, W., Yip, T. L., Yang, H., and Fu, X. 2013. "Regional Co-operation and Management of Port Pollution." *Maritime Policy and Management* 40 (5): 451-466. DOI:10.1080/03088839.2013.797118.
- Hooghe, L. and Marks, G. 2001a. *Multi-level Governance and European Integration.*Oxford: Rowman & Littlefield Publishers.
- Hooghe, L. and Marks, G. 2001b. *Types of Multi-level Governance.* *European Integration online Papers (EIOP).* Vol. 5(11). <http://eiop.or.at/eiop/texte/2001-011a.htm>. Accessed 15/04/2017.
- Hooghe, L. and Marks, G. 2003. *Unravelling the Central State, But How? Types of Multi-Level Governance.* *American Political Science Review* 97(2): 233-243.
- Ibe, C. and Sherman, K. 2002. *The Gulf of Guinea Large Marine Ecosystem Project: Turning Challenges into Achievements.* In: *The Gulf of Guinea Large Marine Ecosystem.* McGlade, Cury, P., Koranteng, K.A., and Hardman-Mountford, N.J. (Eds.): 27-39. Elsevier Science B.V.

- Ikpeze, N.I., Soludo, C.C., and Elekwa, N.N. 2004. Nigeria: The Political Economy of Policy Process, Policy Choice and Implementation. In: *The Politics of Trade and Industrial Policy in Africa: Forced Consensus?* Soludo, C.C., Ogbu, M.O., and Chang, H-J. (Eds.). International Development Research Centre, Africa World Press: Trenton, NJ. 2004: 341-367.
- Interim Guinea Current Commission (IGCC). 2009a. Regional Strategic Action Plan (RSAP) to Minimize Transfer of Harmful Aquatic Organisms and Pathogens in Ships' Ballast Water and Sediments. Abidjan, Ivory Coast: NIDO/UNDP/UNEP/GEF/NOAA/NEPAD.
- Interim Guinea Current Commission (IGCC). 2009b. Report of Second Regional Workshop and Task Force Meeting on the Ratification and Implementation of the IMO Convention on Ballast Water Management. Abidjan, Ivory Coast, 9-10 July 2009.
- International Association of Ports and Harbours (IAPH). 2007. Tool Box for Port Clean Air Programme. Tokyo, Japan: International Association of Ports and Harbours.
- International Crisis Group (ICG). 2010. Cameroon: Fragile State? Africa Report No. 160. Dakar, Nairobi, Brussels: International Crisis Group.
- Jackson, J.H. 1992. Status of Treaties in Domestic Legal Systems: A Policy Analysis. *American Journal of International Law* 86(2): 310-340.
- Jänicke, M.1993. 'ÜberÖkologische Und PolitischeModernisierungen', *Zeitschrift Für Umweltpolitik Und Umweltrecht*. 1993 (2): 159-175. Translated and Reprinted. In A.P.J. Mol, D.A. Sonnenfeld and G. Spaargaren (Eds.). 2009. *The Ecological Modernisation Reader: Environmental Reform in Theory and Practice* 28-41. London: Routledge.
- Jessop, B. 2004. Changes in the EU as Integral Moments in the Transformation and Reorientation of Contemporary Statehood. In: *Multi-Level Governance and Multi-Level Meta-Governance*. Bache, I. and Flinders, M. (Eds.): 49-74. Oxford: Oxford University Press.
- Joas, M., Detlef, J., and Kern, K. (Eds.) 2008. *Governing a Common Sea: Environmental Policies in the Baltic Region*. London: Earthscan.
- Joseph, R. 2016. The Growth-Governance Puzzle in Africa. In: *Maintaining Governance Gains: The National and Regional Agendas*. Issue Brief, Africa Growth Initiative, Global Economy and Development, Brookings Institution.
- Juhel, M.H. 2001. Globalisation, Privatisation and Restructuring of Ports. *International Journal of Maritime Economists* 3:139-174.

- Julian, K. 2012. African Integration and Inter-Regionalism: The Regional Economic Communities and their Relationship with the European Union. *Review for Southern Africa* 34(1).
- Kaiser, R. and Prange, H. 2002. A New Concept of Deepening European Integration? The European Research Area and the Emerging Role of Policy Coordination in a Multi-Level Governance System. *European Integration online Papers (EIoP)* Vol. 6(18). <http://eiop.or.at/eiop/texte/2002-018a.htm> Accessed 15/04/2017.
- Karkkainen, B.C. 2004. Post-Sovereign Environmental Governance. *Global Environmental Politics* 4: 1.
- Karreman, D. and Alvesson, M. 2001. Making Newsmakers: Conversational Identity at Work. *Organisation Studies* 22: 59-89.
- Keohane, R.O. 1986. International Institutions: Two Approaches. *International Studies Quarterly* 32(4): 397-386.
- Keohane, R. and Nye, J. 2000. Globalisation: What's New? What's Not? (And So What?). *Foreign Policy*. No. 118. Pp.104-119.
- Kern, K. and Bulkeley, H. 2009. Cities, Europeanisation and Multilevel Governance: Governing Climate Change Through Transnational Municipal Networks. *Journal of Common Market Studies* 47(2): 309-332.
- King, A. 1976. Modes of Executive-Legislative Relations: Great Britain, France, and Germany. *Legislative Quarterly* 1(1):21.
- King, R. 2009. *Governing Universities Globally: Organisations, Regulation and Rankings*. Northampton, MA, USA: Edward Edgar.
- Klopott, M. 2013. "Restructuring of Environmental Management in Baltic Ports: Case of Poland." *Maritime Policy and Management* 40 (5): 439-450. DOI:10.1080/03088839.2013.798440.
- Knecht, R.W. 1994. A Commentary on the Institutional and Political Aspects of Regional Ocean Governance. *Ocean and Coastal Management* 24: 35-50.
- Kolařík, P., Šumpela, V. and Tomešová, J. 2014. European Union's Cohesion Policy – Diversity of the Multi-level Governance Concept: The Case Study of Three European States. *European Spatial Research and Policy* 21(2): 193-211.
- Kolk, A. and Van Der Veen, M. 2002. Dilemmas of Balancing Organisational and Public Interests: How Environment Affects Strategy in Dutch Main Ports. *European Management Journal* 20(1): 45-54.
- KPMG. 2014. *Oil and Gas in Africa: Reserves, Potential and Prospects of Africa*. KPMG Africa Limited.
- Krippendorff, K. and Bock, M.A. (Eds.). 2008. *The Content Analysis Reader*. Thousand Oaks: Sage Publishing.

- Kumar, R. 2014. *Research Methodology: A Step-by-Step Guide for Beginners*. London: Sage.
- Kuyper, J.W., and Bäckstrand, K. 2016. Accountability and Representation: Non-state Actors in UN Climate Diplomacy. *Global Environmental Politics* 16(2): 61-81.
- La Porta, R., Lopez-de-Silvas, F., Scheifer, A., and Avishnu, R.W. (LLSV). 1999. "The Quality of Government." *Journal of Law, Economics and Organisation* 15: 222-279. DOI:10.1093/jleo/15.1.222.
- Lam, J.S.L., and van De Voorde, E. 2012. "Green Port Strategy for Sustainable Growth and Development." In *Transport Logistics for Sustainable Growth at a New Level, Proceedings of the International Forum on Shipping, Ports and Airports (IFSPA): 27-30*. Yip, T. L., Fu, X., and Ng, K. Y. (Eds.). Hong Kong: The Hong Kong Polytechnic University.
- Lam, J.S.L. and Notteboom. T. 2014. "The Greening of Ports: A Comparison of Port Management Tools Used by Leading Ports in Asia and Europe." *Transport Reviews* 34 (2): 169-189. DOI:10.1080/01441647.2014.891162.
- Leigh, D. 2009. Revealed: Trafigura—commissioned Report into Dumped Toxic Waste. *The Guardian*. <https://theguardian.com/world/2009/oct/17/tarfigura-minton-report-revealed>. Accessed 15/05/2018.
- Lewin, K. 1946. Action Research and Minority Problems. *Journal of Social Issues* 2(4): 34-46.
- Liefferink, D. 2006. The Dynamics of Policy Arrangements: Turning Round the Tetrahedron. In: *Institutional Dynamics in Environmental Governance*. Arts, B. and Leroy, P. (Eds.). Dordrecht: Springer.
- Lobell, D.B., Bänziger, M., Magorokosho, C. and Vivek, B. 2011. Non-Linear Heat Effects on African Maize as Evidenced by Historical Yield Trials. *Nature Climate Change* 1: 42-45. DOI: 10.1038/NCLIMATE 1043.
- Lockwood, M., Davidson, J., Curtis, A., Stratford, E., and Griffith, R. 2010. Governance Principles for Natural Resource Management. *Society and Natural Resources* 23(10):986-1001.
- Longhurst, R. 2003. Semi-structured Interviews and Focus Groups. In: *Key Methods in Geography (3rd Edition)*. Clifford, N., Cope, M., and Gillespie, T. (Eds.): 117-132. London: Sage.
- Lou, M., and Yip, T. L. 2013. "Ports and the Environment." *Maritime Policy and Management* 40 (5): 401–403. DOI:10.1080/03088839.2013.797122.
- Lundy, O., Cowling, A. 1996. *Strategic Human Resource Management*. London: Routledge.

- Lüscher, L.S., Lewis, M.W. 2008. Organizational Change and Managerial Sense-Making: Working Through Paradox. *Academy of Management Journal* 51 (2): 221-240.
- Mahajan, V. 2009. *Africa Rising: How 900,000 African Consumers Offer More Than You Think*. USA: Pearson Education Inc.
- Maitlis, S., Christianson, M. 2014. Sense-Making in Organizations: Taking Stock and Moving Forward, *Academy of Management Annals* 8: 57-125.
- March, J.G. and Olsen, J.P. 1998. The Institutional Dynamics of International Political Orders. *International Organisation* 52(4): 943-969.
- Marks, G. 1996. An Actor-Centred Approach to Multi-Level Governance. *Regional and Federal Studies* 6(2): 20-38.
- Martins, E.C. and Terblanche, F. 2003. Building Organizational Culture that Stimulates Creativity and Innovation. *European Journal of Innovation Management* 6 (1): 64-74.
- Mason, J. 2002. *Qualitative Researching* (2nd Edition). London/Thousand Oaks: Sage Publishing.
- Mbendi. 2012. Oil and Gas in Cote d'Ivoire: Overview. www.mbendi.com Accessed 25/10/2016.
- Meyer, J.P. and Herscovitch, L. 2001. Commitment in the Workplace: Toward a General Model. *Human Resource Management Review* 11 (3): 299-326.
- Michailof, S. 2013. Africa 2050: Jobs and Prosperity in a Multipolar Global Economy – Moving Out of Fragility and Conflict. *Global Journal of Emerging Market Economies* 5(2): 117-149.
- Miles, E.L., Underdal, A., Andresen, S., Wetterstad, J., Skjærseth, J.B. and Carlin, E.M. (Eds.). 2001. *Environmental Regime Effectiveness: Confronting Theory with Evidence*. Cambridge, MA: MIT Press.
- Mills, J.H., Thurlow, A., and Mills, A. 2010. Making Sense of Sense-Making: The Critical Sense-Making Approach. *Qualitative Research in Organisations and Management* 5 (2): 182-195.
- Mol, A.P.J. 2001. *Globalisation and Environmental Reform*. Cambridge, MA: MIT Press.
- Mol, A.P.J. 2002. "Ecological Modernisation and the Global Economy." *Global Environmental Politics* 2 (2): 92-115. DOI: 10.1162/15263800260047844.
- Mol, A.P.J., and Sonnenfeld, D.A. 2000. "Ecological Modernisation around the World: An Introduction." *Environmental Politics* 9 (1): 3-16.
- Mol, A.P.J., and Spaargaren, G. 2000. "Ecological Modernisation Theory in Debate: A Review." *Environmental Politics* 9 (1): 17-47.

- Monios, J. and Wilmsmeier, G. 2012. Giving a Direction to Ports Regionalisation. *Transportation Research Part A* 46: 1551-1561.
- Mundus Maris. 2013. Report of the Regional Coastal and Marine Forum: 7th Edition. Belgium: Mundus Maris.
- Nauke, M. 1992. International Maritime Organisation Keynote Address in 'Proceedings for IMO/ESCAP Seminar on Environmentally Sound Port Development and Management'. August 31 – September 4, 1992 in Yokohama. New York: UN Publication: 17.
- Neuman, W.L. 2000. *Social Research Methods: Qualitative and Quantitative Approaches* (4th Edition). Boston: Allyn and Bacon Publishing.
- Neustadt, R. 1990. *Presidential Power and the Modern Presidents*. New York: Free Press.
- Ng, A.K.Y., Hall, P., and Pallis, A.A. 2013. "Guest Editors' Introduction: Institutions and the Transformation of Transport Nodes." *Journal of Transport Geography* 27: 1-3. DOI:10.1016/j.jtrangeo.2012.08.010.
- North, D. 2005. *Understanding the Process of Economic Change*. Princeton, NJ: Princeton University Press.
- Notteboom, T. 2011. "An Application of Multi-Criteria Analysis to the Location of a Container Hub in South Africa." *Maritime Policy and Management* 38 (1): 51-79. DOI:10.1080/03088839.2010.533710.
- Ocean Shipping Consultants. 2009. *Beyond the Bottlenecks: Ports in Africa*. AICD Background Paper 8, Africa Region. Washington D.C.: World Bank.
- Ognibene, L. 2007. "Dumping of Toxic Waste in Cote D'ivoire – the International Framework." *Environmental Policy and Law* 37 (1): 31-44.
- Ojesanmi, A.S., Ohimain, E.I., and Inyang, I.R. 2016. Preliminary Review of Ballast Water Legal Framework and Processes in Nigeria. *IOSR Journal of Environmental Science, Toxicology and Food Technology* 10(2): 46-51.
- Okereke, C., Bulkeley, H., and Schroeder, H. 2009. Conceptualizing Climate Governance Beyond the International Regime. *Global Environmental Politics* 9(1): 58-78.
- Ottaway, M. 2003. *Democracy Challenged: The Rise of Semi-Authoritarianism*. Washington D.C.: Carnegie.
- Oxman, B. 1999. Sub-regional, Regional and International Co-operation in Responding to and Deterring Transboundary Marine Pollution. *Singapore Journal of International and Comparative Law* 3:401-428.
- Paavola, J. 2007. Institutions and Environmental Governance: A Reconceptualization. *Ecological Economics* 63(1): 93-103.

