

Chapter 3. Governance

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3.1 Ocean Governance in Areas Beyond National Jurisdiction

3.1.1 Summary and Key Messages

Several recent high-level meetings and reports have concluded that poor governance is a root cause of unsustainability of ecosystem services from the global ocean. Current thinking about governance suggests that addressing this root cause will require much more than the conventional historical focus on regulatory processes and enforcement. The recognition that governance is much broader than this and encompasses the private sector, civil society and resource users of all kinds has led to increased attention to the institutional arrangements and structures within which governance processes play out.

This chapter examines the plethora (over 100) of international agreements comprising the global ocean governance architecture for the key issues, fisheries, pollution, biodiversity and climate change, in areas beyond national jurisdiction (ABNJ). The global governance architecture for the ocean is often referred to as fragmented and having significant gaps. This study confirms that there is indeed considerable room for improvement in integration at the global and regional levels, and that there are significant gaps in coverage of issues, especially biodiversity. It provides indications of where interventions may be needed and proposes an overall structure to make ocean governance architecture more approachable. The chapter is based on a full report by Mahon et al. (2015) which provides further information on the conceptual basis for the assessment and on the assessment methods. The full report is considered to be a companion volume to this chapter which aims primarily to communicate the key findings in a limited space. Examination of the policy processes associated with the 100 agreements found for ABNJ, reveals weaknesses at several policy cycle stages, particularly decision-making and implementation. The decisions made under the processes for agreements are often only suggestions which countries may choose not to implement. There are seldom repercussions for non-compliance. Implementation is also weak, as in most cases it is left up to the countries to ensure that agreed measures are put in effect and monitored. The analysis indicates where interventions can be made to improve these processes, and provide the means of tracking improvements.

Viewing the entire set of agreements as an entire ABNJ governance system, there is an apparent network structure amongst them, which could provide a useful framework for building and strengthening the interactions required to overcome fragmentation. There are several global agreements for key issues such as fisheries, pollution and biodiversity which, together with any associated regional agreements, form separate silos. These are referred to as 'global-regional, issue-based networks'. Integration across these at the global level should be a priority. It is the responsibility of UN-Oceans, a mechanism to link the UN agencies involved in ocean governance; but UN Oceans has no staff or resources to do the job.

Complementing the 'global-regional, issue-based networks' are 16 crosscutting regional clusters or networks found where regional agreements for several issues coincide spatially. These provide the opportunity for integration among issues needed for ecosystem-based management at the regional level. These clusters are generally weak with only a few having any overarching integration mechanism and many lacking an agreement for biodiversity. These regional clusters should be the focus of strengthening activities that target the policy processes of individual agreements, establish new regional agreements to fill gaps, and develop regional integration mechanisms.

This assessment has focused on ABNJ, but the global and regional networks of agreements described above either apply to areas within national jurisdiction (AWNJ) as well, or have linkages to agreements that focus on them. The assessment concludes that it is probably most appropriate to deal with ocean governance as a whole rather than separating it into ABNJ and AWNJ, while recognising that there are substantial jurisdictional differences, and that arrangements for ABNJ are much further behind.

The study has assessed the extent to which provision has been made for practices thought to reflect 'good governance' in the policy processes associated with individual agreements. The study has also sought to assess the overall relations and structure among the many agreements for governance of the world's ocean. These assessments have been based on the text of the agreements and associated documents such as rules of procedure. The limitation that this study reflects largely 'rules on paper' rather than 'rules in practice' is fully acknowledged. Nonetheless, it provides a significant basis for discussion of what is, and what should be, taking place in practice.

The objectives of this Assessment

The objective of this study was to assess global governance architecture for ABNJ governance and global governance aimed at mitigation of global environmental issues related to the ocean. Specifically, the assessment aimed to:

- Address the four themes of the open ocean assessment (climate, biodiversity and ecosystems, fisheries, and pollution);
- Focus on identifying the governance architecture (networks) and the roles of organisations and institutions in the policy cycle, identifying gaps and overlaps;
- Pay particular attention to science-policy interfaces;
- Note links to regional governance architectures; and
- Incorporate emerging global governance concepts and their application to the ocean.

It is important to note that the assessment intended to look only at governance arrangements and architecture. Due to limitations in time and resources, it did not examine governance effectiveness, important as an assessment of effectiveness may be.

Key Messages

There is considerable scope for strengthening the policy processes associated with more than 100 agreements found for ABNJ, particularly with regard to decision-making;

- There is an apparent networking structure amongst ABNJ governance arrangements that could provide a useful framework for building and strengthening the interactions required to overcome fragmentation;
- There are 'global-regional, issue-based networks' for which integration at the global level should be a priority;
- There are crosscutting 'regional clusters' or networks where regional agreements for several issues coincide spatially. These regional clusters should be the focus of strengthening activities that target the policy processes of individual agreements, establish new regional agreements to fill gaps, and to develop regional integration mechanisms; and
- Ocean governance should be dealt with as a whole rather than separating it into ABNJ and AWNJ, while recognising that there are substantial jurisdictional differences and arrangements for ABNJ are much further behind.

3.1.2 Main Findings, Discussion and Conclusions

The ocean area beyond national jurisdiction (ABNJ) covers about half of the surface of planet Earth, with those within national jurisdiction (AWNJ) covering a further 20 per cent See Figure 1.1 in Introduction. ABNJ provide many important ecosystem services (UNEP 2006, UNESCO-IOC et al. 2011). These ecosystem services are increasingly under threat from a diversity of anthropogenic impacts arising from fisheries, land and marine-based sources of pollution,

and climate change (GESAMP, 2001). The monetary value of ecosystem services from ABNJ is poorly known; especially for nonmarket services such as their role in moderating climate change (Murillas-Maza 2011) but are thought to be huge (IPCC 2014). This lack of understanding of the value of the ocean, the vastness and remoteness of ABNJ as well as issues of jurisdiction, have resulted in inadequate attention to the protection and preservation of the ocean's capacity to deliver these services.

The global governance arrangements for the ocean fall under the constitutive framework of the 1982 United Nations Convention on the Law of the Sea (UNCLOS). The preamble to UNCLOS acknowledges that 'the problems of ocean space are closely interrelated and need to be considered as a whole'. This perception of the need to manage ocean issues in an integrated and coordinated manner runs throughout the Convention. However, despite the large array of global and regional conventions, treaties and other arrangements for governance of the major ocean issues, coordination and integration among issues such as biodiversity, fisheries, pollution and climate are often weak (Freestone 2010, Rothwell and Stephens 2010).

As with other social-ecological systems, governance of the ocean involves much more than these global conventions. It includes governmental structures, markets, and civil society arrangements. Thus, in deciding where future interventions can help to mediate the relationship between human and natural systems and increase human wellbeing, both the existing global legal framework and linkages with other critical components and actors of the system will need to be fully appreciated by the Global Environment Facility (GEF) and other stakeholders. Given the interconnectedness of the world's ocean, linkages to national and even local level governance processes will also play critical roles in the governance of ocean ABNJ. This chapter examines global and regional agreements and associated arrangements for governance of ABNJ. It is based on a more comprehensive report by Mahon et al. (2015) of the analyses carried out which can be consulted for additional information. The focus is on governance agreements for the key sustainability issues facing ABNJ: fisheries, pollution, biodiversity and habitats, and climate change/variability. Indeed these issues are critical for all ocean areas, so the chapter also considers the linkages of governance arrangements in ABNJ with those for areas within national jurisdiction.

Holistic perspectives relating to global level patterns in ocean governance arrangements are needed to inform our understanding of how best to implement governance of the oceans in the integrated and coordinated fashion envisaged by UNCLOS. This study seeks to determine the weaknesses and gaps in the full set of ocean governance arrangements. It also seeks to determine if the arrangements comprise an overall emerging ocean governance architecture that can provide a basis for discussion, and finally to identify interventions to meet ocean governance needs.

Findings

Overall, 100 arrangements were found that were considered to be relevant to ABNJ with regard to the four issues of concern (Table 3.1) (see Mahon et al. 2015 for a full list of agreements in the database). Of these, 18 are constituting agreements and 82 are operational (see Section 3.1.2.1.2 for an explanation of these terms). The majority of the arrangements address pollution (55) and fisheries (43), with far fewer for biodiversity (25) and climate change (8). Of the entire set of arrangements, 23 are global in scope, with the remainder being specific to individual oceans or marine regions.