- Pálsson, G., Harding, A., and Raballan, G. 2007. Port and Maritime Transport Challenges in West and Central Africa. Sub-Saharan Africa Transport Policy Programme (SSATP) Working Paper No. 84, Washington DC: World Bank.
- Papadopoulos, Y. 2010. Accountability and Multi-level Governance: More Accountability, less Democracy? *West European Politics* 33(3): 1030-1049.
- Pattberg, P. 2012. Transnational Environmental Regimes. In: *Global Environmental Governance Reconsidered*. Biermann, F. and Pattberg, P. (Eds.): 97-121. Cambridge, MA: MIT Press.
- Pattberg, P. and Stripple, J. 2008. Beyond the Public and Private Divide: Remapping Transnational Climate Governance in the 21st Century. *International Environmental Agreements: Politics, Law and Economics* 8: 367-388.
- Pattberg, P., Betsil, M., and Della, E. (Eds.) 2011. Agency in Earth System Governance. Special Issue of *International Environmental Agreements: Politics, Law and Economics* 11(1).
- Pearl, R., Rich, J. and Masia, M. 1999. Sub-Saharan Africa Multilateral Programmes for Coastal Management: How Well Have They Performed? *Ocean and Coastal Management* 42: 791-813.
- Pennings, P., Keman, H. and Kleinnijenhuis, J. 2006. *Doing Research in Political Science: An Introduction to Comparative Methods and Statistics*. London: Sage Publications.
- PESN, 2005. Minutes of Inauguration of Port Environment and Safety Network (PESN). Tema: Ghana Ports and Harbours Authority.
- Port Reception Facility (PRF) Guidelines. Not dated. Tema: Ghana Ports and Harbours Authority.
- Polidoro, B.A., Ralph, G.M., Strongin, K., et al. 2017. The Status of Marine Biodiversity in The Eastern Central Atlantic (West and Central Africa). *Aquatic Conservation: Marine Freshwater Ecosystems*: 1-14. DOI:10.1002/aqc.2744.
- Pollack, M.A. 1997. Delegation, Agency, and Agenda Setting in the European Community. *International Organisation* 51(1): 99-134.
- Port Finance International (PFI). 2014. GPHA Secures \$1.5bn for Tema Port Expansion. [http://portfinanceinternational.com/categories/finance-deals/item/1852-gpha-secures-\\$1-5bn-for-tema-port-expansion](http://portfinanceinternational.com/categories/finance-deals/item/1852-gpha-secures-$1-5bn-for-tema-port-expansion). Accessed 10/02/2018.
- Port Management Association of West and Central Africa (PMAWCA). 1972. Minutes of Inaugural Assembly, October 1972, Freetown, Sierra Leone.
- Port Management Association of West and Central Africa (PMAWCA). 2015. Minutes of 37th Annual Council Meeting and 13th Round Table Conference of Managing Directors. 29th June - 2nd July, Abidjan, Ivory Coast.

- Ports Environmental Network-Africa (PENAf). 2010. Declaration and Press Release: First West and Central Africa Ports Environment Conference. Tema: PENAf.
- Puig, M., Wooldridge, C., Michail, A. and Darbra, R.M. 2015. Current Status and Trends of the Environmental Performance in European Ports. *Environmental Science and Policy* 48: 57-66.
- Radelet, S. 2010a. *Emerging Africa: How 17 Countries Are Leading The Way*. Washington DC: Centre for Global Development.
- Radelet, S. 2010b. Success Stories from 'Emerging Africa'. *Journal of Democracy* 21(4): 87-100.
- Raustiala, K. 1997. Domestic Institutions and International Cooperation: Comparative Responses to the Convention on Biological Diversity. *World Politics* 49 (4): 482-509. John Hopkins University Press.
- Reason, P. and Bradbury, H. 2001. *The SAGE Handbook of Action Research: Participative Inquiry and Practice*. London: Sage Publishing.
- Reed, M.G. and Bruyneel, S. 2010. Rescaling Environmental Governance, Rethinking the State: A Three-Dimensional Review. *Progress in Human Geography* 1-8.
- Reed, M.S. 2008. Stakeholder Participation in Environmental Management: A Literature Review. *Biological Conservation* 141: 2417-2431.
- Richards, C., Blackstock, K.L., and Carter, C.E. 2004. *Practical Approaches to Participation*. SERG Policy Brief No. 1. Macauley Land Use Research Institute, Aberdeen.
- Risse-Kappen, T. 1995. *Co-operation Among Democracies: The European Influence on US Foreign Policy*. Princeton, NJ: Princeton University Press.
- Robbins, S., Judge, T.A., Millet, B., and Boyle, M. 2014. *Organizational Behaviour* (7th Ed.). Australia: Pearson Australia Group.
- Rousseau, D. 1995. *Psychological Contract in Organizations: Understanding Written and Unwritten Agreements*. Newbury Park, CA: Sage.
- Sakyi, D. and Opoku, E.E.O. 2014. Regionalism and Economic Integration in Africa: A Conceptual and Theoretical Perspective. African Capacity Building Foundation (ACBF) Occasional Paper No 22. Harare, Zimbabwe: ACBF.
- Salancik, G.R. 1997. Commitment is Too Easy. *Organizational Dynamics*. Summer 1997, American Management Associations: 62-80.
- Sandberg, J. and Tsoukas, H. 2014. Making Sense of the Sense-Making Perspective: Its Constituents, Limitations, and Opportunities for Further Development. *Journal of Organisational Behaviour*. <http://doi.org/10.1002/job.1937>

- Schlenker, W. and Lobell, D.B. 2010. Robust Negative Impacts of Climate Change on African Agriculture. *Environmental Research Letters* 5(1): 1-8.
- Seguí, X., Puig, M., Quintieri, E., Wooldridge, C., Darbra, R.M. 2016. New Environmental Performance Baseline for Inland Ports: A Benchmark for the European Inland Port Sector. *Environmental Science Policy* 58: 29-40.
- Shutz, A. 1967. *The Phenomenology of the Social World*. Evanston, Illinois: Northwestern University Press.
- Silverman, D. 2006. *Interpreting Qualitative Data (3rd Edition)*. London: Sage Publications.
- Sislian, L., Jaegler, A., and Cariou, P. 2016. A Literature Review on Port Sustainability and Ocean's Carrier Network Problem. *Research in Transportation Business and Management* 19: 19-26.
- Slack, B. and Frémont, A. 2005. Transformation of Port terminal Operations: From the Local to the Global. *Transport Reviews* 25(1): 117-130.
- Slaughter, A-M. 2000. Governing the Global Economy Through Government Networks. In: *The Role of Law in International Politics: Essays in International Relations and International Law*. Edited by Byers, M. Oxford: Oxford University Press. Pp. 177-205.
- Snook, S.A. 2002. *Friendly Fire: The Accidental Shoot Down of US Black Hawks Over Northern Iraq*. Princeton, NJ: Princeton University Press.
- Soma, K., Van Tatenhove, J.P.M., and Van Leeuwen, J. 2015. Marine Governance in a European Context: Regionalisation, Integration and Co-operation for Ecosystem-Based Management. *Ocean and Coastal Management* 117(2015): 4-13.
- Sonnenfeld, D.A., 2002. "Social Movements and Ecological Modernisation: The Transformation, of Pulp and Paper Manufacturing." *Development and Change* 33 (1): 1-27. DOI:10.1111/1467-7660.00238.
- Spaargaren, G. and Mol, A.P.J. 2006. Towards a Sociology of Flows: A New Agenda for Twenty-First Century Environmental Sociology. In: *Governing Environmental Flows: Global Challenges to Social Theory*. Spaargaren, G., Arthur, P.J.M, and Buttel, F.H. (Eds.): 39-82. Cambridge, MA: MIT Press.
- Stavrakouli, S. and Wooldridge, C. 2004. Current Status of Port Environmental Management. Presented at International Conference for the Protection and Restoration of the Environment VII, Mykonos, Greece. 28 June – 1 July 2004.
- Stilgoe, J., Owen, R., and Macnaghten, P. 2013. Developing a Framework for Responsible Innovation. *Research Policy* 42: 1568-1580.
- Swindler, A. 2002. Cultural Repertoires and Cultural Logics: Can They Be Reconciled? *Comparative Historical Sociology* 14: 1-6.

- Taylor, J.R. and Van Every, E.J. 2000. *The Emergent Organization: Communication as its Site and Surface*. Mahwah, NJ: Erlbaum.
- Termeer, C.J.A.M. and Van den Brink, M.A. 2013. Organizational Conditions for Dealing with the Unknown Unknown: Illustrated by how a Dutch Water Management Authority is Preparing for Climate Change. *Journal of Public Review* 15 (1): 43-62.
- This Day. 2013. Reform: NPA Redefines Roles Under Landlord Port Model. <http://www.thisdaylive.com/articles> Accessed January 28, 2015.
- Thomas, G. 2011. A Typology for the Case Study in Social Science Following a Review of Definition, Discourse, and Structure. *Qualitative Inquiry* 17: 511-521.
- Transboundary Pollution Management in the Guinea Current Guinea Region of West and Central Africa. *Ocean and Coastal Management* 53(9): 493-506.
- Trujillo, L., González, M.M. and Jiménez, J.L. 2013. An Overview on the Reform Process of African Ports. *Utilities Policy* 25: 12-22.
- Ugboma, C., Ogwude, I.C., Ogochukwu, U., and Nnadi, K. 2007. "Service Quality and Satisfaction Measures in Nigerian Ports: An Exploration." *Maritime Policy and Management* 34 (4): 331-346. DOI: 10.1080/03088830701539073.
- Ukwe, C.N. and Ibe, C.A. 2010. A Regional Collaborative Approach in Transboundary Pollution Management in the Guinea Current Region of West and Central Africa. *Ocean and Coastal Management* 53(9):493-506.
- Ukwe, C.N., Ibe, C.A., and Sherman, K. 2006. A Sixteen-Country Mobilization for the Sustainable Fisheries in the Guinea Current Large Marine Ecosystem. *Ocean and Coastal Management* 49(7-8): 385-412.
- UNCTAD. 1999. *The Fourth Generation Port: Technical Note*. UNCTAD Ports Newsletter 19: 9-12. Geneva: UNCTAD.
- UNCTAD. 2003. *African Ports: Reform and the Role of the Private Sector*. UNCTAD/SDTE/TLB/5.582.
- UNEP. 1981. *Article of the Convention for Cooperation in the Protection and Development of the Marine and Coastal Environment of the West and Central African Region (Abidjan Convention)*. New York: United Nations.
- UNEP. 2005a. *Report of a Comprehensive Review and Strategy Document for Abidjan Convention (Final Draft)*. By Waruinge, D., Project Manager, Regional Seas Programme, UNEP, based on the work of Emmanuel Ajao, UNEP Consultant. Nairobi: UNEP.
- UNEP. 2005b. *Report of Seventh Meeting of the Contracting Parties to the Convention for the Cooperation in the Protection and Development of the Marine and Coastal Environment of West and Central Africa Region*. UNEP(DEC)/WAF/CP.7/8. Libreville, Gabon, 22-23 March 2005.

- UNEP. 2008a. Report of Eight Meeting of the Contracting Parties to the Convention on Co-operation for the Protection and Development of the Marine Environment and Coastal Areas of the Atlantic Coast of the West, Central and Southern Africa Region. UNEP(DEPI)/WAF/CP.8/10. Johannesburg, South Africa, 5-8 November 2007.
- UNEP. 2008b. Report of the Seventh Meeting of the Contracting Parties to the Convention on Co-operation for the Protection and Development of the Marine Environment and Coastal Areas of the Atlantic Coast of the West, Central and Southern Africa Region. UNEP(DEPI)/WAF/CP.8/10. Johannesburg, South Africa, 5-8 November 2007.
- UNEP. 2009. Report of the First Extraordinary Meeting of the Contracting Parties to the Abidjan Convention. UNEP(DEPI)/WAF/SS.1/2. Johannesburg, South Africa, 9-10 June 2008.
- UNEP. 2011a. Report of Ninth Meeting of the Contracting Parties to the Convention for the Cooperation in the Protection and Development of the Marine and Coastal Environment of West and Central Africa Region. UNEP(DEPI)/WACAF/COP.9/10. Accra, Ghana, 28 March-1 April 2011.
- UNEP. 2011b. Regional Oil Spill Contingency Plan for West and Central Africa. Abidjan: UNEP.
- UNEP(DEPI)/WACAF/COP.9/10. Accra, Ghana, 28 March-1 April, 2011.
- UNEP. 2012. Memorandum of Understanding Between Abidjan Convention Secretariat and PENAf. UNEP/MOU/DEPI/2012/FMEB-Abidjan Convention/003.
- UNEP. 2012a. Report of Tenth Meeting of the Contracting Parties to the Convention on Co-operation for the Protection and Development of the Marine Environment and Coastal Areas of the Atlantic Coast of the West, Central and Southern Africa Region. UNEP[DEPI]/WACAF/COP.10/12. Pointe Noire, Republic of Congo, 12-16 November 2012.
- UNEP. 2015. Declaration, First Panel of Experts Meeting on the Strategic Assessment of Port Environmental Issues, Policies and Programmes (SAPEIPP) in West, Central and Southern Africa, 5-7 May 2015, Abidjan, Ivory Coast. Abidjan: UNEP.
- Van der Heijden, A., Cramer, J.M., and Driessen, P.P.J. 2012. Change Agent Sense-Making for Sustainability in a Multinational Subsidiary. *Journal of Organisational Management* 25 (4): 535-559.
- Van der Zouwen, M. 2006. Nature Policy Between Trends and Traditions. PhD Thesis, Wageningen University, Wageningen.
- Van Dyck, G.K. 2015. Assessment of Port Efficiency in West Africa Using Data

- Envelopment Analysis. *American Journal of Industrial and Business Management* 5: 208-218. <http://dx.doi.org/10.4236/ajibm.2015.54023>.
- Van Gils, M. and Klijn, E-H. 2007. Complexity in Decision Making: The Case of the Rotterdam Harbour Expansion. *Connecting Decisions, Arenas and Actors in Spatial Decision Making. Planning Theory* 8(2): 139-159.
- Van Leeuwen, J. 2010. *Who Greens the Waves? Changing Authority in the Environmental Governance of Shipping and Offshore Oil and Gas Production*. PhD Thesis, Wageningen University, Wageningen.
- Van Tatenhove, J. and Leroy, P. 2000. The Institutionalization of Environmental Politics. In: *Political Modernization and the Environment*. Van Tatenhove, J., Arts, B., and Leroy, P. (Eds.): 17-23. Dordrecht: Kluwer Academic Publications.
- Van Tatenhove, J., Arts, B., and Leroy, P. (Eds.) 2000. *Political Modernisation and the Environment: The Renewal of Policy Arrangements*. Dordrecht: Kluwer Academic Publishers.
- Van Tatenhove, J.P.M. and Leroy, P. 2003. Environment and Participation in a Context of Political Modernisation. *Environmental Values* 12: 155-174.
- Van Wingerde, K. 2015. The Limits of Environmental Regulation in a Globalised Economy. In: *The Routledge Handbook of White-Collar and Corporate Crime in Europe*. Edited by Van Erp, J., Huisman, W., and Vande Walle, G. London/New York: Routledge.
- Varjopuro, R., Gray, T., Hatchard, J., Rauschmayer, F., and Wittmer, H. 2008. Introduction: Interaction Between Environment and Fisheries – The Role of Stakeholder Participation. *Marine Policy* 32: 147-157.
- Verhoeven, P. 2009. “European Ports Policy: Meeting Contemporary Governance Challenges.” *Maritime Policy and Management* 36 (1): 79-101. DOI:10.1080/03088830802652320.
- Verhoeven, P. 2010. A Review of Port Authority Functions: Towards A Renaissance? *Maritime Policy and Management* 37(3): 247-270.
- Von Schomberg, R. 2011. ‘Prospects for Technology Assessment in a Framework of Responsible Research and Innovation’. In: *Technikfolgen abschätzen lehren. Bildungspotenziale transdisziplinärer Methoden*. Edited by Dusseldorp, M. and Beecroft, R. New York: Springer. Pp. 39–61.
- Wallace, H. 2000. The Institutional Setting: Five Variations on a Theme. In: *Policy-Making in the European Union (4th Edition)*. Wallace, H. and Wallace, W. (Eds.): 3-37. Oxford: Oxford University Press.
- Weale, A. 1992. *The New Politics of Pollution*. Oxford: Manchester University Press.
- Weber, K.E. and Glynn, M.A. 2006. Making Sense with Institutions: Context, Thought and Action in Karl Weick’s Theory. *Organisation Studies* 27 (11): 1639-1660.

- Weber, K.E. 2003. Does Globalization Lead to Convergence? The Evolution of Organizations' Cultural Repertoires in the Biomedical Industry (Dissertation). Ann Arbor MI: University of Michigan.
- Weick, K.E. 1993. The Collapse of Sense-Making in Organizations: The Mann Gulch Disaster. *Administrative Science Quarterly* 38(4): 628-652. Cornell: Sage Publications.
- Weick, K.E. 1995. *Sense Making in Organizations*. Thousand Oaks, CA: Sage Publications.
- Weick, K.E. 1998. Enacted Sense-Making in Crises Situations. *Journal of Management Studies* 25 (4): 305-317.
- Weick, K.E. 2003. *Making Sense of Organizations*. Malden: Blackwell Publishing.
- Weick, K.E. 2009. *Making Sense of the Organization: The Impermanent Organization*. Sussex: Wiley.
- Weick, K.E. and Sutcliffe, K.M. 2001. *Managing the Unexpected: Assuring High Performance in Age of Complexity*. San Francisco, CA: Jossey-Bass.
- Weick, K.E., Sutcliffe, K.M., and Obstfeld, D. 2005. Organizing and the Process of Sense-Making. *Organisational Science* 16 (4): 409-421.
- Widerberg, Oscar and Van Laerhoven, 2014. Measuring the Autonomous Influence of an International Bureaucracy: The Division for Sustainable Development. *International Environmental Agreements* 14: 303-327.
- Wordon, Q.T., Tsimpo, C., Backiny-Yetna, P., Joseph, G., Adoho, F. and Coulombe, H. 2008. Potential Impact of Higher Food Prices on Poverty: Summary Estimates for a Dozen West and Central African Countries. World Bank Policy Research Working Paper No. 4745.
- Wood, G. and P. Dibben. 2005. "Ports and Shipping in Mozambique: Current Concerns and Policy Options." *Maritime Policy & Management* 32 (2): 139-157. DOI: 10.1080/03088830500062707.
- Wood, I.A. and Kroger, R.O. 2000. *Doing Discourse Analysis: Methods for Studying Action in Talk and Text*. Thousand Oaks: Sage Publications.
- Wooldridge, C. and Stojanovic, T. 2004. Integrated Environmental Management of Ports and Harbours: The European Experience – From Policy to Practice. In: *Shipping and Ports in the Twenty-First Century*. Edited by Pinder, D and Slack, B. Pp. 191-211. London: Routledge.
- Wooldridge, C. F., McMullen, C., and Howe, V. 1999. "Environmental Management of Ports and harbours: Implementation of Policy through Scientific Monitoring." *Marine Policy* 23 (4-5): 413-425. DOI: 10.1016/S0308-597X(98)00055-4.
- World Bank. 2007. *The World Bank Port Reform Toolkit*. Second ed. Washington, DC: The World Bank Group.

- World Bank 2017. *Global Economic Prospects: A Fragile Economy*. Washington DC: World Bank.
- Yap, W.Y. and Lam, J.S.L. 2013. 80 Million-Twenty-Foot-Equivalent-Unit Container Port? Sustainability Issues in Port and Coastal Development. *Ocean & Coastal Management* 71: 13-15.
- Yin, R.K. 2009. *Case Study Research: Design and Methods* (4th Edition). London: Sage Publications.
- Young, O.R. 1982. *Resource Regime Rights: Natural Resources and Social Institutions*. CA: University of California Press.
- Young, O.R. 1994. *International Environmental Governance. Protecting the Environment in a Stateless Society*. Ithaca, N Y: Cornell University Press.
- Young, O.R. (Ed.). 1997. *Global Governance: Drawing Insights from the Environmental Experience*. Ithaca, NY: Cornell University Press.
- Young, S.C. 2000. *The Emergence of Ecological Modernisation: Integrating the Environment and the Economy?* London: Routledge.
- Zimmerer, K.S. 2006. *Globalisation and New Geographies of Conservation*. Chicago: University of Chicago Press.

Summary

Environmental policy and governance for ports is a new field for ports. Even for advanced ports as those in Europe, it was not until the last two decades or so, towards the end of the twentieth century, when environment began to receive attention. For West and Central Africa, environment for the ports is even newer and critical. This is especially so as West and Central African economies, like the rest of Africa, seem to be growing faster than the capacity needed for sustaining the growth. While efficient ports are vital to the economic growth of West and Central Africa region, the related port operations – cargo handling in port areas, shipping traffic and hinterland connection – is associated with a number of negative environmental impacts. Addressing the region's port environmental problems could not only be the key to the sustainable development of the ports, but also the successful future of the region. The idea is that balancing port operations with environmental considerations is a necessary precondition for healthy port development and will also lead to investor confidence in attracting the needed private capital.

The opening chapter of the thesis shows that West and Central African ports acknowledge environmental threats from their development and operations, and as they strive to become efficient and competitive. They are therefore taking up environmental role and responsibility. The challenge for them however, is that they find themselves with an environmental burden of unequal distribution and demands. They have to deal with global environmental flows and effects, particularly, from shipping that they have not contributed to. In the midst of this, globalisation trends and processes are affecting changing the role of the ports in environmental policy-making. Economic globalisation has brought about increasing public-private partnership in the ports, with multinational terminal operators. Similarly, environmental globalisation is making the multinational terminal operators bring along environmental knowledge, technology and practices. Additionally, developments from the regional level based on regional seas arrangements is also bringing about environmental attention to the ports as a way of strengthening the implementation of regional environmental regulations and policies. Together, economic and environmental globalisation are influencing and changing the environmental setting of West and Central African ports and transforming environmental governance for the ports.

The central aim of the thesis is to contribute to a better understanding of the institutional dynamics of port environmental governance with a focus on the multiple level governance setting for West and Central African ports. To organise the analysis, four empirical situational contexts – sub-national (local), national, regional, and their interplay – within a global setting are identified. To come to grips with environmental

policy processes in each context, they are each marched with different sets of theoretical perspectives as analytical lenses, and constituted into a chapter of the thesis. Five ports and their individual institutional settings together with their regional setting are used as case studies.

Chapter two takes up the sub-national (local) empirical context of environmental change at the level of the ports in West and Central African. The context is analysed using sense-making and institutions perspectives. It discusses the institutionalisation process of how economic activities of West and Central African ports are harmonised with environmental considerations. The Freeport of Monrovia is used as a case. The analysis reveals that turning the emergent globalising 'green port' phenomenon into business reality by ports and institutionalising it is dependent on the dynamics of local and specific situational context of ports. It also reveals the dynamic interplay of sense-making and institutions. It shows how in an integrative way, sense-making process influences institutions and, vice-versa, institutions influence sense-making.

In chapter three, the national empirical context is analysed using perspectives of ecological modernisation. Environmental reform process of four ports – Abidjan, Douala, Lagos, and Tema – are compared. Findings reveal a gradual but fragmented and limited process of environmental reform is emerging in the ports, with a changing role of the state, growing involvement of the port authorities and private economic actors with economic incentives, and shifting role for civil societal actors. The extent and pathways for the reform are determined by the varying national politico-administrative arrangements for the ports that are rooted in colonial legacies of the individual states. It becomes evident that environmental reform of West and Central African ports follow from globalisation trends, but it cannot be adequately understood without taking into account national historical trajectories.

Chapter four analyses regional influence on the environmental reform of West and Central African ports. It focuses on the regional co-ordination unit of the Abidjan Conversion, as a regional (international) bureaucracy. Three theoretical perspectives – international bureaucracies, domestic regulatory-politics, and transnational governance – are complemented as analytical lens. Findings show that the influence of international bureaucracies cannot be adequately understood through factors internal to their organisation alone. External factors of political institution of states that international bureaucracies work with, and the role of non-state actors relevant for the implementation of multilateral environmental agreements must also be included. The chapter shows that the influence of the regional co-ordination unit, as a regional (international) bureaucracy, on environmental reform of West and Central African ports cannot be measured directly. But the unit's autonomy-centred efforts, as are quite strong. This is however, constrained negatively by conventional state-

centric responsibility for implementation of multilateral environmental agreements even though states lack the political will and commitment. Nonetheless, increasing role and relevance for non-state actors and approaches in transnational governance offer potential for harnessing the efforts and influence of the regional co-ordination unit. The study therefore brings transnational governance to light as an essential arena for additional focus for an adequate understanding the influence of international (regional) bureaucracies.

Chapter five explores the interplay of the three empirical contexts analysed in chapters two, three and four, as an empirical context of multiple level interplay. Perspectives on policy arrangements and convergence are used for analysis. The chapters finds that the ports largely absent in existing statist environmental policy arrangements. However, this is beginning to change as the port authorities from sub-national (local) level of the different states and the regional co-ordination unit from regional level are beginning to engage directly and including cross-border societal actor, the ENGO, PENAf with interest in the environmental health of African ports. The direct interaction between the multiple actors form sub-national and regional levels subverts the national level of the states. It however does include state actors in interactions, but as one actor and not dominant. The chapter reveals that environmental governance for West Central African ports is transforming with an emergent innovative joint policy-making arrangement among multiple actors from multiple levels of governance across multiple states aimed at addressing port environmental problems in West and Central Africa. The emergence is a regional port environmental co-operation that is seeking to converge environmental policy across West and Central African ports in a harmonised and coherent manner. Findings reveal the potential of non-state actors innovating to overcome unfavourable diverse statist politics in dealing with transboundary environmental issues in a territorial region. It furthermore reveals state actors remain the linking pin in transboundary environment policy and governance.

The final chapter, chapter six, summarises findings of the chapters on the empirical situational contexts one-by-one to concisely answer their respective sub-research questions, and then synthesises them to answer the central research question. It distils and highlights insights that underpin conclusions from findings on transformational processes for environmental policy and governance in West and Central African ports. Firstly, it is concluded that global concepts, ideas and actors are influencing the organisation and institutionalisation of environmental change in West and Central Africa ports, and yet, not homogenising them. Secondly, the heterogeneity of environmental of the ports, even though influenced by globalisation, is confirmed by its mediation by varying predominant national institutional structures. Thirdly, regional institutions are shaping environmental

governance for West and Central African ports, but here, also the embeddedness of state institutional locus and standing inhibits the influence. Fourthly, there is an emergent shifting in the environmental governance of West and Central African ports that circumvents the national level but does not escape state actors.

Together, the four foregoing conclusions highlight institutional underpinnings for understanding factors that enable or constrain the transformation of environmental policy and governance for West and Central African ports, but also the potential opportunities for enhancing it.

Acknowledgement

My PhD trajectory has been a very turbulent one. It has been a rough ride right from the onset, when I openly declared my interest in pursuing an academic path, to this point where I am having to defend my thesis. I knew it was going to be tough, but unimaginably anywhere near the setbacks and challenges I had to endure - ill health, cognitive, financial, family among others. But thankfully, in all of these, a supportive environment did not elude me. Completing this PhD thesis has been possible with the immense help, support, patience, encouragement, trust and confidence reposed in me by highly placed persons, who never gave up on me and refused to let me quit. These persons, to whom I am greatly indebted, are too numerous to count and I am afraid I am unable to acknowledge and appreciate them all in this limited space.