The number of regional agreements varies widely among ocean regions. The region with the largest number is the North Atlantic with 25, including relevant agreements covering the entire Atlantic as well as adjacent seas (Mediterranean, Caribbean, Baltic, Black). In contrast, in the South Atlantic there are only eight agreements, including those relevant for the entire Atlantic. The polar regions also have relatively few agreements, with six for the Southern Ocean and three for the Arctic Ocean. However, the assessment identifies the set of governance arrangements for the Southern Ocean to be among the most comprehensive for any region.

Table 3.1 Numbers of arrangements by issues, types and regions (B = biodiversity, F = fisheries, P = pollution, C = climate change)

Region	Type of arrangement	Issues covered												Total
		F	P	B	C	FP	FB	PB	PC	BP	FPB	PBC	FPBC	
Overall	Constituting	0	10	1	1	1	2	0	0	0	2	1	0	18
	Operational	27	34	5	1	0	6	2	1	1	0	0	5	82
	Total	27	44	6	2	1	8	2	1	1	2	1	5	100
Global	Constituting	0	2	1	1		2	0	0		1			7
	Operational	3	8	1	1		1	1	1		0			16
	Total	3	10	2	2		3	1	1		1			23
Atlantic	Operational	1		1										2
North Atlantic	Constituting	0	3	0			0	0		0			0	3
	Operational	4	10	1			2	1		1			1	20
	Total	4	13	1			2	1		1			1	23
South Atlantic	Constituting	0	1				0							1
	Operational	2	2				1							5
	Total	2	3				1							6
North Pacific	Constituting	0									1		0	1
	Operational	4									0		1	5
	Total	4									1		1	6
South Pacific	Constituting	0	1									1	0	2
	Operational	9	5									0	1	15
	Total	9	6									1	1	17
Indian Ocean	Constituting	0	3				0							3
	Operational	2	8				1							11
	Total	2	11				1							14
Arctic Ocean	Operational	1		1									1	3
Southern Ocean	Constituting	0	0	0		1	0						0	1
	Operational	1	1	1		0	1						1	5
	Total	1	1	1		1	1						1	6

Regional agreements are considered to be important means of translating global agreements to specific geographical areas, which is essential for an ecosystem approach (Crowder et al. 2006, Young et al. 2007, Rice et al. 2011). A closer look at the coverage of issues by regional agreements reveals some of the gaps (Table 3.1). For example, there are several regions with no agreement of any kind for biodiversity. Several of the biodiversity agreements are also specific to a species (polar bears) or taxon (seals, albatrosses and petrels, sea turtles) and do not provide broad coverage of habitats and communities. In the case of climate change, there are two global agreements, the UNFCCC and its Kyoto Protocol, and six combined issue regional agreements in which climate change is identified. In these, climate change is identified only as a factor that must be taken into consideration in dealing with the other issues, rather than something to be addressed directly. This is not unexpected for an issue that is essentially global in nature.

Chronology of agreements

Governance agreements with relevance for ABNJ first began to come into force in the late 1940s (Mahon et al 2015). However, it was not until the late 1970s that a sizable number of both constituting and operational agreements came into force, with constituting agreements peaking in the late 1980s and early 1990s. The peak for operational

agreements occurred shortly thereafter. Since the early 2000s, few constituting agreements have come into force, while operational agreements have continued to come into force, albeit at a slower rate. Despite this tapering off, many gaps in coverage of ABNJ areas and issues remain; particularly for biodiversity and ecosystems.

Assessment of policy cycles

Based on the TWAP governance methodology (Mahon et al. 2011), scoring criteria were used to assign each arrangement a score for each of the stages of its policy cycle (Table 3.2). The full conceptual background to this process is provided by Mahon et al. (2013; 2015). In this assessment the advisory and decision-making stages of the policy cycle were each considered in two modes -- policy mode and management mode -- making a total of seven stages assessed: (1) Provision of policy advice, (2) Policy decision-making, (3) Provision of management advice, (4) Management decision-making, (5) Management implementation, (6) Management review, and (7) Data and information management (Table 3.2). Provision for carrying out each of these policy cycle stages is considered to be an important component of the institutional arrangements needed for good governance (Fanning et al. 2007, Mahon et al. 2013). The scores in each case ranged from 0 to 3 and are intended to reflect the institutional strength of the arrangement for transboundary governance at that particular policy cycle stage. An overall policy cycle completeness score is derived from the sum of scores of the individual stages and expressed as a percentage of the highest score attainable. It is important to note that a *high* completeness score means that the arrangements are specified on paper but does not mean that they are operating in practice.

Table 3.2 The criteria used to assign scores to the policy cycles stages for each arrangement.

Provision of policy advice - responsible body and score	0 = No transboundary science policy mechanism, for example COP self advises ⁸ 1 = Science-policy interface unclear - irregular, unsupported by formal documentation 2 = Science-policy interface not specified in the agreement, but identifiable as a regular process 3 = Science-policy interface clearly specified in the agreement ⁹
Policy decision-making - responsible body and score	0 = No decision-making mechanism ¹⁰ 1 = Decisions are recommendations to countries 2 = Decisions are binding with the possibility for countries to opt out of complying 3 = Decisions are binding
Provision of management advice - responsible body and score	Same as for policy advice above
Management decision-making - responsible body and score	Same as for policy decision-making above
Management implementation - responsible body and score	0 = Countries alone 1 = Countries supported by secretariat 2 = Countries and regional/global level support ¹¹ 3 = Implemented through a coordinated regional/global mechanism ¹²
Management review - responsible body and score	0 = No review mechanism 1 = Countries review and self-report 2 = Agreed review of implementation at regime level 3 = Agreed compliance mechanism with repercussions
Data and information management - responsible body and score	0 = No DI mechanism 1 = Countries provide DI which is used as is 2 = DI centrally coordinated, reviewed and shared ¹³ 3 = DI centrally managed and shared ¹⁴

8 Nothing in the documentation indicates a mechanism by which scientific or policy advice is formulated at the transboundary level prior to consideration by the decision-making body.

9 This can be internal or external.

10 This refers to decisions on matters that will have a direct impact on ecosystem pressures or state. It does not refer to mechanisms for making decisions on the organisation itself, such as process or organisational structure.

11 This means support from regional programmes or partner organisations arranged via the secretariat.

12 For example a coordinated enforcement system with vessels following a common protocol and flying a common flag identifying them as part of the mechanism, as in the case of the Forum Fisheries Agency surveillance flag.

13 For both 2 and 3 data are checked for quality and consistency, but for 3 there is a place where all the data can be found, whether as actual data or metadata.

14 Here the regime could also be the actual collector and compiler of the data, as in the International Pacific Halibut Commission.

Typically, intergovernmental agreements fall into two categories: (1) constituting agreements¹⁵ and (2) implementing or operational agreements (Breitmeier et al. 2006). Constituting agreements are aimed at setting the broad context and issues for cooperation, with the expectation that these will be further refined and made actionable by operating agreements. The operating agreements are aimed at giving specific effect to the broader objectives of constituting agreements. They often appear as protocols or annexes to constituting agreements. In this study, protocols are treated as separate agreements as they often have different membership and timeframes to their constituting agreements, whereas annexes are part of the constituting agreement.

The analysis of policy cycle stage scores shows differences in strength among the policy cycle stages, and between constituting and operational agreements (Figure 3.1). Both types of agreements score higher for the advisory stages, where the majority score 3, than for the decision-making stages, where the majority score 1. This is because while the majority of arrangements do have clearly identified mechanisms for both policy and management advice, the decisions made are predominantly recommendations which contracting parties may or may not choose to implement. As might be expected, the extent to which decisions made are binding is considerably higher for operational agreements than for constituting agreements. As regards implementation, the peak for operational agreements is 0, which means that it is entirely up to the member countries (Figure 3.1). It is only slightly higher for constitution agreements with a peak at 1 indicating that there is some secretariat support for implementation. Overall, the picture for most policy cycle stages, and for overall completeness is that there is clearly considerable scope for strengthening most stages of the policy cycles for both types of agreement.

The analysis of policy cycle scores by issue shows some differences in strength among the issues (Figure 3.2). For both policy and management advice, the distribution of scores appears similar among issues, although advisory mechanism scores in fisheries and biodiversity arrangements were higher than for pollution. For decision-making, fisheries arrangements clearly scored highest, with decisions made for pollution being primarily in the form of recommendations for contracting parties. In contrast, fisheries arrangements scored lowest for implementation, which is predominantly at the level of contracting parties. Biodiversity and pollution arrangements (primarily within national waters) were considerably more likely to have regional level support.