First and foremost, I kindly wish to express my profound gratitude to my promotors, Prof. Arthur Mol and Prof. Jan van Tatenhove and co-promotor, Dr. Kris van Koppen, who were there with me in every step of the journey – generating ideas, adapting theoretical perspectives, writing, in sickness, dealing with emotions and more. Their invaluable guidance, ideas and feedback helped improve my work greatly. I am particularly thankful to Prof. Arthur Mol for giving me the opportunity to enrol in the PhD programme with the Environmental Policy Group. His sustained interest despite his busy schedule in becoming the Rector of Wageningen University was symbolic of unwavering commitment, for which I will be eternally grateful. Working with Prof. Jan van Tatenhove was such a delight. I used to admire him and his work on marine governance and desired a much closer rapport. This desire became fulfilled when he gladly accepted to be one of my promotors. The highpoint was his co-authoring my paper on sense-making and institutions. I learnt a lot from his endearment to institutional processes. In my struggle, calm assurances from Dr. Kris van Koppen, *‘Harry, as long as you are able to keep going, I will support you and I can say the same for Arthur and Jan’* were unbelievable to my ears as they were seemingly counterfactual to my ongoing reality. As a teacher, Kris provoked me to think. It was not until I had the opportunity of supervising an MSc student for her thesis, that I realised how much I had learnt from Kris. I could effortlessly see his approach running through my interaction with the student, as I found myself saying over and over to her in Kris’ words, *‘you can only learn to write well by writing’*.

I also will like to thank my two other co-authors, apart from my promotors and co-promotor, Prof. Katrien Termeer and Dr. Sylvia Karlsson-Vinkhuyzen, both of Public Administration and Policy, Wageningen University. They have such in-depth knowledge and understanding, with the willingness to share.

The Environmental Policy Group has indeed been a *‘home away from home’* during this PhD journey. I cannot forget the kindness, care and concern shown by the Group

during my years of struggle. The kind gesture of the Environmental Policy Group empowered and made me relentless with fortitude to press on. And in this respect, I salute the one and only Corry! She was supportive in providing all the administrative and logistical support that facilitated my long stay and writing of this thesis. Corry, I thank you very much! One pleasant surprise I experienced with the Environmental Policy Group was with Prof. Gert Spaargaren. I was informed one day during the last phase of my PhD that, Prof. Gert Spaargaren was looking for me. I panicked and wondered what it must be about, only for him to inform me that he wanted me to supervise an MSc student for her thesis. My response was, what, a professor of such huge stature has confidence in me? I am very grateful for that opportunity as it offered me a whole new experience. Prof. Peter Oosterveer, I do not intend to remind you of your pain. But I cannot gloss over the warmth, humour and friendliness of Susan (of blessed memory) and Tim. Of particular mention within the Environmental Policy Group, has been the ever dynamic, fun and inspiring PhD community. The social cohesion and good memories of our interactions and bonding, especially those with Judith Floor on that momentous meeting in front of the Leeuwenborch library; Hilde, Leah and Eira on sharing personal and other difficult challenges; and Marjanneke, together with her wonderful parents, will remain indelible on my mind. Some of the PhDs have already graduated and left: Natapol, Joeri, Linde, Belay, Agnes, Debasish, Kari, Aisa, Christine, Judith, Wenling, Jia, Chaohui, Kim, Dan, Sammy, Frederick, Kanang, Elisabeth, Martijn, Alice, Carolina, and Jenni. Others are still around: Phatra, Pamela, Nila, Frank, Robin, Jillian, Moises, Sayel, Mariska, Mandy, Ery, Sawitree, Jose, Nowella, Tabitha. Fan Yechao, you joined the group briefly and it was such a joy sharing an office. We shared stories and cooked together. What is more, you were able to convince and take me to a Chinese acupuncture for my back pain.

My special thanks goes to the Wageningen International Christian Fellowship and the Haarweg Connect Group as a source of joy and strength; K.D. Boateng, Rose Karikari-Anang, and Teresa Efua Ntim, for keeping faith and confidence in me and supporting my family; Ben Owusu-Mensah for the opportunity given me to work with Freeport of Monrovia, with the outcome of chapter two of this thesis; D.K. Ameley & Associates, for taking on that arduous task of representing me; James Essel, Ruth Yalley, Steve and Monica Hoek, and Peace Acquaaah, you cared for and opened your homes to me in the darkest of times; Henk Reitsma, Elly Monster, Marijke Dam and Weigcher, Justina Baidoo (Adom Mbroso), Capt. Georgina Joppap, and Hon. Kobla and Gifty Woyome, you stood with me; Dr. Hilde Tobi, together with Rob and Juree, you showed genuine friendship; Dr. Gabor Szanto, you took time to follow up on my progress, read some of my drafts and shared conversations over dinners; Baba Jamil Chehaita and Mohammad Chehaita, Alhaji Ali and Samia Masri, Juan Moreno, Alidu Diallo and Hadjia Memuna Adams,

Ebenezer and Francisca Oppan, Henry Ayikai Okine, Lydia Eshun, Pastor Samuel and Mary Agbozo, Pastor Suzzie Lamptey, Ebo and Nana Ama Ussher, Gladys Esi Ahenesiwa Hanson, Gordon and Agatha Anim, Capt. Kwame Addo and Kate Arthur, Maria Poku and Victoria Djoletto, and Samson Nibi; you all supported me in varying invaluable ways.

My gratitude also goes to El Hadji Mar Gueye and Michael Luguje (former and current Secretary General, respectively, of the Ports Management Association for West and Central Africa), Abou Bamba (Executive Coordinator, Regional Coordinating Unit of the Abidjan Convention, UNEP), Dr. Stephen Max Donkor, (former Executive Secretary of the Guinea Current Large Marine Ecosystem Project), interview respondents during my field work, and facilitators and participants of the meetings, workshops and conferences that generated primary data for this thesis. Without them, this thesis would not have been possible in the form it is for defence.

Finally, I wish to acknowledge my children, Lynette, Curtis, Kylene and Kyle, who through no fault of theirs had to endure the brunt of my decision to pursue a PhD and yet, urged me on. For this cause, I dedicate this thesis to them and trust it will inspire them to soar unto higher laurels!

Harry Barnes-Dabban
Wageningen, May 2018

Appendix 1: List of Interview/Questionnaire Respondents

Lagos		
No.	Interview respondent	Interview date
L1	Eng. Tunde, Safety Manager, Nigeria Ports Authority	15/03/10
L2	Afam Edozie, Environment Manager, Nigeria Ports Authority	15/03/10
L3	Joshua Asanga, Port Manager, Lagos Port Complex	15/03/10
L4	Mrs. Gowan, Director Marine Environment, Nigerian Maritime Administration and Safety Agency (NIMASA)	17/03/10
L5	Pollution Control Officer, Lagos Port Complex	17/03/10
L6	Kingsley Okoje, Head of Operations, African Circle Pollution Management Limited, Lagos Port Complex	17/03/10
L7	Capt. Ibrahim Olugbade, Marine Operations, Lagos Port Complex	18/03/10
L8	Olatubosum Ayodele Head of Health, Safety & Environment (HSE), APM Container Terminal, Lagos Port Complex	19/03/10
L9	Tunje Olaosun, Health Safety Security & Environment Manager, ENL General Cargo Terminal Lagos Port Complex	19/03/10
L10	Nigeria Shippers' Council	19/03/10
Douala		
D1	Nsahlai Athanasuis, Technical Adviser, Douala Port Authority	20/04/10
D2	Paul Folloh Mba, Research Officer/Deputy General Manager, Douala Port Authority	21/04/10
D3	Elizabeth Ngala Mbeng, Director, Cameroon National Shippers' Council	21/04/10
D4	Abdul Hakim, Director Operations, Douala Port Authority	21/04/10
D5	Getrude Mbai Inack, Head Marine Environment Protection, Department of Maritime Affairs and Inland Waterways	22/04/10

D6	Mireille Backo, Director Communications & Co-operation (also former Secretary General Port Management Association of West & Central Africa (PMAWCA), Douala Port Authority	22/04/10
D7	Andinwo Mah, Head Quality Health Safety & Environment, Bocom Recycling International (Waste Treatment)	22/04/10
D8	Etienne Nguegang, Delegate for Littoral Region; Ministry of Environment & Nature Protection	23/04/10
D9	Nyamale, Acting Harbour Master, Douala Port Authority	23/04/10
D10	Emile Njdele Nkongo, Health Security Safety & Environment Manager, Doula International Terminal (Container), Douala Port	23/04/10
D11	Owona Ondigui, Director General, National Ports Authority	27/04/10
D12	Prudence Galega, Technical Advisor, Ministry of Environment, Protection & Nature	27/04/10
D13	Patrick Kom Nguiffo, Health Security Safety & Environment Manager, Maersk Line, Cameroon	28/04/10
Abidjan		
A1	Prof. Delfin Abe Ochou, Director General Environment, Ministry of Environment, Forests & Water, Ivory Coast	20/07/10
A2	Kouassi Konon Anotole, Head Environment Affairs, Abidjan Port Authority	20/07/10
A4	Soulemame Bambara, Head of aquatic weeds control, Ivorian anti-pollution centre (CIAPOL)	22/07/10
A5	Sebastian Koffi Ouffoue, Director Central Environmental Laboratory, Ivorian anti-pollution centre (CIAPOL)	22/07/10
A6	Jacques Kouassi KOFFI, Director, National Environmental Agency (ANDE), Ivory Coast	22/07/10
A7	Joseph Tchriffou, Health Safety & Environment Coordinator, Abidjan Container Terminal, Abidjan Port	23/07/10
A8	Dibi Martin, Director & Focal Point Abidjan Convention (Marine Pollution), Ministry of Environment, Forests & Water, Ivory Coast	24/07/10
A9	Colonel Coffi, (Commandant du Port) Harbour Master, Abidjan Port	06/05/15

Tema		
T1	Bright Andy Berko, Snr Estate Officer, Port of Tema	16/06/10
T2	Larsey Mensah, Director – Legal, EPA, Ghana	20/06/10
T2	Ralph Kuuzegeh, Director, Ministry of Science, Env. & Technology, Ghana	20/06/10
T4	Daniel Amlalo, Deputy Executive Director, Environmental Protection Agency, Ghana	27/07/10
T5	Samuel Anku, Director, Inter-sectoral Networks, Environmental Protection Agency, Ghana	27/07/10
T6	John Pwamang, Director Chemicals, Environmental Protection Agency, Ghana	27/07/10
T7	Samuel Quaye, Deputy Director Legal, Ghana Maritime Authority, Ghana	28/07/10
T8	Adaangiak Akanteyam, Deputy Director, Inspections & Survey, Ghana Maritime Authority, Ghana	28/07/10
T9	Emmanuel Martey, Deputy Chief Executive, Ghana Shippers Authority, Ghana	28/07/10
T10	Cletus Kuzagbe, Operations Manager, Meridian Port Services (Container Terminal), Tema port	29/07/10
T11	James Ben Gaisie, Estate & Environment Manager, Port of Tema	29/07/10
T12	Captain James Owusu Koranteng; Harbour Master, Port of Tema	30/07/10
T13	Perpetual Osei Bonsu, Executive Secretary, Ship Owners & Agents Association, Ghana	30/07/10
T14	Toby Godwin Brown, Managing Director, Tilbury Environmental Group (TEG), Port Reception Facility Operator, Port of Tema	30/07/10
Monrovia		
M1	Matilda Parker, Managing Director, NPA	28/02/13 & 11/05/13 & 22/08/13
M2	Matthew Snowea, Director, Property & Environment, NPA	28/02/13 & 11/05/13 & 22/08/13
M3	Anyaa Vohiri, Executive Director, EPA	04/04/13 & 14/05/13

M4	Nathaniel Blama, Director, EPA	04/04/13
M5	Simon Waterman, Director HSSE, APM Terminal	28/04/13
M6	Christopher Kreyoh, Snr. SSO, APM Terminal	28/04/13
M7	Othello Kruah, Environment Manager, NPA	11/05/13
M8	Amos Y. Bartu, Env. Lawyer, EPA	14/05/13
M9	Egon Kuiah, Operations Analyst, NPA	16/05/13
M10	Earl Neblett, Assist. Mgr, ESIA, EPA	16/05/13
M11	Morris Gontor, ESIA Assistant and National Focal Point, Abidjan Convention on Guinea Current Large Marine Ecosystem (GCLME), NPA	17/05/13
M12	Barnabas Kasor, Director, Ports and Hbrs., NPA	19/06/13
M13	James Dogba-Yassah, Snr. Property Mgr., NPA	13/07/13
M14	Nyeke Forkpa, Deputy M.D., Admin, NPA	29/08/13
M15	Jeffery George, Deputy M.D., Legal, NPA	29/08/13
M16	*Environment Representative, China Union	05/05/13
M17	* Environment Representative, Western Cluster	05/05/13
M18	Maima Daba-Darbney, Sanitation Supervisor, NPA	29/06/13
M19	Jackie Doe, President, Dockworkers Union, NPA	29/06/13
M20	Joash Hodges, Public Relations, NPA	30/06/13
M21	Harriet Toomey, Port Information and Statistics, NPA	23/07/13
M22	Eric Paye, Snr. Sanitation Supervisor, NPA	23/07/13
M23	Adolph Akwe Lawrence, Senator, Liberia	23/07/13
Regional/International		
IR1	El Hadji Mar Gueye, Secretary General, Port Management Association of West and Central Africa (PMAWCA)	Lagos, 15/03/10
IR2	Abdulai Saiku, Regional Maritime University, Ghana	Accra, 31/07/10
IR3	Michael Luguje, Regional Coordinator, International Maritime Organisation (IMO)/ Secretary General, Port Management Association of West and Central Africa (PMAWCA)	Accra, 01/08/10 & Lagos, 07/05/15
IR4	M. T. T Addico, Secretary General, Maritime Organisation of West and Central Africa (MOWCA)	Accra, 01/08/10
IR5	Jacques Abe, Guinea Current Large Marine Ecosystem (GCLME) Project	Accra, 20/08/10