Overall structure of arrangements

The analysis of the entire set of global and regional arrangements for ABNJ governance reveals an overall pattern that may provide a useful framework for identifying gaps and weak areas and for developing interventions to address them. The overall picture is one of two complementary sets of networks (Figure 3.3). The first set is the 'global-to-regional issue-based networks'. They are shown as vertical rectangles which reflect the major global arrangements for each of the four issues of fisheries, pollution, biodiversity and climate change. The second set is the crosscutting 'regional intersectoral clusters/networks'. They are illustrated in Figure 3.3 by horizontal rectangles representing five hypothetical 'regional intersectoral clusters/networks' (Regions A-E). The solid circles indicate that representation of 'global-to-regional issue-based networks' is incomplete in the regional clusters, reflecting gaps to be filled.

¹⁵ Also sometimes referred to as framework agreements.

Figure 3.1. The distribution of scores for each of the seven policy cycle stages, and overall policy cycle completeness for the two major types of arrangements (see Table 3.2 for the scoring criteria).

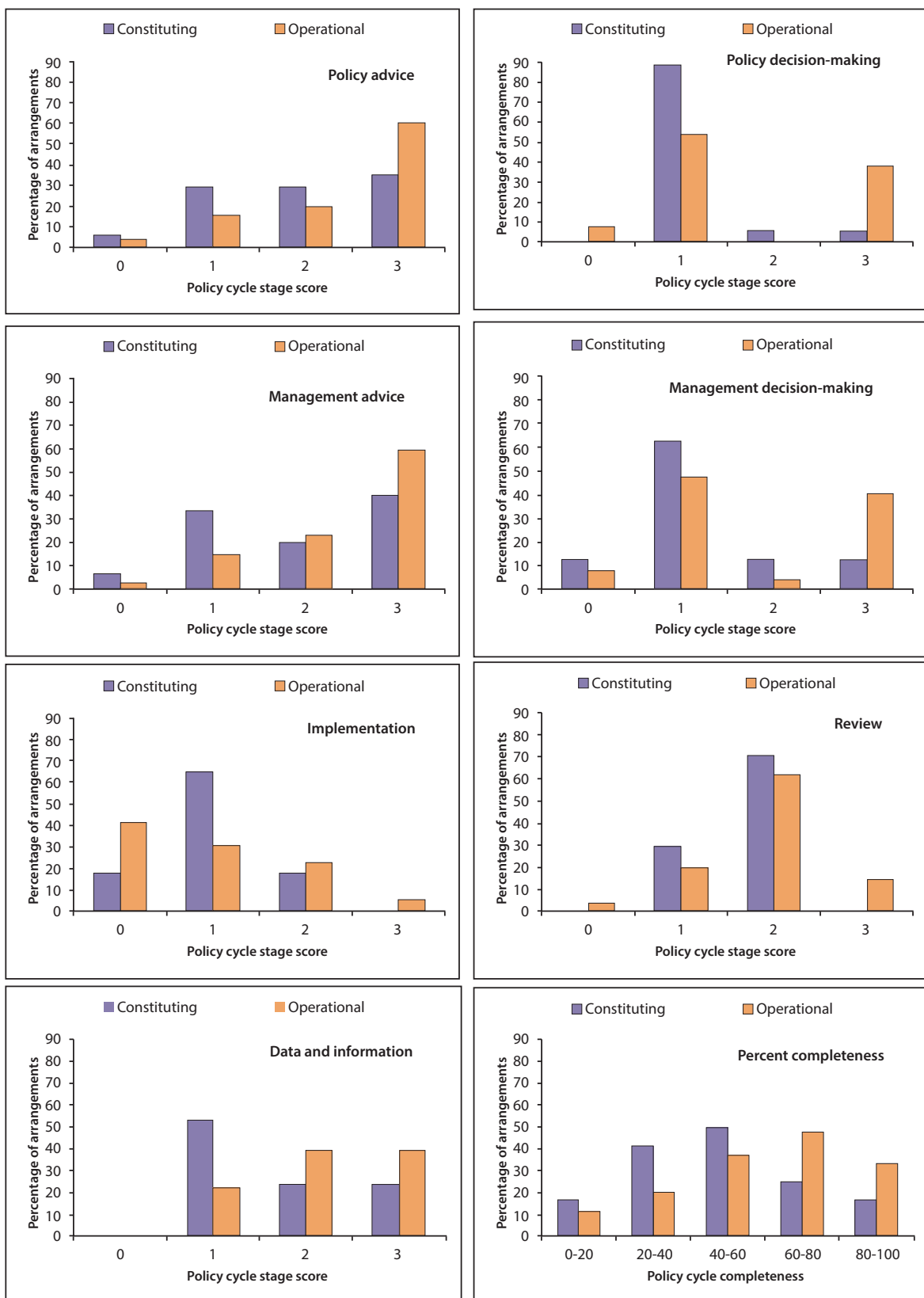


Figure 3.2. The distribution of scores by issues (fisheries, biodiversity and pollution) for each of the seven policy cycle stages, and overall policy cycle completeness. (see Table 3.2 for the scoring criteria).

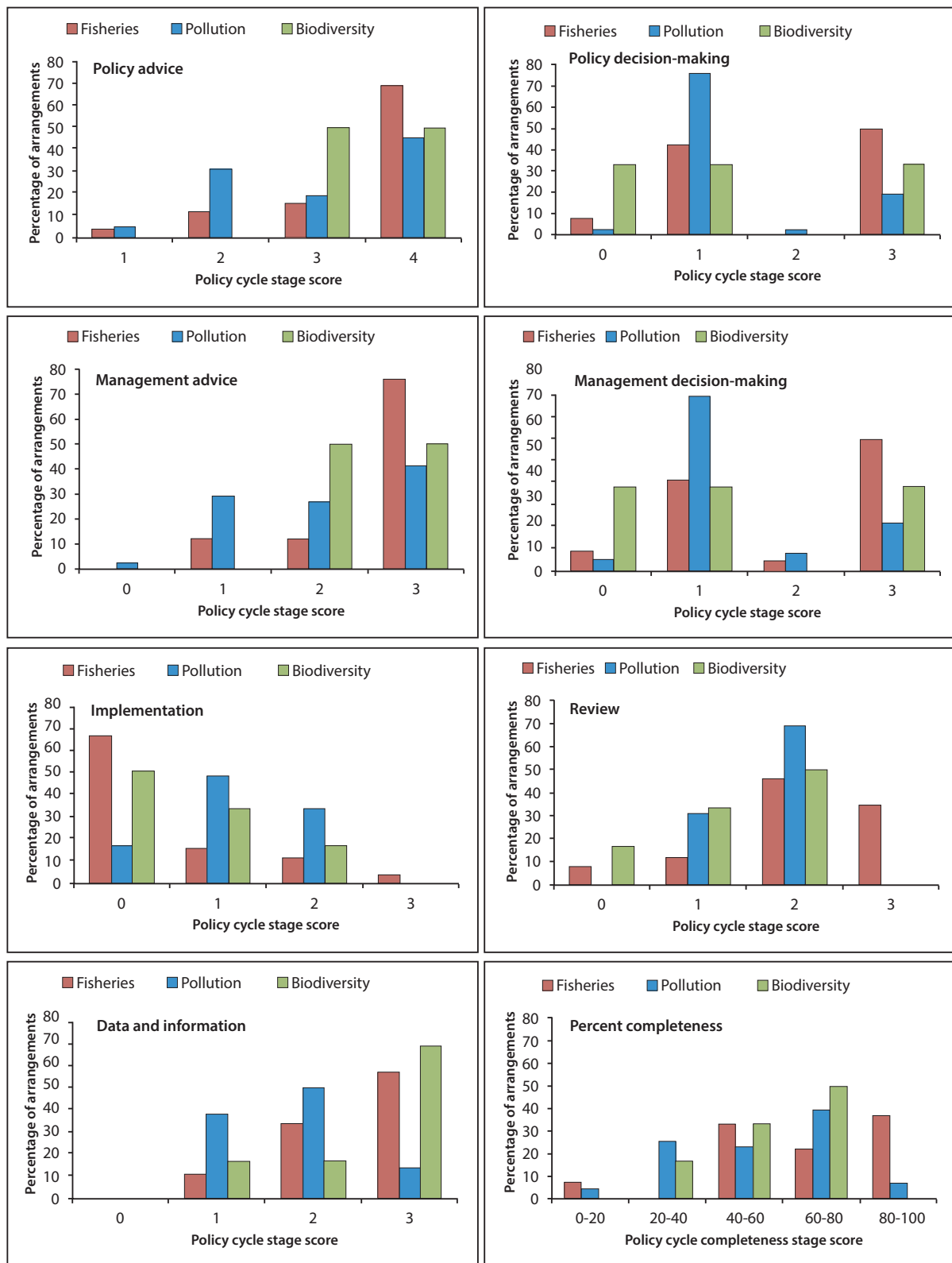


Figure 3.3 The global ocean governance structure comprising ‘global-to-regional issue-based networks’ of arrangements and complementary ‘crosscutting regional intersectoral networks’ of arrangements illustrated here for five hypothetical regions A-E. The solid circles indicate that the issue covered by the global-regional network is reflected in the arrangements comprising the regional cluster.