IR6	Dr. Maxwell Stephen Donkor, Executive Secretary, Interim Guinea Current Commission (IGCC)	Accra, 20/08/10
IR7	Malamine Thiam, Senior Technical Officer, Technical Co-operation Division, International Maritime Organisation (IMO)	London, 21/08/10
IR8	Carl Fiati, National Focal Point - Ghana, Abidjan Convention	Accra, 31/04/11
IR9	Paul Lamin, National Focal Point – Sierra Leone, Abidjan Convention	Accra, 31/04/11
IR10	Momodou Suwareh, National Focal Point – Gambia, Abidjan Convention	Accra, 31/04/11
IR11	Abou Bamba, Regional Coordinator, Abidjan Convention Secretariat (UNEP)	Accra, 29/03/2011 & Pointe Noire, 15/11/2012 & Abidjan, 07/05/15
IR12	Wassouni Amadou, National Focal Point – Cameroon, Abidjan Convention	Pointe Noire, 13/11/12
IR13	Octávio Cabral, National Focal Point – Guinea Bissau, Abidjan Convention	Pointe Noire, 16/11/12
IR14	Jean-Pierre Kombo, National Focal Point – Rep. of Congo, Abidjan Convention	Pointe Noire, 16/11/12
IR15	William Azuh, Technical Co-operation Division, International Maritime Organisation (IMO)	London, 15/09/15
IR16	Capt. Ibrahim Olugbade, Chairman, Governing Bodies of IMO London Convention, International Maritime Organisation (IMO)	London, 16/09/15
IR17	J.J. Shiundu, Deputy Director/Head Programme Management, International Maritime Organisation (IMO)	London, 17/09/15

Appendix 2: Interview Guide

Appendix 2.1: Interview Guide on Port Environmental Issues

PART 1: Respondent’s Details

Date	
Name of the Port	
Address	
City/ Town	
Country	
Port website address	

Full name of one completing this form	
Gender	(a)Male (b)Female
Age	(a) 20-25 (b) 26-30 (c) 31-35 (d) 36-40 (e) 41-45 (f) 46-50 (g) 51+
Title	
Department	
Education	(a) Secondary (b) Post-Secondary (c)Professional (d) University
E-mail address	

PART 2: Port Description and Activities

1. In what year was the port opened? -----
2. Is the development of the port linked to a particular history?
 - (a) Independence of the country (b) Development of the city (c) Economic development (d) Other (please specify)
3. What management model does the port operate?
 - (a) Landlord (b) Service (c) Tool (d) Other (please specify) -----
4. Who owns the port?
 - (a) Public (state) (b) Private (c) Municipal (d) Other (please specify) -----
5. Is the port located on:

Location	Tick	Location	Tick
Estuary		Embayment	
Wetland		Protected area	
River		Tourist site	
Marine inlet		Ecologically sensitive site	
Living neighbourhood		Engineered coastline	
Other (specify)		Other (specify)	

6. If the port is located on or any of the above, how is co-existence harmonised to balance the site's protection as well as the port's operations? -----

7. Is the port (a) a natural harbour (b) an engineered harbour
8. What is the annual throughput for the port? (tonnage) -----
9. Has this been increasing or decreasing? Give figures for 2003 to date on a separate sheet please
10. What percentage of this is containerised? -----
11. What percentage of total throughput represents imports? -----
12. What are the export commodities passing through the port? -----
13. What are the import commodities passing through the port? -----
14. What is the total vessel traffic? -----
15. Has this been increasing or decreasing? (a) Yes (b) No
(Give figures for 2003 to date on a separate sheet please)
16. What is cause of the increase or decrease in cargo throughput and vessel traffic?
(a) National regulation or policy direction (state exact regulation or policy)
(b) Port Environmental policy (c) other (specify)
17. From which regions does the port receive cargoes?
18. Europe (b) Asia (c) America (d) Pacific (d)
Mediterranean (d) Other (please specify)
19. Rank the regions in order of volumes (1=most volumes)

1.	
2.	
3.	
4.	

20. Does the port handle transit cargo to landlocked countries?

Yes (b) No

21. If Yes, please list the countries -----

22. What are the types of cargo the port handles? Tick as appropriate and specify if not included

Type of Cargo	Quantity (ton/yr)	Type of cargo	Quantity (ton/yr)
Break Bulk		Perishable goods	
Liquid Bulk		Petroleum and Oil Products	
Dry Bulk		Other (specify)	
General Cargo		Other (specify)	

23. What specialised berths/ terminals does the port have?

24. Petroleum (b) container(c) fruit (d) multipurpose (d) other (specify)-----

25. Are these terminals adequately equipped and operated with modern technology and mechanisation that minimises environmental impacts?

26. Very adequate (b)adequate (c) inadequate (d) other (explain)

27. What are the port area commercial activities? Tick as appropriate and specify where not included

a.	Cement production	h.	Refrigerated cargo
b.	Petroleum products processing	i.	Storage and packaging
c.	Ship repair/ marine engineering	j.	Fish market and processing
d.	Chemical industry	k.	Tourism & leisure
e.	Food processing	l.	Other (specify)
f.	General manufacturing	m.	Other (specify)
g.	Containers	n.	Other (specify)

PART 3: Main Environmental Issues

1. What are the main environmental issues facing the port? Indicate source(s) and rank them in order of most challenging (1 = most challenging)

Issue	Source(s)	Rank
Air quality (including odours)		
Water quality		
Soil quality (contaminated land)		
Sediment		
Energy use		
Garbage/port waste generation and disposal		
Ship waste discharge		
Noise		
Hazardous cargo		
Dust		
Port development (water)		
Port development (land)		
Dredging		
Dredging disposal		
Habitat (ecosystem) loss/ damage		
Vehicular traffic congestion		
Industrial effluent		
Other (specify)		
Other (specify)		

2. What are the main strengths of the port with respect to environmental quality? Rank in order of strength (1 = strongest)

Issue	Rank
Clean air	
Good water quality	
Water treatment of operational activities	
Alternative energy use (eg. renewable energy)	
Energy conservation and efficiency	
Green areas	
Waste management (including separation, reuse and recycle)	

Oil spills (both operational areas and waterside)	
Nature conservation	
Other (specify)	
Other (specify)	

PART 4: Environmental Management

1. Which of the following is important in the environmental management of the port? (indicate in order of importance (1 = most important))

Issue	Importance
Air quality	
Water quality	
Sediment quality	
Soil/land quality	
Dust	
Noise	
Antifouling paints	
Bunkering	
Ballast water discharge	
Bilge water discharge	
Sewage discharge	
Ship exhaust emissions	
Traffic from port to hinterland	
Odours	
Oil spill and pollution	
Dredging	
Dredging disposal	
Hazardous cargo	
Handling of chemicals	
Biodiversity loss	
Industrial emissions	
Industrial effluent	
Port generated waste	
Cargo spillage	
Cargo storage from runoff	
Energy consumption	
Habitat loss/ ecosystem damage	
Visual impact/ aesthetics	
Port development (water related)	
Port development (land related)	
Environmental permits	
Environmental risk assessment	

Greening	
Other (specify)	
Other (specify)	
Other (specify)	

2. Who has the responsibility for environmental management and protection?

- (a) Harbour Master (b) Port Engineer (9) Safety Manager (d) Environmental Manager (e) Other (please specify)

Please indicate contact details of person(s) ticked

Name:

Contact e-mail address/ telephone:

3. Does he (they) have the requisite training/ expertise in environment field?

- (a) Secondary (b) post-secondary (c) university (d) professional (e) other (specify)

4. Where is the environment office placed on the port organisation structure?

- (a) Top management (b) middle level (c) First line management (e) other (specify)

5. How resourced is the environment office with personnel, budget, logistics, policy directives. Management support?

- (a) Adequate (b) Inadequate (c) Other (specify)

6. Do port personnel attend environmental training programs?

- (a) Yes (b) No

7. How many people were trained last year? -----

8. What is the profile of the trained personnel?

Between which ages are the trained personnel	Between ----- and -----
Functions of these personnel	
In which subject(s) was the training provided?	
Other (specify)	

9. What is the port's environmental management aimed at?

- (a) Exploratory targets (b) Legal compliance (c) Beyond legal compliance (d) Other (specify)

10. Does the port have an environmental policy to achieve this?

- (a) Yes (b) No *If yes, please enclose a copy*

11. On which principles is this policy based? Tick as appropriate and rank in order of priority (1 = high priority)

Principle	Tick and Rank	Principle	Tick and Rank
Polluter pays principle		Public access to information	
User pays principle		Public participation in decision making	
Principle of integrated equity		The subsidiary principle	
Principle of intergenerational equity		Others (specify)	
Principle of public trust		Others (specify)	

12. Is the policy committed to addressing environmental issues the port faces?

(a) Yes (b) No

13. Were stakeholders (employees, suppliers, ship agents, freight forwarders etc) involved in developing the policy?

(a) Yes (b) No

14. Is the policy made public?

(a) Yes (b) No

15. Does the policy involve the promotion of environmental awareness for all port users?

(a) Yes (b) No

16. Does the port have a defined responsibility for personnel to coordinate the policy?

(a) Yes (b) No

17. Does the port carryout an annual review of its environmental programme?

(a) Yes (b) No

18. Does the port publish an annual environmental report?

(a) Yes (b) No *If yes, please provide a copy*

19. Does the port have an environmental management system (EMS)? If so indicate type

(a) EMAS (b) ISO 14000 (c) Non-certified system (d) None
(e) Other (specify)

20. Which of the following reasons are important for the port in establishing and establishing and environmental management system (EMS)? Rank in order of priority. (1 = most important)

Reason	Rank
Leadership in environmental protection	
Enhance credibility and public image	
Improve effectivity	
Raise environmental awareness among employees	
Legal compliance	
To respond to pressure from port authorities	
To respond to pressure from port owners	
To respond to pressure from port users/community	
To respond to pressure from neighbouring ports	
To respond to pressure from civil society	
International trend on environmental management	
Other (specify)	

21. Have any customers requested that the port be certified for an environmental management system (EMS)?

(a) Yes (b) No

22. What has been the port's response?

(a) Initiated action (b) Considering taking action (c) May take action (d) Not priority now

23. Is there any local/national group which pays special attention to the Port's environmental issues?

Group	Tick
Non-governmental organisations	
Community based organisations	
Port operators	
Suppliers	
Consultants	
Contractors	
Port users	
Tenants	
Industry	
Others (specify)	
Others (specify)	

24. Are there any external circumstances that influence the port's environmental performance?

Circumstance	Tick
International pressure	
Multilateral Environmental Agreements	
International port/ terminal operators	
Foreign Investors	
Others (specify)	
Others (specify)	

25. Is environment a competitive factor among ports in the region?

(a) Yes (b) No

26. Has the port experienced any incident that influences its commitment to environmental protection?

(a) Yes (b) No

27. If yes, what was the incidence? -----

28. What are the main challenges for environmental management and performance? Indicate in order of importance (1 = highly important)

Challenge	Rank
Financial	
human resource	
Technology	
Information and Knowledge	
Infrastructure	
Other (specify)	
Other (specify)	

29. How can environmental performance in the port be supported to improve?

Rank in order of priority (1 = high priority)

Action	Priority
Appointment of an environmental officer	
Establishment of an integrated department for environment, health and safety	
Establishment of an environment department that handles both marine pollution control and port area environmental issues	

Networking among environmental managers in the port community (port operators, shippers, agents, companies, suppliers, maritime institutions etc) in the country under a national port environmental network	
Networking among environmental managers in the ports at the regional or international level	
Global association of eco-ports	
Capacity building on environmental management	
Other (specify)	
Other (specify)	
Other (specify)	

30. Which environmental management facilities are available in the port?

Environmental facility	Tick
Water treatment plant	
Sewage system connecting (a) entire port area (b) buildings	
Waste collection system for port generated waste	
Port reception facility (PRF) to collect ship generated wastes as required under MARPOL (a) annex I (b) annex II (c) annex III (d) annex IV (e) Annex V	
The Port Reception Facility is (a) Adequate (b) Inadequate	
The Port Reception Facility is (a) private owned (b) public owned (c) port owned	
Garbage is disposed by (a) Incineration (b) Municipal landfill (engineered) (c) Municipal landfill (not engineered) (d) Other (specify)	
Oily waste treatment/decontamination facility	
Oil spill preparedness and response	
Ballast water reception/treatment facility	
Weighing bridge for trucks (over-load control)	

Monitoring equipment	
(a) Air (i) <i>automatic</i> (ii) <i>occasional</i>	
(b) Surface waters (i) <i>automatic</i> (ii) <i>occasional</i>	
(c) Ground water (i) <i>automatic</i> (ii) <i>occasional</i>	
(d) Laboratory equipment in case of environmental incident	
(e) GIS facilities	
(f) Others (specify)	
(g) Others (specify)	
Other (specify)	
Other (specify)	

31. Does the port have environmental permits?

(a) Yes (b) No

32. If yes, which permits and what is the content of these permits?

Permit	Content

33. Does the port use any of the following instruments to cope with environmental problems?

(a) Self-diagnostic method to check environmental performance

(b) Databases with solutions for environmental problems. *Indicate which database -*

(c) Others (specify) -----

34. Does the port any best environmental practice?

(a) Yes (b) No

35. If yes, what is this about? -----

PART 5: Environmental Monitoring

1. Does the port have a register for significant environmental impacts of its activities? (elements of activities, services, products etc. which interacts with the environment)

(a) Yes (b) No

2. Does the port have a documented responsibility and resources related to environmental aspects?

(a) Yes (b) No

3. Does the port carry out environmental monitoring in the port?

(a) Yes (b) No

4. This is carried out by

(a) The port (b) An external organisation

5. Has the port identified environmental parameters to monitor progress or otherwise in environmental condition?

(a) Yes (b) No

6. If yes, please provide parameters and methods used by the port:

Environmental aspect	Parameters	Method
Water Quality		
Air Quality		
Sediment Quality		
Soil/land Pollution		
Land use change		
Ecology		
Other (specify)		
Other (specify)		

7. Does the port keep environmental data on environmental aspects and parameters it monitors?

(a) Yes (b) No

If yes, include a copy of data from 2005 to date

8. Are there any environmental standards which the port is obliged to comply?

(a) Yes (b) No

9. If yes, does the port conform to such standards?

(a) Yes (b) No

10. If no why? -----

11. Has the port undergone an environmental impact assessment in connection with a new development in the last 5 years?

(a) Yes (b) No

12. Is the port involved with other organisations in a coastal survey or estuary management plan?

(a) Yes (b) No

13. Has the port authority, or does it anticipate any restrictions on development due to environmental planning controls?