Issue areas		GLOBAL-TO REGIONAL ISSUE-BASED NETWORKS						
		Fisheries Straddling	Fisheries HMS	Pollution LBS	Pollution MBS	Biodiversity		Climate Change
Global agreements		UNFSA		GPA	MARPOL London	CBD	Ballast Water	UNFCCC Kyoto
Program/agency		FAO		UNEP-RS	IMO	UNEP-CBD, IMO		UNFCCC/WMO
REGIONAL CLUSTERS/NETWORKS	Region A	●	●	●	●			
	Region B	●	●		●			
	Region C	●		●	●	●		
	Region D			●		●		
	Region E	●			●	●		●

Global-to-regional issue-based networks

The global-to-regional issue-based networks comprise constituting and operational agreements at global and regional levels. They provide the potential for vertical interplay needed between regional and global arrangements. The majority of the arrangements that have been included in the database are either directly administered by, or associated with, the programmes of a relatively small number of UN agencies and programs which serve to anchor these networks as shown in Figure 3.3. It should be noted that the United Nations Convention on the Law of the Sea (UNCLOS) is a constituting agreement that provides an overarching framework for governance of the oceans, including ABNJ, and so is not shown in Figure 3.3. However, it should be noted that not all agreements with relevance to ABNJ are connected to UNCLOS, for example: CITES, CBD, GPA.

For fisheries, the UN Fish Stocks Agreement (UNFSA), along with the FAO Compliance Agreement and FAO Code of Conduct are the major global constituting agreements, with the FAO being the agency responsible for promoting implementation of its Code of Conduct and Compliance Agreement and the UN General Assembly (UNGA) being responsible for the UNFSA. Many of the Regional Fisheries Bodies (RFBs) and Regional Fisheries Management Organisations (RFMOs) in the database are established with reference to the Constitution of the FAO under Articles VI and XIV. Article XIV bodies are established by treaty, generally have a management mandate and are more independent than Article VI bodies (Freestone 2011). Other RFBs which are independently constituted by the contracting parties are also loosely associated with the FAO through an FAO-facilitated network of RFBs’ secretariats. The RFB network first convened in 1999 as the ‘Meeting of FAO and Non-FAO Regional Fishery Bodies or Arrangements’ (FAO 1999) and met four times before changing its name in 2005 to the Regional Fishery Body Secretariats Network (RSN).

To some extent, the Committee of Fisheries (COFI), a subsidiary body of the FAO Council, can be seen as an overarching policy setting body for RFBs globally, although none of the agreements or the voluntary code explicitly identifies COFI as playing this role. COFI presently constitutes one of two¹⁶ global intergovernmental fora where major international fisheries and aquaculture problems and issues are examined and recommendations addressed to governments, RFBs, non-governmental organisation (NGOs), fish-workers, FAO and the international community, periodically on a world-wide basis. COFI had met 29 times up to 2013. COFI has also been used as a forum in which global agreements and non-binding instruments were negotiated (FAO 2013).

The RSN first met in 2007 (FAO 2007) and has met twice since. These meetings, held in parallel with COFI meetings are not formal FAO meetings, but provide the opportunity for exchange of experiences and best practices among RFBs. The 2007 meeting was attended by 18 marine RFBs as well as RFBs for inland waters and several other related organisations such as the Southeast Asian Fisheries Development Center (SEAFDEC) and The International Council for Exploration of the Seas (ICES). In parallel with this, FAO has been promoting performance reviews of RFBs with a view to developing guidelines for best practices (Ceo et al. 2012). It is evident from the above that there is in place a mechanism that could be used for networking regional fisheries bodies and linking them with the major global arrangements, but with a focus on fisheries. This mechanism could also link these regional and global arrangements with fisheries related NGOs and research entities, but to achieve this, the meetings would have to be opened up to these organisations. An assessment of the performance of this mechanism is beyond the scope of this study.

The International Maritime Organisation (IMO) is home to another cluster of arrangements pertaining largely to pollution. It provides the secretariat for six global level operational agreements relating to marine based pollution and one relating to biodiversity - the Ballast Water Management Convention (BWMC).¹⁷ Given that these relate to global shipping, there is less imperative for them to be reflected in regional level arrangements. The IMO itself promotes implementation of these agreements at the regional level through five IMO Regional Presence initiatives.¹⁸ Perhaps more significantly, the promotion and implementation of IMO arrangements is often facilitated at the regional level through Regional Seas Programme protocols relating to: ship generated waste, oil spills, disposal of hazardous waste at sea, dumping at sea, and contamination from exploration. It should be noted that there are global level pollution arrangements that are not part of the IMO cluster. The Vienna Convention/Montréal Protocol, and the Stockholm Convention function independently.¹⁹

The Regional Seas Programme of UNEP, which began in 1974, is the most extensive initiative promoting regional implementation of global arrangements. There are 18 Regional Seas areas of which 17 are indirectly or directly connected to ABNJ and are included in the database. Of these 17, 5 are directly administered by UNEP, 7 were constituted under UNEP but are managed by other organisations and 4 are entirely independent. However, all with secretariats take part in UNEP organised regional seas activities, such as the series of 15 global level meetings of Regional Seas Conventions and Action Plans (RSCAP) which began in 1998. The mandate of all but four of the Regional Seas Agreements is limited to waters within national jurisdiction.

One of the most prominent activities across Regional Seas areas is implementation of the 1995 Global Programme of Action for the Protection of the Marine Environment from Land-based Activities (GPA) (UNEP/GPA 2006). This is approached through regional protocols (11) addressing land-based sources of pollution and activities (LBSA). However, this is not the only global level agreement for which regional level implementation is pursued under the Regional Seas Programme and its conventions. As indicated above, several IMO based global agreements are reflected in Regional Seas protocols. Regional level implementation of the marine aspects of the major global biodiversity

¹⁶ The UNGA also serves in this role both through its review conferences of UNFSA implementation and its annual sustainable fisheries resolution. FAO COFI is largely fisheries ministries, whereas the UNGA represents all nations and all interests.

¹⁷ It is due to the biodiversity focus of this arrangement that it is not included under MARPOL as an annex (Jose Matheickal, pers comm. February 2014).

¹⁸ One Regional Maritime Adviser for the Caribbean, based in Trinidad and Tobago, and four Regional Coordinators based in: Côte d'Ivoire for West and Central Africa (Francophone), Ghana for West and Central Africa (Anglophone), Kenya for Eastern and Southern Africa and the Philippines for East Asia.

¹⁹ The arrangements for the newly created Minamata Convention on Mercury remain to be determined.

arrangements - Convention on Biological Diversity (CBD), Ramsar Convention, Convention on International Trade in Endangered Species (CITES), and Convention on Migratory Species (CMS) - is also often pursued via Regional Seas protocols (Mahon et al. 2015).

In most cases, the protocols relating to biodiversity are more recent than those for pollution. Thus, there has been gradual expansion and update of many of the Regional Seas agreements to include biodiversity. However, few Regional Seas conventions or programmes address biodiversity in ABNJ (Pacific Island Region, Southern Ocean, Northeast Atlantic, Mediterranean). Protocols and annexes relating to biodiversity are mainly focused on species and habitats in areas of national jurisdiction, usually through the establishment of protected areas. While these protected areas may at times protect straddling or highly migratory species such as sea turtles and sea birds, the respective protocols are not considered to be substantially related to ABNJ biodiversity conservation.

While the networks described above help to make global level fisheries and pollution arrangements applicable at the regional level, there is no comparable network or institutional arrangement for place-based biodiversity conservation in ABNJ. As indicated above, several important biodiversity arrangements may be facilitated at the regional level under the Regional Seas Secretariats but these are almost entirely within areas under national jurisdiction. The 2008 effort under the CBD to address this gap is focused on cataloguing and describing Ecologically or Biologically Significant Areas (EBSAs) and is aimed at providing scientific information and advice for place-based biodiversity conservation in both AWNJ and ABNJ (Druel 2012). However, there is still a lack of a complete global level policy process for ABNJ that can make decisions about which areas should be protected, and the regional institutional arrangements needed for implementation (Druel et al. 2013).

Climate change, the fourth issue to be addressed, is in some ways qualitatively different from the other three. Its effects will be experienced in all regions and ecosystems of the planet. Thus far, discussions about mitigation have taken place in global level arenas and do not appear to have a regional implementation component with an ocean focus. Adaptation on the other hand will need to be implemented at regional, national and local levels. Only three regional agreements could be found that made reference to addressing climate change adaptation or vulnerability in ABNJ - the Antarctic Treaty System, the Arctic Council, and the Pacific Islands Forum - of which the latter two are constituting agreements. It is not clear from the agreements examined how climate change will be dealt with at the regional level. It is likely that it will be dealt with largely as a crosscutting issue in sectoral agreements.

These 'global-to-regional issue-based networks' play an important role in facilitating lateral linkages among regional organisations and connecting them with the global level arrangements. However, they are largely sector or issue specific, leaving the question as to how integration across issues and sectors is structured for ocean governance. It can be argued that there is a need for integration at both global and regional levels. The need to integrate across marine related issue areas within the UN system was highlighted in 1992 at UNCED. In 1993, the UN agencies dealing with ocean and coastal issues formed the Sub-committee on Oceans and Coastal Areas of the UN Administrative Committee on Coordination (ACC SOCA) to coordinate activities relating to Chapter 17 of Agenda 21. In 2003, it was decided to establish a separate Oceans and Coastal Areas Network (subsequently renamed UN-Oceans) to provide effective, transparent and regular inter-agency coordination on ocean and coastal issues within the United Nations system. UNESCO-IOC hosted the first meeting of UN-Oceans in 2005. Altogether, there are 15 bodies with membership in UN-Oceans (Departments of the UN Secretariat, UN Programmes and Funds, UN Specialized Agencies, related organisations and conventions).

Thus far, UN-Oceans has not had any dedicated staff. The Coordinator and Deputy Coordinator and with them the Secretariat rotated among member bodies every two years. An evaluation of UN-Oceans concluded that due to its ad hoc structure and lack of dedicated human and financial resources, it was ineffective, and unlikely to be able to achieve its objectives (Zahran and Inomata 2012). The review recommended that UN-Oceans be provided with a Secretariat and that it be institutionalised with clear procedures for program development and decision-making. The review also recommended that countries should have ocean focal points with which UN-Oceans would interact directly.

New Terms of Reference (ToR) for UN-Oceans were approved by the UNGA in 2013 (UNGA resolution 68/70) and further reviewed in 2014. These ToRs name the UN Division for Ocean Affairs and Law of the Sea (UN-DOALOS) as the permanent focal point for UN-Oceans. What is not clear is whether the mechanism will be provided with the resources needed to be effective. The increased prominence of oceans at Rio+20 suggested that coordination of UN activities in relation to oceans would be likely to receive increased attention from the UN in the coming years (UN Secretary General 2012).

There is a substantial literature on inter-relations (or as it is referred to in the governance literature, interplay) among international institutions upon which a strengthened UN-Oceans could draw (Stokke 2001, Young 2002, Oberthur and Gehring 2006, Oberthur 2009, Stokke et al. 2011). Oberthur (2009) presents a typology of interplay among international institutions and discusses approaches to managing interplay. One of the key areas for enhancement is systematic promotion of inter-institutional learning. This can be pursued by explicitly recognising the importance of institutional process and memory both within and between arrangements, such that process promotes learning and knowledge and experience are retained in a form that is shareable. Attention to clear and transparent policy cycles and in particular science-policy interfaces is critical for building 'learning institutions'. However, questions about limited mandates, rigid hierarchies and varying priorities leave the future of constructive interplay unsure, unless there is a strong call for enabling mechanisms for cooperation from the UNGA or via a new international agreement.

Regional clusters for EBM

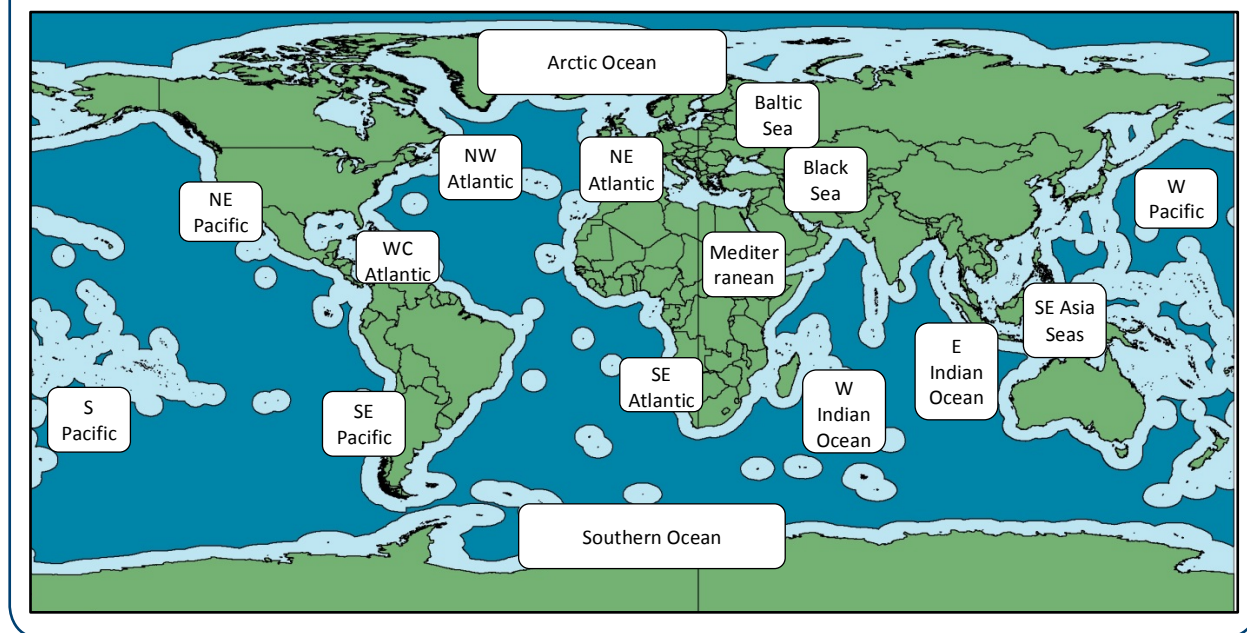
At the regional level, there appear to be 16 regions in the world where arrangements pertaining to ABNJ issues (and often to ocean issues in general) overlap and interact (Figure 3.4). The governance literature recognises the occurrence of such clusters of arrangements and refers to them as 'regime complexes' when they exhibit certain characteristics – three or more arrangements interacting based on a common purpose and set of principles but not hierarchically interrelated (Orsini et al. 2013). These clusters of arrangements provide potential for improving regional or 'place-based'²⁰ implementation of global arrangements. They also provide potential arenas for horizontal interplay needed for integration across issues, and for the integration of regional issue-specific arrangements with the wider spectrum of regional economic cooperation activities.

In this section, these clusters are examined to determine if they do indeed form entities for which the whole is, or could be, greater than the sum of the parts. If so, these could provide an entry point for assessment of governance architecture at the regional level. The existence of these regional clusters also raises the question as to whether global ocean governance can be enhanced by strengthening them and promoting integration among them. This would be best done in parallel with strengthening the global-to-regional issue-based networks discussed in the previous section, which together with the regional clusters can be seen as forming a single global ocean governance architecture.

A full examination of the connectivity among arrangements within the regional clusters would require considerable information on their interplay which may comprise several aspects, ranging from data sharing to full collaboration in decision-making and implementation. Information at this level of detail is not available for the regional clusters identified directly from the documentation for the regional clusters identified and would require more intensive enquiry. Therefore, this study can only undertake a preliminary evaluation of the interrelations among arrangements within regional clusters based on formal interactions documented for the organisations. Undoubtedly, many interactions are not explicit in the material reviewed for the arrangements. For example, organisational representatives may attend meetings of other organisations in the cluster even when there is no formal interaction between the arrangements.