(a) Yes (b) No

PART 6: Environmental Challenges

6A – Ship Generated Wastes

1. Does the port have port reception facility as required by MARPOL 73/78?

(a) Yes (b) No

2. If yes, which of the annexes under the convention are covered?

(a) Annex I (b) Annex II (c) Annex III (d) IV (e) V

3. Is it a compulsory or an optional user facility? -----
4. If yes, why? If no, why? -----
5. How are charges raised for the use of this facility?
 - (a) Separate waste discharge fee (b) Included in port tariff
6. Is the port able to receive wastes discharged by vessels without capacity problems?
 - (a) Yes (b) No
7. Has the port had instances of ships being unduly delayed because of waste discharge difficulties?
 - (a) Yes (b) No
8. How is ship waste received?
 - (a) Quayside operation (b) Waterside operation (c) Both
 - (d) Other (specify)
9. How many operators provide the facility and service?
 - (a) Only port (b) One private (c) Several private (d) The port and other private (d) Other (specify)
10. Are there any complaints from users?
 - (a) Charges (b) Efficiency (c) Technology (d) delays (e) Inadequacy (e) Other (specify)
11. Does the port or country have any instance of illegal dumping or toxic discharges?
12. How compliant are vessels regarding use of facility, notification and documentation requirements?
 - (a) 100% vessel calls (b) 75% vessel calls (c) 50% vessel calls (d) less than 50% vessel calls

6B – Ballast Water Discharge

1. Does the port have a facility to receive ballast water?
 - (a) Yes (b) No
2. If yes, how is this handled?
 - (a) Received and stored for later collection by vessel (b) Received and treated
 - (c) Other (specify)
3. Who owns this facility?
 - (a) The port (b) private (c) Joint venture between port and private (d) other (specify)
4. Are there charges for this facility?
 - (a) Yes (b) No
5. Is the port strict on ballast water exchange for calling vessels?
 - (a) Yes (b) No
6. Does your country have any case of harmful marine invasive species?

- (a) Yes (b) No
 7. If yes, has the source been investigated?
 (a) Yes (b) No
 8. What has been the impact of this invasion?
 (a) Loss of biodiversity (b) Marine pollution (c) Other (specify)
 9. Is the source related to shipping?
 (a) Yes (b) No
 10. Does the port or the country have baseline data on its marine environment?
 (a) Yes (b) No

6C – Oil Spill Preparedness and Response

1. Does the port have an oil spill contingency plan?
 (a) Yes (b) No *If yes, attach a copy*
 2. How often is this rehearsed?
 (a) Once a year (b) Half yearly (c) Other
 3. Has the port got oil spill response equipment?
 (a) Yes (b) No
 4. If yes, can you list these? (attach list if space is inadequate)

Equipment	Quantity	Remarks

5. Has the port has cases of oil spill?
 (a) Yes (b) No
 6. Provide details of oil spills:

Year	Type of oil	Quantity	Source	Magnitude	Remarks

PART 7: Environmental Governance and Networks

1. How is environment managed and protected in the port?
 (a) The port is the sole manager (b) other port actors/stakeholders are involved (c) environmental agency is the sole manager (d) the port has to relate to other competent agencies (e) Other (specify)
 2. If there are other actors, is there effective coordination among them
 (a) Yes (b) No

3. Are the responsibilities and tasks for all the actors/ agencies clearly defined?

(a) Yes (b) No

4. Name these actors/stakeholders/ agencies

No.	Actor/ Stakeholders/ Agencies

5. Does the port have joint, cooperative or collaborative arrangements and networks for environmental performance?

(a) Yes (b) No

6. If yes, indicate at what level, participants and focus

Level	Participants	Focus
Port level		
National level		
Regional level		
International level		
Other (specify)		

7. How is steering conducted?
 - (a) Equal participation (b) more resources more control (c) State control
(c) Scientific community d) Private sector (e) Other (specify)
8. Is there a regional environmental policy/ code of practice/ standards that governs environmental performance of ports in the region?
 - (a) Yes (b) No
9. If yes, is there a regional body that enforces the policy/ code of practice/ standards?
 - (a) Yes (b) No
10. If yes, name the body -----
11. How effective is this body?
 - (a) Very effective (b) effective (c) Not effective (d) Not sure
12. How are common environmental problems facing ports in the region tackled?
 - (a) Individual port action (b) Joint collaborative action (c) Other (specify)
13. Is the port and other players well informed and aware about environmental issues to make informed decisions and actions?
 - (a) Yes (b) No
14. Do you think regional environmental cooperation would be necessary for improving environmental performance in ports?
 - (a) Yes (b) No (c) indifferent (d) other (specify)
15. What is the reason for your answer? -----
16. If you think yes, what should be initiated or strengthened? -----

PART 8: Environmental Regulations

1. Has the port got laws to protect the marine environment as well as the port areas?
 - (a) Yes (b) No
2. Is their enforcement effective?
 - (a) Yes (b) No
3. What is the reason for your answer? -----
4. Has your country ratified any international marine environment conventions?
 - (a) Yes (b) No
5. Have these been domesticated into national laws?
 - (a) Yes (b) No
6. Is their implementation effective? If Yes, how/ if No, how?
 - (a) Yes (b) No

7. Is the port's environmental policy harmonised with the international and national environmental regulations?
(a) Yes (b) No
8. Is environment integrated into the port's policy-making and operational practices?
(a) Yes (b) No

PART 9: General

1. How have international environmental practices in the maritime sector influenced environmental performance in the port? -----
2. How have local environmental practices affected or contributed in any way to environmental performance in the region or the global maritime community? -----
3. What are your other comments and observations about environmental performance in the port with due consideration to ship generated waste, ballast water and oil spill preparedness and response and how could be influenced through a regional cooperation approach? -----

Appendix 2.2: Interview Guide on Environmental Regulations and Policy Performance

PART 1: Environmental Regulations & Institutional Framework

1. Has your country ratified any of the following international marine environment conventions? *(please tick as appropriate)*

- (i) MARPOL 73/78 and its related protocol
- (ii) Ballast Water Control and Management
- (iii) Oil Spill Preparedness and Cooperation
- (iv) Abidjan Convention

2. Which of them have been domesticated into national laws? *(please tick as appropriate)*

- (v) MARPOL 73/78 and its related protocol
- (vi) Ballast Water Control and Management
- (vii) Oil Spill Preparedness and Cooperation
- (viii) Abidjan Convention

3. What is the procedure for ratifying and domesticating international conventions in your country?

4. Is there a national strategic framework on handling ships waste, ballast water management and oil spill preparedness and response? If Yes, which is the designated lead agency for compliance, enforcement and monitoring?

5. If No, why? And how are these issues coordinated and who are the actors?

6. If there is a National Strategic Framework, what were the steps taken and actors to develop it? *(kindly describe)*

7. What was the motivation for the National law(s) & Strategy?
- (a) Public demand
 - (b) political attention
 - (c) international obligation
 - (d) harmonise regional agreements
 - (e) demand from operators in maritime sector
 - (f) magnitude of the threat (or potential)
 - (g) other
- (please state)*

8. How resourced is the lead agency to effectively discharge its duties under the strategic framework?

Human Capacity			
Budget/ Finance			
Information & Knowledge			
Technology/Equipment			
Other (<i>specify</i>)			

9. To what extent does the lead agency involve other actors in executing its functions?

10. What tools are available for monitoring, enforcement and compliance?

- (a) Environmental Certification (b) Quality Standards (c) Permitting & Licensing (d) Environmental Assessments (e) other (*please state*)

11. How are violations handled?

12. Are there any factors that constrains or promote compliance & enforcement? (*explain*)

- (a) Incentives from government (b) technology (c) qualified personnel (d) awareness (e) increased private participation (f) other (*specify*)

13. How are these laws and strategy brought to the knowledge and attention of the public and relevant institutions?

- (a) Education, awareness and training programmes (b) special day celebration (c) abridged versions and flyers (c) other (*specify*)

14. How is the availability of these laws impacting on marine environment protection and pollution control? (*explain*)

- (a) Port(s) and relevant institutions adopting control measures (b) port(s) and relevant institutions not doing anything (c) port(s) and relevant institutions indifferent (d) other (*specify*)

PART 2: Port Environmental Policy & Performance

1. What does environment mean to the port?

2. Does the port have an environmental policy?

- (a) Yes (*provide copy*) (b) No

3. What does the policy seek to achieve?

4. What has been the approach for the port environmental policy?

- (a) Direct regulation (by law) (b) voluntary agreements (c) consensus and negotiation
 (d) financial instruments as taxes and subsidies
 (e) other (*specify*)

5. On which principles is port environmental policy based? Tick as appropriate and rank in order of priority (1 = high priority)

Principle	Tick and Rank	Principle	Tick and Rank
Polluter pays principle		Public access to information	
User pays principle		Public participation in decision making	
Principle of integrated equity		The subsidiary principle	
Principle of intergenerational equity		Principle of cleaner production	
Principle of public trust		Others (<i>specify</i>)	

7. How has the environmental policy affected oil spill response in the port?

- (b) Reduced occurrences by ... (b) occurrences have increased by ... (c) no change in occurrence rate
 (d) no oily sheen on water surface
 (e) less oily sheen on water surface (f) water surface clean
 (g) other (*specify*)

8. How has the environmental policy affected ship waste management in the port?

- (a) Waste reception facility (b) ships find own collectors (d) port is now cleaner
 (e) ships obliged to show waste management plan and records (f) other (*specify*)

9. How has the environmental policy affected Ballast water management in the port?

- (a) Sampling before discharge (b) discharge not allowed (c) strict ballast water exchange
 (d) ballast water treatment facility (e) other (*specify*)

10. Who takes lead in initiating environmental policy in the port?

- (a) Port authority (b) maritime authority (c) national environmental agency
 (c) all actors in the port/maritime sector (d) other (*specify*)

11. Are any other actors involved in making environmental policy for the port? Who are these? (*please list*)

12. How do these actors interact regarding ships waste, ballast water and oils spill preparedness?
 (b) Regular meetings (b) during an incident (c) other (*specify*)
13. Are there any other inter-relationships for these actors on the above 3 issues?
 (a) within the port only (b) within the entire maritime sector
 (c) with other sectors outside of the port and maritime sector
 (d) with a neighbouring port (*name*) (e) among ports in West and Central Africa region (f) international (g) other (*state*)
- (b) Does the environmental policy involve the promotion of environmental awareness for all port users? (a)Yes (b) No
- (c) Does the port have a defined responsibility for personnel to co-ordinate the policy? (a)Yes (b) No
16. Does the port carry out an annual review of its environmental programme?
 (a) Yes (b) No
17. Does the port publish an annual environmental report?
 (a) Yes (b) No
18. Has the port got laws to protect the marine environment as well as the port areas? (a) Yes (b) No
19. Is their enforcement effective? (a)Yes (b) No
20. What is the reason for your answer? -----

Appendix 2.3: Interview Guide for Port Authorities of Case Study Ports

(Tema, Lagos, Abidjan, Douala, Monrovia)

PART 1: Respondent’s Details

Date	
Full name of one completing this form	
Gender	(a)Male (b)Female
Title	
Department	
E-mail address	
Port website address	

PART 2: Port Development and Operational Background

1. What management model does the port operate?
 - (b) Landlord (b) Service (c) Tool (d) Other (please specify) -----
 -
 -
2. Who owns the port?
 - (b) Public (state) (b) Private (c) Municipality (d) Other (please specify)
 -
3. Does the location of the port oblige the port in any way to protect a sensitive site? If Yes, what is this sensitive site? -----
4. Is the port any of the following?
 - (a) Natural harbour (b) Engineered harbour (c) Mix of both
5. Is environment a factor influencing the trend of cargo throughput, vessel traffic and or attracting business? If yes, in what way? -----
6. What are the types of cargo handled by the port? Tick as appropriate and specify if not included

Type of Cargo	Quantity (ton/yr)	Type of cargo	Quantity (ton/yr)
Break Bulk		Perishable goods	
Liquid Bulk		Petroleum and Oil Products	
Dry Bulk		Other (specify)	
General Cargo		Other (specify)	

PART 3: Environmental Regulations & Policy Framework

1. Does your port have an environmental policy? If yes, provide a copy -----
2. If yes, how was the policy developed, who was involved and who took the lead role? -----
3. Does the environmental policy offer actors the option for negotiation and agreement? -----
4. Are there any national laws or regulatory framework internalizing the following international marine environment conventions? *(please tick as appropriate)*
 - (ix) MARPOL 73/78 (Ship generated wastes)
 - (x) Ballast Water Management Convention 2004
 - (xi) Convention on Oil Pollution, Preparedness, Response and Cooperation (OPRC 1990)
 - (xii) Basel Convention
 - (xiii) Abidjan Convention
 - (xiv) Bamako Convention
5. Does the port have any regulations/guidelines on handling of ships waste, ballast water and oils spill response in implementing these conventions and national laws? (provide copies) -----
6. What are the drivers for the port environmental policy, regulations/guidelines on ships waste, ballast water and oil spill? -----
7. How is the environmental policy, regulations/guidelines enforced and coordinated? -----
8. How are violations handled? -----
9. Who are the actors involved policy and who takes the lead role? -----
10. How do these actors interact? (a)Planned meetings (b) during an incident (c) other *(specify)* -----
11. Are there any factors that constrain or promote compliance & enforcement of the environmental policy, regulations/guidelines on ships waste, ballast water and oil spill? -----
12. Does the port receive any form of external – international or supranational support for the development, implementation and enforcement of environmental policy, regulations/guidelines on ships waste, ballast water and oil spill? What kind of support and from what source? -----
13. How have the environmental policy, regulations/guidelines affected ship waste handling, oil spill response, ballast water management, and environmental performance in the port? -----

14. Has there been any incident(s), local, regional or international that may have facilitated or influenced the port to ensure compliance with policy framework on ships waste, ballast water, and oil spill response? -----
15. Are there any standard policy, regulations/guidelines on ships waste, ballast water, and oil spill response for ports in the West and Central Africa region? -----

PART 4: Port Environmental Management & Performance

1. Who has responsibility for environmental management? *(Please give details)*

Name: -----

Contact e-mail address/ telephone: -----

2. What is his/her defined responsibility? -----
3. Does he/she have an environmental management degree? -----
4. On what level is the environment office placed on the organisation structure?
 - (a) Top management (b) middle management (c) First line management (d) other (specify)
5. The Port's environment office is adequately resourced with personnel, budget, logistics, policy directives, Management support etc?
 - (a) Strongly disagree (b) Disagree (c) Neither agree nor disagree (d) Agree (e) Strongly agree
6. What are the major environmental challenges facing the port (in order of priority)? -----
7. What are the causes? -----
 - (a) Would you agree that environment receives the required attention in the port? (a) Strongly disagree (b) Disagree (c) Neither agree nor disagree (d) Agree (e) Strongly agree
8. Does the port have an environmental management framework that integrates operational, social and environmental issues?
9. Does the port have an environmental management system (EMS), ISO certification or environmental audit schemes etc? If so kindly elaborate --
10. Has the port undergone an environmental impact assessment in the last 6 years (2007 – 2013)? -----
11. Does the port keep a database of environmental information? -----
12. Does the port have code of environmental practice? How are these developed? Any initiatives? -----

13. Does the port have the following environmental facilities/equipment?

Environmental Facility/ Equipment	Tick
Port reception facility (PRF) to collect ship generated wastes as required under MARPOL (f) annex I (g) annex II (h) annex III (i) annex IV (j) Annex V	
The Port Reception Facility is (c) Adequate (d) Inadequate	
The Port Reception Facility is (d) private owned (e) port owned	
Garbage is disposed by (e) Incineration (f) Municipal landfill (engineered) (g) Municipal landfill (not engineered) (h) Other (specify)	
Oil Spill Response Equipment (<i>provide list</i>)	
The Equipment is: (a) adequate (b) inadequate	
The Equipment is: (a) private owned (b) port owned	

14. How do these facilities operate? (*please elaborate from notification through reception to treatment/ disposal*) -----

15. How are charges raised for the use of these facilities?

(a) Separate waste discharge fee (b) Included in port tariff (c) Other (specify)

16. How many operators provide the facility and service? -----

17. Have there been any complaints or commendations on the facility from users? (*kindly elaborate*) -----

18. How compliant are vessels regarding use of the facility, notification and documentation requirements?

(b) 100% vessel calls (b) 75% vessel calls (c) 50% vessel calls (d) less than 50% vessel calls

19. If these facilities are not available, how then are ship waste and oil spills responded to? -----

20. Does the port or country have any instance of illegal dumping or toxic discharges? (*kindly elaborate*) -----
21. Does the port follow ballast water management guidelines as provided by IMO? If not does it have any management/monitoring/control system? -

22. Does the port or country have a case of marine/aquatic species invasion and what has been the impact? -----
23. Has the source been investigated? (*please give details*)-----
24. Does the port have an oil spill contingency plan and how often is this rehearsed? (*kindly make copy available*) -----
25. Has the port had cases of oil spill? (*kindly provide details of spills*):

Year	Type of oil	Quantity	Source	Remarks

26. Are there any challenges for the port regarding ships wastes, ballast water and oil spills? -----
27. In what ways are the private sector and civil society involved in promoting environmental performance in the port especially regarding ships waste, ballast water and oil spill response? -----
28. In what ways are port operators, users, businesses, tenants etc involved in environmental management especially regarding ships waste, ballast water and oil spill response? -----
29. How involved are the national environment agency, local government, ministries, scientific/academic community, maritime administration etc. in environmental protection, enforcement and compliance in the port especially regarding ships waste, ballast water, and oil spill response? ----
30. Is there any local/national/international group which pays special attention to the Port's environmental issues? *Specify* -----
31. Does the port publish annual environmental report? If yes, provide copy(ies) -----
32. How is environmental information disseminated within the port and among stakeholders? -----
33. How are environmental information, knowledge and experience exchanged with other ports in the WCA region? -----
34. What are the main challenges for environmental management and performance in the port? -----

35. Does any of the following circumstances influence environmental performance in the port and in what way?

Circumstance	Tick
International Pressure & Obligation	
Multilateral Environmental Agreements	
International port/ terminal operators	
Local port/terminal operators	
Foreign/Private Investors	
Political Attention	
Harmonising Regional Agreements	
Magnitude of Environmental Threats	
Environmental Performance not an issue	
Other (specify)	

36. How can environmental performance in the port be supported? -----

PART 5: Environmental Co-operation and Networks

1. How are environmental problems facing ports in the WCA region tackled?
 (a) Individual port action (b) Joint collaborative action (c) Other (specify)
2. How is environmental management coordinated in the port? Is it by the port authority alone or involves other port operators and actors? Who are the other actors? -----
3. Are there any formal or informal cooperative and collaborative environmental arrangements or networks in the port? Who are the actors involved-----
4. Are there any formal or informal cooperative and collaborative environmental arrangements or networks between your port and other ports, shipping lines and terminal operators in this and other ports in the WCA region? Which, ports, lines and operators etc are these? -----
5. How do these collaboration and networks operate and contribute to the environmental performance in your port as well as in ports in the WCA region especially the handling of ships waste, ballast water, and oil spill response? -----
6. Who plays the lead role and how is agenda set, information exchanged, decisions made, actions taken and performance monitored etc? -----
7. Are the responsibilities and tasks for all the actors clearly defined? -----

8. How effective is this collaboration and network in achieving their set objectives? Elaborate -----
9. Are there other collaborative arrangements and networks other than environmental in the port or with other ports? -----
10. Does your port use environment to gain competitive advantage over other ports in the WCA region? If so in what way? --
11. How have environmental practices especially on ships waste, ballast water, and oil spill response in your port affected or contributed to environmental performance in the WCA region? -----
12. How have international environmental practices especially on ships waste, ballast water, and oil spill response influenced environmental performance in the port? -----
13. Is there a common environmental policy/code of practice/standard for ports in the WCA region? If yes, how are they enforced among the ports? -----
14. Which body coordinates and enforces the policy/code of practice/standards? -----
15. How effective is this body? And what explains your answer? -----
16. What topics or issues should be the subject of collaboration/cooperation among ports in the WCA region? How can this be achieved? -----
17. What are your observations and comments about environmental collaboration/cooperation within and among ports within the WCA region? How could it be influenced through collaborative and cooperative approaches? -----
18. How beneficial could environmental collaboration/cooperation be for WCA ports? -----
19. How can new forms of collaboration/cooperation be achieved and what are opportunities and challenges? -----

Appendix 2.4: Interview Guide for Shipping Lines & Terminal Operators

PART 1: Respondent’s Details

Date	
Full name of one completing this form	
Gender	(a)Male (b)Female
Title	
Department	
E-mail address	
Website address	

PART 2: Organisation Background

- 7. For how long has your organisation operated in the port? -----
- 8. In which other West & Central African (WCA)/international ports do you operate? -----
- 9. What has been the annual cargo tonnage handled by your vessels or terminals globally for the last 5 years (2009 – 2013)? (if applicable)Give data -----
- 10. What percentage of this is for this port? Give data for last 5 years (2009 – 2013) -----
-
- 11. What percentage of this is for other WCA ports in which you operate? -----
-
- 12. What are the types of cargo you handle? Tick as appropriate and specify if not included

Type of Cargo	Quantity (ton/yr)	Type of cargo	Quantity (ton/yr)
Break Bulk		Perishable goods	
Liquid Bulk		Petroleum and Oil Products	
Dry Bulk		Containerised Cargo	
General Cargo		Other (specify)	

13. From which regions do you regularly bring/ receive cargoes to this port or your terminal and what are the cargo types and volumes for the last 5 years (2009 – 2013)?

Region	Cargo Types	Volume (2009)	Volume (2010)	Volume (2011)	Volume (2012)	Volume (2013)
Europe						
Asia						
America						
Africa						
Pacific						
Mediterranean						
Other						

14. To which regions do you regularly ship/ export cargoes from this port or your terminal and what are the cargo types and volumes for the last 5 years?

Region	Cargo Types	Volume (2009)	Volume (2010)	Volume (2011)	Volume (2012)	Volume (2013)
Europe						
Asia						
America						
Africa						
Pacific						
Mediterranean						
Other						

15. Is environment a factor influencing your choice of operating in this port or any other WCA port? -----

16. Do you operate specialised carriers/ terminals? (*specify*) -----
-

17. How does environmental consideration feature in your corporate structure, policy making and operations, and how does this manifest in this port? -----

PART 3: Marine/Port Environment Regulations

1. Do you have an environmental policy? If yes, provide a copy -----
2. How did your environmental policy evolve? Specifically for this port or as part of your (corporate) regional/ global operations? -----
3. How is the effectiveness of its implementation measured? -----
4. Does your company have the option for environmental negotiation and agreement with the Port Authority or any environmental regulator? -----
5. Are there any national laws or regulatory framework for the following international marine environment conventions that oblige your organisation's compliance? (*please tick as appropriate*)
(xv) MARPOL 73/78 (Ship generated wastes)

- (xvi) Ballast Water Management Convention 2004
 - (xvii) Convention on Oil Pollution, Preparedness, Response and Cooperation (OPRC 1990)
 - (xviii) Basel Convention
 - (xix) Abidjan Convention
 - (xx) Bamako Convention
6. Are there any policy framework/directives or guidelines on ships waste handling, ballast water management and oil spill response for the port? -----
 7. If yes, how were the policy framework/directives or guidelines developed and how are they coordinated? What role does your organisation play? -----
 8. Has there been any incident(s), local, national, regional or international that may have facilitated or influenced the policy framework, directives or guidelines on ship waste handling, ballast water, and oil spill response? -----
 9. How are vessels and terminals monitored for enforcement and compliance regarding ships waste, ballast water and oil spill? Is this influenced by international, regional or national/ local practices? -----
 10. How are violations handled? -----
 11. Are there any factors that constrain or promote the compliance & enforcement of these laws and strategic framework, directives or guidelines especially by shipping lines and terminal operators? -----
 12. How has your organisation influenced these laws and strategic framework/ directives and guidelines, and how have these in turn influenced your operations regarding environmental performance? -----

PART 4: Environmental Management & Performance

1. Who has responsibility for environmental management in your organisation?
(Please give details)
Name: -----
Contact e-mail address/ telephone: -----
2. What is his/her defined responsibility? -----
3. Does he/she have an environmental management degree? -----
4. On what level is the environment office placed on your organisation structure?
(b) Top management (b) middle management (c) First line management (d) other (specify)
5. Your organisation's environment office is adequately resourced with personnel, budget, logistics, policy directives, Management support etc?
(b) Strongly disagree (b) Disagree (c) Neither agree nor disagree (d) Agree
(e) Strongly agree

6. What is the motivation for environmental performance by your organisation?
 (b) International obligation (b) Harmonise regional agreements (c)
 Public/Civil Society demand (d) Political attention (e) Demand from
 operators in maritime sector (f) Magnitude of the threat of environmental
 issues (or potential) (g) Environmental performance not really an issue
 (f) Other (*please state*) -----
7. Are you compelled to control environmental impact dimensions of your operations and compliance to existing laws and regulations? -----
8. What are the major environmental problems the port faces (in order of priority)? -----
9. What are the causes? -----
10. Does your organisation have standardised procedures and practices regarding ships waste, ballast water and oil spill response? If yes, are they globalised/regionalised/nationalised or localised? -----
11. How were these practices and procedures developed? -----
12. How have these practices and procedures influenced port environmental performance and marine environment protection locally (the port), regionally (WCA), and globally? -----
13. How on the other hand have these practices and procedures been influenced by environmental practices in the port, WCA region's ports and/ or international ports? -----
14. Are these procedures and practices also common to other shipping lines and terminal operators in the WCA region? If yes, how are they developed and enforced across the region? -----
15. Does your organisation try environmental initiatives/programmes to enhance environmental performance in the port? What are some of these environmental initiatives? -----
16. How does your organisation handle ship waste, ballast water and oil spill response in the port? -----
17. What are the concerns and challenges for your organisation as a shipping line/terminal operator with respect to ship wastes, ballast water and oil spills? -----

18. How do you interact with the port community and other actors on ships waste handling, ballast water management and oil spill response? -----
19. Does this port or the country have any instance of illegal dumping or toxic discharges? (*kindly elaborate*) -----
20. Does your terminal or this port have an oil spill contingency plan? (*kindly make copy available*) -----
21. How often is this rehearsed? -----

22. Has your terminal or this port had cases of oil spill? (*kindly provide details of spills*):

Year	Type of oil	Quantity	Source	Remarks

23. Does your organisation have an environmental management system (EMS), environmental certification, audit or award scheme? If no why? And if yes, kindly elaborate -----

24. Does your organisation adapt to any international voluntary environmental programme? -----

25. Do shipping lines and terminal operators in the WCA region have a common and standardised EMS system, certification or audit scheme especially regarding ship waste, ballast water and oil spill response? (*Kindly elaborate*) ----

26. How involved is your organisation in environmental performance and management in the port and in the WCA region? What role do you play? ----