²⁰ The term 'place-based' is used broadly here in the sense of Young et al. (2007) to encompass scales from regional down to much smaller specific areas which may be identified as in need of management.

Figure 3.4. The 16 regional clusters identified.



Each of the 16 regional clusters shown in Figure 3.4 is fully described by Mahon et al. (2015) with:

- A diagram showing the types of arrangements, the issues they cover and the documented interactions among them;
- A table showing the spatial overlaps of the main arrangements in the cluster (based on GIS shape-files for the arrangements);
- An overview of the regional cluster that covers (i) its spatial extent, (ii) the extent to which there appears to be overarching integration, (iii-vi) what is in place for each of the four issues (fisheries, pollution, biodiversity, climate change), and (vii) its relevance to ABNJ.

The description for the Western Central Atlantic cluster is included below as an example. Details of the other 15 clusters can be found in Mahon et al. (2015).

The clusters vary widely with regard to all of the above characteristics, including spatial coherence. Frequently, regional arrangements addressing the issues of concern were developed without reference to each other and other regional arrangements operating in the same area. Some arrangements, notably those involving RFMOs for highly migratory species (HMS), appear in several clusters because of their large spatial scale. For example, ICCAT is included in each of the five Atlantic Ocean clusters. Only a few of the clusters were found to have clearly identifiable overarching mechanisms for policy development and coordination (for example: Pacific Islands Region, Arctic, Antarctic, Mediterranean, Southeast Pacific).

The Western Central Atlantic: The arrangements comprising the Western Central Atlantic cluster are depicted in Figure 3.5. The spatial overlaps among the key arrangements are shown in Table 3.3, and the regional cluster is summarised in Table 3.4.

Figure 3.5. The arrangements comprising the Western Central Atlantic regional cluster (shaded arrangements address areas within national jurisdiction only)

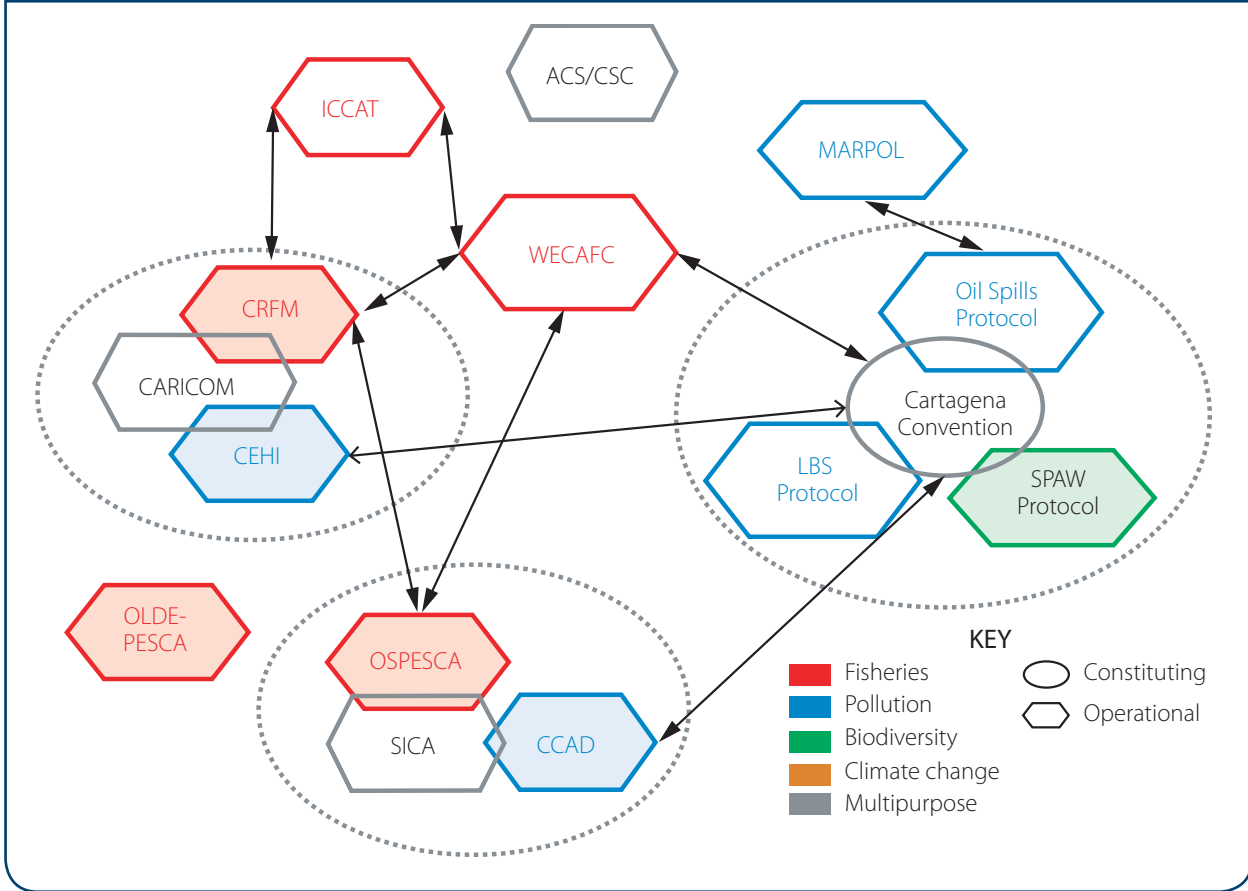


Table 3.3. Areas (million km²) covered by the key arrangements in the Western Central Atlantic regional cluster and the percentage overlap of the arrangements

	CRFM	ICCAT	OLDEPESCA	OSPESCA	WECAFC	Cartagena
Area	2.0	97.4	6.9	2.1	18.2	6.6
CRFM		2	9	3	11	30
ICCAT	100		42	37	100	100
OLDEPESCA	32	3		59	16	43
OSPESCA	3	1	18		4	12
WECAFC	100	19	42	37		100
Cartagena	99	7	42	37	36	

Table 3.4 Characteristics of the Western Central Atlantic regional cluster

Spatial extent	The arrangements comprising this regional cluster are largely focused on the actual area of the Western Central Atlantic or parts of it, with the exception being ICCAT which has Atlantic Ocean-wide mandate. Most focus primarily on AWNJ.
Integration	While there are several linkages among arrangements, there is no body with an overarching mandate for coordination.
Fisheries	There are several bodies with responsibility for fisheries in this region. The FAO RFB (WECAFC) covers the entire region, while others such as CRFM and OSPESCA are part of subregional integration organisations. OSPESCA and OLDEPESCA also have mandates outside the region, in the Pacific.
Pollution	The Cartagena Convention's Oil Spills and LBS Protocols are the main arrangements for pollution
Biodiversity	The Cartagena Convention's Specially Protected Areas and Wildlife Protocol addresses biodiversity only within EEZs in the region and is not included in the database.
Climate Change	There are no climate change arrangements within the region that specifically address ABNJ.
Relevance to ABNJ	As with the other semi-enclosed seas, the relevance of the Western Central Atlantic Region is largely with regard to possible impacts of regional level pollution on ABNJ. However, in this region linkages with fisheries for HMS are perhaps more important than for most of the semi-enclosed seas.

Discussion

This study has focused on the governance arrangements and architecture for ocean ABNJ. It has taken a structural approach looking at the many arrangements that relate to governance of ABNJ and the way that they appear to be interrelated, globally and regionally. It has looked at the individual arrangements from the perspective of whether they have been established in such a way as to be able to carry out the full policy process considered necessary for 'good governance'. The study has also looked for any patterns among organisations at global and regional levels that may relate to governance functioning and that may also make it easier for stakeholders to understand and interact with global ocean governance. Attention was paid to science-policy interfaces, and the extent to which there appeared to be separate sets of governance arrangements for areas under and areas beyond national jurisdiction.

Good governance and effective governance

The assessment of the individual arrangements indicated areas of weakness in the policy cycle stages for ocean governance arrangements. A key challenge in this study was to deal with governance arrangements and architecture without venturing into the assessment of governance effectiveness. This limitation was necessary because assessing governance effectiveness would involve evaluation of outcomes and impacts that require a substantial amount of physical, ecological, social and economic information over appropriate periods of time. Much of what was assessed in the policy cycle scoring process can be considered as reflecting whether 'good governance' practices are in place (Young 2013, UNDP 2014). For example, having clearly specified processes and mechanisms across the seven policy cycle stages is seen as likely to improve characteristics of 'good governance' such as transparency, accountability, and ease with which stakeholders can engage with the process. Ultimately, these characteristics might be expected to produce better governance results, and are often cited as being desirable characteristics of governance processes in their own right (Lemos and Agrawal, 2006, Lockwood et al. 2010). However, the state of governance research is such that it is not possible to be definitive about the relationship between these 'good governance' characteristics and governance effectiveness.

The global architecture for ocean governance

This study takes a holistic perspective of global architecture for ocean governance as comprising ‘issue-based global-regional networks’ and cross cutting ‘regional intersectoral clusters/networks’. This structure may be seen as emerging, but far from complete and with much dysfunctionality. It is thought that the holistic perspective provided here can move the global-regional ocean governance community towards a better understanding of what has been achieved over the past several decades, where the major gaps are, and what the critical next steps may be to address these gaps and strengthen the entire system. This holistic perspective is thought to be of value in helping those working within parts of the system to see the full picture and especially those working outside the system to engage with what has been described as a very complex, disordered and fragmented set of arrangements for the ocean (Freestone 2010; Rothwell and Stephens, 2010, Töpfer, et al. 2014).

The ideas relating to networks, nesting of arrangements, the importance of scale and interplay among arrangements underpinning this perspective are prominent in conceptual discourses on governance (Young 2002, Kooiman et al. 2005, Sorensen and Torfing 2007, Young 2013) and many have been derived from analyses of global and regional regimes and regime clusters (Miles et al. 2002; Biermann et al. 2009b; Biermann and Pattberg, 2012). Polycentric approaches such as regional clusters juxtaposed with global clusters facilitate achieving benefits at multiple scales as well as experimentation and learning from experience with diverse policies (Ostrom 2010). There is also an ongoing discourse about how lessons learned from research on governing ‘the commons’ at smaller scales might inform approaches at regional and global levels (Dietz et al. 2003). However, much of this thinking has failed to gain traction in the world of practitioners and institution builders for global environmental governance. It is thought that this study can make a contribution towards bringing those working at the conceptual level together with those responsible for making regimes work in practice.

Regional clusters are given special attention in the next section, because the global-to-regional, issue-based networks have been the primary focus of global ocean governance thus far and have received the most attention regarding strengthening. Despite this, there are many weaknesses in these global-to-regional, issue-based networks that should be addressed, in particular the need for integration among them. In this regard, the upgrading of UN-Oceans or development of an effective alternative should be a priority.



Characteristics and potential role of regional clusters

The 16 regional clusters for ocean governance reflect a diversity of regional level approaches to pursuing (or not) intersectoral integration and ecosystem-based management for the ocean. While the governance literature has recognised the existence of regime complexes (Orsini et al. 2013), the regional clusters in this study appear to be different, being primarily spatially defined and with a broad focus (or potential focus) on marine EBM. Within the clusters identified, interaction appears highest among fisheries management arrangements. In many instances Regional Seas conventions and action plans are also active in integrating pollution and biodiversity aspects, although few include ABNJ. In most clusters, the FAO Ecosystem Approach to Fisheries (EAF) and the UNFSA mandate to protect marine biodiversity are obvious starting points for building capacity for EBM and would require linkages with Regional Seas and other non-fisheries arrangements in the cluster. One can envisage the strengthening of clusters to the level where the full range of ocean governance interests, including biodiversity and pollution in ABNJ, is engaged and integrated.

Few of the clusters were found to have clearly identifiable overarching mechanisms for integrated policy development and coordination. The Pacific Islands Forum (PIF) and its Council of Regional Organisations of the Pacific (CROP) is the most prominent example of such a mechanism. Two other mechanisms developed with the express purpose of coordination are the Antarctic Treaty System and the Arctic Council. In the Mediterranean, coordination for sustainable development is approached through the establishment of the Mediterranean Commission on Sustainable Development (MCSO) in 1996, in association with the Barcelona Convention. The Secretariat of the Barcelona Convention supports the activities of the MCSO. In the southeast Pacific, the interaction between the FAO and CPPS, which also serves as the Secretariat for the Lima Convention, has the potential to promote EBM. In Southeast Asia, PEMSEA, a home-grown coordination body emerged as a bottom-up response to a perceived lack of regional policy/coordination capability. In other regions, an ocean specific mechanism for overarching policy development and coordination is either absent or is partially taken up by the Secretariat of the Regional Seas Conventions (or its counterpart). However, this may mean that linkages between the major issues of Regional Seas Conventions, such as pollution and environment/biodiversity, with other sectors, notably fisheries, shipping and tourism, remain weak or absent.

The extent to which the clusters form discrete spatial entities is also highly variable. The regional agreements comprising them vary considerably in location and size of area covered. The spatial relations among agreements within regional clusters cannot be easily shown on static maps, so this is not attempted here. They can be explored interactively in the OneSharedOcean.org website developed for TWAP. The regional arrangements were usually developed without reference to other regional arrangements operating in the same area and were designed to cover the specific issue of concern. Some arrangements, notably the RFMOs for HMS cover large ocean areas and appear in several clusters. ICCAT, for example, is included in each of the five Atlantic Ocean clusters. Ultimately, if regional clusters are to become a focus of ocean governance reform and strengthening, it will be necessary to better define their spatial scope.

In most clusters, provisions for technical advice appear to be largely by mechanisms that are internal to the individual arrangements that comprise them. A few of the regional clusters also appear to have crosscutting arrangements for the provision of technical advice involving separate bodies, namely PICES in the North Pacific, ICES in the North Atlantic, the SCAR in the Antarctic and the IASC in the Arctic. Each of these technical advisory arrangements has a different history and relationship with the other arrangements in their cluster. They may provide some degree of integration across issues, but solely at the technical level. These crosscutting providers of technical advice may be a useful component of improved integration, particularly if they are mandated to take a more proactive role in identifying interactions among issues that should be considered in policy making.

The extent to which the arrangements within regional clusters are integrated with the broader regional political economies undertaken by bodies such as ASEAN, SADC, SAARC, MERCOSUR and CARICOM is also of interest. Söderbaum and Granit (2014) argue that this is important if transboundary water issues are to achieve the desired prominence at the regional level and be mainstreamed into regional programmes. This is likely to become increasingly important if the trend of the past few decades towards regionalism continues (Klůvanková-Oravská and Chobotová 2012). The information collected in this study is insufficient for a comprehensive assessment of the extent to which these linkages occur or the opportunities for developing them. However, some preliminary observations are possible. Only the coordinating mechanisms for the Pacific Island Region and the Mediterranean Sea appear to have strong linkages with regional multipurpose political organisations. Some connectivity is evident in the Western Central Atlantic where agencies associated with the two major regional integration organisations, the Caribbean Community and Common Market (CARICOM) and the Central American Economic Integration System (SICA) are part of the cluster despite the absence of an overall coordinating mechanism (Mahon et al. 2013). In the Bay of Bengal area in the Western Indian Ocean, there appears to be some connectivity between fisheries and the Bay of Bengal Initiative for Multi-Sectoral Technical and Economic Cooperation (BIMSTEC). In southern Africa, there is a Fisheries Protocol that provides some connectivity between fisheries arrangements and South African Development Region (SADC). In the Pacific, the Asia-Pacific Economic Cooperation body (APEC) has an Oceans and Fisheries Working Group (OFWG) that links the work of fisheries bodies with this multipurpose organisation. However, for the most part, these mechanisms are focussed on AWNJ. As indicated above, these are preliminary observations and will require further investigation. The findings from this study indicate that despite their current deficiencies, regional clusters could have a potentially important role in implementing EBM in their respective regions, including ABNJ if their mandates are extended, and should be the focus of initiatives to build and strengthen them. This view is supported by Rochette et al. (2014) and consistent with strategy 6 of the UNEP Regional Seas Strategic Directions 2013-2016 (UNEP 2014). The regional clusters would complement the desired 'global-to-regional, issue-based networks'. To pursue this, further work needs to be done on assessing their role and developing approaches and programs to strengthen them.

There are several facets to strengthening the structure and functionality of regional clusters as governance units. Broadly, these are the extent to which:

- the arrangements that comprise them are geographically coherent (spatial overlap and fit);
- the individual arrangements within the cluster reflect good governance structure (as per the assessments in this study) and practice;
- there are functional linkages (interplay) among the arrangements comprising the cluster;
- clusters are vertically linked to global processes; and
- they share a common purpose and set of principles and can deal with one another as equals.

These all need to become the focus of increased attention that seeks to build regional clusters within which there are shared values and principles, such as conservation of biodiversity, accountability, transparency, efficiency thought to be essential for 'good governance'.