27. Is there any local/national/international group which pays special attention to Port/ terminal/ shipping environmental issues? *Specify* -----

28. Does your organisation carry out any environmental monitoring? How is this done and how is information communicated? -----

29. Do you publish annual environmental report? If yes, provide copy(ies)

30. How are environmental information, knowledge and experiences exchanged within your organisation, the port and with other shipping lines, terminal operators, and ports in the WCA region? -----

31. In what ways can your organisation support forms of environmental collaboration and cooperation in the port and WCA region as a whole? --

PART 5: Environmental Co-operation and Networks

32. Are there any circumstances (external and internal) that influence your organisation's environmental performance? (*tick as appropriate*)

Circumstance	Tick
International pressure	
Multilateral Environmental Agreements	
International port/ terminal operators	
Foreign/Private Investors	

Others (specify)	
------------------	--

33. Is environment a competitive factor among shipping lines and terminal operators operating in the WCA region? If yes, how is it managed? -----
34. Are there any formal and informal cooperative and collaborative environmental arrangements or networks between your organisation and other shipping lines and terminal operators in this port and in other ports in the WCA region? Which lines and operators are these and in which ports? --
35. How do these collaboration and networks operate? Who plays the lead role and how is agenda set, information exchanged, decisions made, actions taken and performance monitored etc? -----
36. Are the responsibilities and tasks for all the actors clearly defined? -----
37. How effective is this network and collaboration in achieving their set objectives? Elaborate -----
38. How does the collaboration and network contribute to the management of ships waste, ballast water and oil spill in by shipping lines and terminal operators in this port and other ports in the WCA region? -----
39. Are there other collaborative arrangements and networks other than environmental in the port or with other ports? -----
40. Is there a regional code of practice/ standards that govern environmental performance and the issues of ships waste, ballast water and oil spill for shipping lines and terminal operators in the WCA region? -----
41. If yes, which regional body enforces the policy/code of practice/standards? -

42. How effective is this body? And what explains your answer? -----
43. How has your organisation's environmental practices contributed to the handling of ship-generated wastes, ballast water, and responding to oil spill in this port, the WCA region? -----
44. How have international shipping and terminal operation environmental practices especially on ships waste, ballast water and oil spill influenced environmental performance in this port? -----
45. How will environmental collaboration/cooperation benefit WCA ports? How can this be achieved? -----
46. What topics or issues should be the subject of collaboration/cooperation within and among ports in the WCA region? How can this be achieved? ----
47. What are your observations and comments about environmental collaboration among shipping lines, terminal operators and other actors within and among ports in the WCA region? -----

What are the opportunities and challenges for new forms of steering and co-operation? -----

Appendix 2.5: Interview Guide for International and Regional Institutions

(IMO, PMAWCA, MOWCA, IGCC, GCLME, Abidjan Convention Secretariat, IPIECA, PAPC, IAPH, GI-WACAF etc.)

PART 1: Respondent’s Details

Date	
Full name of one completing this form	
Gender	(a)Male (b)Female
Title	
Department	
E-mail address	
Website address	

PART 2: Organisation Background

- 18. What is the primary focus of your organisation? Developing global standards for maritime safety, maritime security, maritime transport facilitation and marine environment protection, and building capacity of countries to apply these global standards to ensure safe, secure and efficient shipping on cleaner oceans.

- 19. Is your organisation’s establishment linked to a particular history? The Convention establishing IMO was adopted in 1948, and the IMO held its first meeting in ten years later in 1959. However, the history of regulatory frameworks for maritime transport dates back to the 19th century. Regulations for the maritime industry have largely been incident-engineered. For example, the Titanic disaster of 1912 spawned the first international maritime safety convention, which is the SOLAS Convention

- 20. In what ways does your organisation work with WCF ports and on what issues? IMO’s work has always been through the national Maritime Administrations. With regard to ports, IMO has provided capacity building to ports mainly in the area of the implementation of the ISPS Code and the FAL Convention, as well as the provision of ships waste reception facilities in ports. Recent efforts are in capacity building for ports to play their part in the effective management of ship’s ballast water.

Part 3: Marine/ Port Environment Regulations & Policy Framework

1. Which of the International Marine Environment Agreements is your organisation involved with? -----
2. How has your organisation influenced the implementation of these agreements by WCA countries? -----
3. Which countries are these? -----
4. What has been the impact of your influence and what factors account for this impact? -----
5. Is there a common environmental policy or regulatory framework for WCA ports? -----
6. Do WCA ports have collaborative/co-operative arrangements for developing environmental regulations and policy? -----
7. What are issues or topics for the collaboration? -----
8. How does the collaborative arrangement work and what role does your organisation play? -----
9. Who are the actors involved? -----
10. Which is the lead agency? -----

Resource	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
Human Capacity					
Budget/ Finance					
Information & Knowledge					
Technology/Equipment					
Other (specify)					

11. How are the regulations and policy for this collaboration developed, enforced, implemented and coordinated? -----
12. Does your organisation provide any form of support? What kind of support? -----
13. What tools are available for monitoring, enforcement and compliance and are these tools influenced by international, regional or national/ local practices? -----
14. How are violations handled? -----
15. Are there any factors that constrain or promote your organisation's or any other's involvement in this collaboration? -----

16. How does the collaboration and its policies and regulations affect marine environment protection and pollution control especially with regard to ship waste, ballast water and oil spill response in individual WCA ports and as a group? -----

PART 4: Port Environmental Management & Performance

1. Would you agree that environment receives attention generally in WCA ports and specifically in the ports of Tema, Lagos, Douala, and Abidjan?
 (a) Strongly disagree (b) Disagree (c) Neither agree nor disagree (d) Agree (e) Strongly agree
2. What factors account for this? -----
3. Does WCA ports have standardised procedures and practices regarding handling of ships waste, ballast water and oil spill response? If yes, what are these and how involved is your organisation in this? -----
4. How were these procedures and practices developed? Any initiatives? -----
5. What is your organisation's role? -----
6. Who are the actors involved? -----
7. How have these practices and procedures influenced environmental performance in WCA ports and also other international ports especially with the handling of ship waste, ballast water and oil spill? -----
8. Were these practices and procedures in any way influenced by international /supranational environmental organisations/regulations and practices? (Elaborate on what ways) -----
9. In what way does your organisation or any other multilateral/ supranational organisation influence or support environmental management and performance in WCA ports? -----
10. What is the motivation or drivers for your organisation's influence or support for environmental management and performance in WCA ports?
11. What is the impact of this influence or support? -----
12. Does your organisation have environmental baseline data for WCA ports and does it carry out any environmental monitoring? -----
13. Could you kindly list the instances of illegal dumping or toxic discharges in the WCA region and the action taken by your organisation -----
14. How is your organisation working with WCA ports on issues of handling of ship waste, ballast water and oil spill? -----
15. Do you work on other issues with WCA ports other than environmental? What are the issues? -----
16. Is it done with individual ports or collectively? Which ports are involved?

17. If not has there been any demand from WCA ports and specifically the
aforementioned ports for such systems or schemes? -----
18. Are there any other organisation (governmental, non-governmental or
intergovernmental etc.) which pays special attention to the Port
environmental issues especially in the WCA region? Specify them and in
what ways -----
19. What influences the current environmental practices in WCA ports? -----
20. What would you say are the main challenges for environmental management
and performance in WCA ports? -----
21. What are the opportunities for environmental management and performance
in WCA ports and what ways can this be supported and strengthened? -----

22. What is your organisation's programme for building environmental capacity
of ports in WCA region? -----
23. How well informed and aware are ports and other actors in the sector in the
WCA region about marine environmental issues to make informed decisions
and actions? -----
24. How are environmental information, knowledge and experience exchanged
within and among WCA ports and what role does your organisation play in
this? -----

PART 5: Regional Environmental Co-operation & Networks

1. How does your organisation network or collaborate with other
organisations to deal with common environmental problems facing
ports in the WCA region? -----
2. Who are the other actors in the network or collaboration?
3. Are there any formal or informal cooperative and collaborative
environmental (or other) arrangements or networks within WCA
ports and among them? -----
4. Which multilateral or supranational organisations are involved? -----
5. Is your organisation involved and what role does it play? -----
6. Do the issues covered by this network or collaborative arrangement
include handling of ships waste, ballast water and oil spill response? --
7. How does this collaboration work? How are decisions made,
coordination done, information disseminated, actions taken and
performance monitored etc.? -----
8. Are the responsibilities and tasks for all actors clearly defined? -----
9. How effective is this network and collaboration in achieving their set
objectives? -----

10. How does the collaboration and network contribute to environmental management and performance in WCA ports especially with handling of ships waste, ballast water and oil spill? -----
11. Is there a particular body that oversees environmental management and performance in WCA ports? -----
12. How does this body function? -----
13. Is environment a competitive factor among WCA ports? If so how is it managed? -----
14. What are your observations and comments on environmental performance in WCA ports especially regarding handling of ship waste, ballast water and oil spill response? -----
15. How beneficial is environmental collaboration for WCA ports? -----
16. What are challenges and opportunities for achieving forms of environmental collaboration in WCA ports and also among them? ----

About the Author



Harry Barnes-Dabban was born in Accra, Ghana on 31st December, 1965. He obtained his ordinary level certificate at Tarkwa Secondary School and proceeded to Aggrey Memorial Secondary School for his advanced level certificate, both in Ghana. He proceeded to the Kwame Nkrumah University of Science and Technology, Kumasi, Ghana, where he obtained a Diploma in Estate Management in 1987. He then got employed with the Estate Department of the Ghana Ports and Harbours Authority in 1989, where he worked for a little over twenty years. During the period of his employment, he undertook several studies including Post-Graduate Diploma in Municipal Environmental Policies at the Institute for Housing and Urban Development Studies, Erasmus University, Rotterdam, in 1998; MSc. in Urban Environment Management, Wageningen University; and, Post-Graduate Certificate in Integrated Coastal Zone Management at the Centre for Coastal Resources, Rhode Island University, USA, in 2002. He culminated his studies with enrolling in a PhD at the Environmental Policy Group, Wageningen University, The Netherlands, in 2008.

At Ghana Ports and Harbours Authority, Harry was instrumental in the Authority taking up environmental role and institutionalising it as part of the Estate Department's function, for it to become the Estate and Environment Department. He also worked briefly, 2009-2010, as National Policy Coordinator for the Integrated Coastal Governance Initiative for the Western Region of Ghana, a USAID project executed by the Coastal Resources Center of the University of Rhode Island, USA.

Harry has since done pioneering work in promoting attention to environmental policy and governance for African ports. He has founded the Ports Environmental Network-Africa (PENAF), an environmental non-governmental organisation with interest in the environmental health of African ports.

During his PhD, Harry organised a number of environmental activities for African ports including the first and second African ports environment conferences in Accra and Mombasa, in 2010; MARPOL study visits to the ports of Bremen and Antwerp/Rotterdam in 2011 and 2015 respectively, by African ports; E-waste study visit to the port of Rotterdam by Ghana Ports and Harbours Authority, in 2011; first

Strategic Assessment of Port Environmental Issues, Policies, and Programmes (SAPEIPP) for West, Central and Southern African ports, in Abidjan, 2015 (this was organised in collaboration with UNEP's Regional Coordinating Unit of the Abidjan Convention and the Port Authority of Abidjan).



*Netherlands Research School for the
Socio-Economic and Natural Sciences of the Environment*

D I P L O M A

For specialised PhD training

The Netherlands Research School for the
Socio-Economic and Natural Sciences of the Environment
(SENSE) declares that

Harry Barnes-Dabban

born on 31 December 1965 in Accra, Ghana

has successfully fulfilled all requirements of the
Educational Programme of SENSE.

Wageningen, 22 June 2018

the Chairman of the SENSE board

Prof. dr. Huub Rijnaarts

the SENSE Director of Education

Dr. Ad van Dommelen

The SENSE Research School has been accredited by the Royal Netherlands Academy of Arts and Sciences (KNAW)



K O N I N K L I J K E N E D E R L A N D S E
A K A D E M I E V A N W E T E N S C H A P P E N



The SENSE Research School declares that **Harry Barnes-Dabban** has successfully fulfilled all requirements of the Educational PhD Programme of SENSE with a work load of 49.6 EC, including the following activities:

Selection of SENSE PhD Courses

- o Social Theory and the Environment (2008)
- o Environmental research in context (2008)
- o Research in context activity: 'Initiating and organising international workshop on: Governing Environmental Flows from Shipping: West and Central Africa Ports in a Network Society, 15-17 June 2010 in Tema, Ghana'
- o Human Dimensions of Global Environmental Change: Earth System Governance (2011)

Selection of Other PhD and Advanced MSc Courses

- o Field Research Methods: Methods and Tools for Qualitative Data Analysis, Wageningen University (2008)
- o Advanced Environmental Economics and Policy, Wageningen University (2008)
- o Summer School – Clean Tech at Sea: How to Change Maritime Transport, Aalborg University, Denmark (2012)
- o Responsible Research and Innovation for Researchers, Athena Institute, VU Amsterdam (2016)

Selection of Management Skills Training

- o Co-organising International Workshop 'Strategic Assessment of Port Environmental Issues, Policies and Programmes (SAPEIPP) for West, Central and Southern Africa' 05-07 May 2015, Abidjan, Côte d'Ivoire
- o Organised a Panel Session on African Ports and the Environment at the MARE Conference on People and the Sea, 05-07 July 2017, University of Amsterdam, The Netherlands
- o Ambassador for the Sustainable Oceans Summit organised by the World Oceans Council, 30 November- 02 December 2016, Rotterdam, The Netherlands

Selection of Oral Presentations

- o *Availability and use of port reception facilities (PRF) in Africa*. International Association of Ports & Harbours (IAPH) Africa-Europe Meeting, 07-08 December 2011, Brussels, Belgium
- o *Information Market: Transfer/Export of Used Electric & Electronic Equipment (UEEE)*. Organised by Dutch Ministry of Infrastructure & Environment, 20 May 2017, Amsterdam, The Netherlands

SENSE Coordinator PhD Education

Dr. Peter Vermeulen