Science-policy interfaces

The UNEP Foresight Process on Emerging Environmental Issues for the 21st century, concluded that the crosscutting issue "Broken Bridges: Reconnecting Science and Policy" is the fourth most pressing one regarding efforts to achieve sustainable development (UNEP 2012). The panel noted that critical scientific knowledge is not being communicated effectively to audiences ranging from decision-makers to the general public. Many of the arrangements assessed state 'best use of scientific information available' as a foundational principle. To give effect to this principle, it is essential that there be clearly identifiable mechanisms for the transformation of available science into policy and management advice that can be used by decision-makers. These mechanisms are referred to here as science-policy interfaces.

The importance of the science-policy interface is a main reason for the policy cycle based approach in this assessment and more explicitly the inclusion of the policy cycle stages relating to development and provision of policy and management advice. While these fields provide insight into the science-policy mechanisms in place in arrangements, there are other important factors that determine their functionality. These include the extent to which quality information is available, and the extent to which there is a demand from the decision-makers for scientific information. Both of these factors are also reflected in the policy cycle, as the data and information and decision-making stages. Ultimately, however, it is the linkages among the policy cycle stages just mentioned that will determine whether the science-policy interface is functional and effective. These linkages could not be evaluated within the scope of this assessment and should be a focus of further work (Mahon et al. 2015)

It is also important to look beyond the mechanisms within individual arrangements to determine if there are identifiable overarching science-policy interfaces within the global and regional networks. These are thought to be essential for the network integration needed for EBM. The science-policy interfaces at each of the three levels are examined in greater detail by Mahon et al. (2015). The findings suggest that some of the issues requiring further investigation could include the extent to which:

- the advisory mechanism is independent of the decision-making and implementation mechanisms;
- policy advice tends to come from the same body that is providing technical/management advice; and
- science-policy interface processes are adaptable with regard to being able to change the questions that are being put to advice providers.

Assessment of current status

The evaluation of the strengths of the policy processes for arrangements for ABNJ and the overall global structure constitute an assessment of what is currently in place. This is a partial baseline assessment of ocean governance architecture. However, there are other aspects of governance architecture that could be pursued to develop a more comprehensive baseline. These include:

- Analysis of the spatial fit of arrangements and regional clusters to the spatial issues, for example the extent to which the multiple spatial aspects of biodiversity are covered at the global and regional levels in ABNJ;
- The extent to which there is spatial coherence among arrangements within a regional cluster;
- The extent of engagement of countries in arrangements, regional clusters and global networks as indicated by signing of the arrangements and by their engagement in processes;
- The extent to which there is progress within arrangements in moving towards EBM such as the adoption of EBM as a principle and/or establishment of EBM Working Groups;
- The extent to which there is a mechanism specified for integrating policy and management across issues within regional clusters and at the global level; and
- The linkages among arrangements, or clusters of arrangements.

A spatial analysis of the fit of arrangements and clusters to the issues requires additional information on the distribution of ecosystems, resources, and sources of negative impacts. For fisheries, the distribution of fishery resources is well known, at least for ABNJ fisheries since these are largely commercial. Mapping these against the arrangements developed for their governance should be a relatively straightforward task. Spatial coverage of fisheries for HMS is essentially complete, provided by five well-established RFMOs (ICCAT, IATTC, IOTC, WCPFC, CCSBT) (Molenaar 2005, Freestone 2011). In contrast coverage for demersal fishery resources is much less complete, with the majority of the South Atlantic and North Pacific having no coverage, as well as smaller but significant areas in other oceans (Molenaar 2005, Freestone 2012). Furthermore, RFMOs with responsibility for demersal resources in ABNJ are relatively recent.

The situation for ecosystems and biodiversity in ABNJ is much more complex and less advanced (Druel et al. 2012, Ban et al. 2014). The development of classification systems for, and information on, the distribution of marine ecosystems is at a relatively early stage in development. It was only in 2007 that classification of coastal and shelf regions into marine eco-regions appeared (Spalding, et al. 2007). Equivalents for ABNJ have only recently been developed (UNESCO 2009, Harris and Whiteway 2009, Rice et al. 2011, Spalding et al. 2012, Watling et al. 2013). The alternative to a comprehensive, zoning, approach to ecosystems and biodiversity in ABNJ, has been to encourage competent international organizations to apply the information available on EBSAs to design management measures capable of avoiding significant adverse impacts, but this approach has not gained traction as there is as yet no mechanism to encourage cooperation on biodiversity in ABNJ. For this reason, many governments, scientists and NGOs are proposing a new agreement under UNCLOS that would provide for a global level coordinating mechanism, establish common objectives and principles including ecosystem-based management, systems of marine protected areas, and procedures for environmental impact assessment, as well as to provide funding to incentivize cooperation and enhance the capacity of developing countries (Hart 2008, Druel and Gjerde 2014).

A spatial perspective on coverage of biodiversity in ABNJ, and indeed the ocean overall would provide an unfavorably biased picture. While there are several global and regional arrangements with wide geographical coverage, they may be narrow in terms of the coverage of species or ecosystems, for example, the Agreement on the Conservation of Albatrosses and Petrels, which is global but applies only to these species, the two sea turtle MOUs for the Americas and Indian Ocean/Southeast Asia region or the polar bear agreement. The Ballast Water Convention is also global but provides coverage for a very specific issue; introduction of alien invasive species by ballast water discharge.

Gaps in pollution coverage of LBS and MBS at the regional level are related to the extent to which Regional Seas conventions and their pollution related protocols are in place to address pollution within areas under national jurisdiction that can, in most cases, ultimately be transported into ABNJ. Here there are numerous significant gaps in coverage, many of them in areas of high coastal population and extensive marine activity (Mahon et al. 2015).



A comprehensive baseline for ocean governance architecture will also require considerably more detail on the structural aspects of the global framework for ocean governance described in this report. For example, the extent and nature of vertical and lateral interplay among arrangements is an important aspect of architecture that could not be adequately explored in this assessment. While the identification of networks and regional clusters is based on inferred linkages, a baseline that would provide a basis for monitoring change should include information on actual linkages. This requires a substantial investigation using approaches such as social network analysis.

One ocean, one governance architecture?

The perspective on the overall, emerging, global architecture for ocean governance developed in this study provides the opportunity to take a holistic view of the entire set of arrangements and their interrelations. In some areas, there may be overlap between arrangements that pertain to ABNJ and those that pertain to AWNJ. Some regional regime clusters include a combination of arrangements with mandates for areas within EEZs, mandates for ABNJ and mandates for straddling issues. Consequently, it may be most appropriate to perceive ocean governance arrangements globally as a single set of integrated arrangements structured as described in this study: ‘global-to-regional issue-based networks’ complemented by ‘regional intersectoral clusters’. This structure could reflect what is desirable and therefore needed to address governance in both ABNJ and AWNJ in an integrated and holistic fashion. The key point regarding structure is that it is more advanced for AWNT, and weak for ABNJ, particularly with regard to biodiversity and ecosystems.

Conclusions and recommendations

The key conclusions of the study are:

- Normative characteristics representing ‘good governance’ can be assessed in ocean governance arrangements as a basis for targeting interventions and monitored improvements, but ‘good governance’ may be context specific;
- There are significant gaps in coverage of the issues for ABNJ particularly for biodiversity, but also to a lesser extent for pollution and fisheries for straddling and demersal stocks;
- The entire set of governance arrangements for ABNJ and AWNJ may be best approached as a single global-ocean governance structure; and
- The perspective of the single global-ocean governance structure as comprising ‘global-regional issue-based networks’ and ‘regional intersectoral clusters’ provides a framework that may help to improve understanding of the very complex, disordered and fragmented set of arrangements for the ocean.

From this perspective, the emphasis should then be on strengthening the existing set of global/regional arrangements to address deficiencies and fill gaps. This includes:

- Strengthening regional clusters (both mandate and capacity) to address issues in adjacent ABNJ;
- Strengthening the global level constituting and operational arrangements for biodiversity;
- Paying attention to structures that are needed to improve adaptive capacity;
- Exploring ways of strengthening lateral linkages among regional clusters; and
- Subscribing to a general emerging set of principles, in particular conservation in addition to sustainable use, as well as the ecosystem and precautionary approaches, that cuts across AWNJ and ABNJ.

Based on the analysis conducted for this study, recommendations can be made in three areas:

- (1) Individual arrangements;
- (2) Regional intersectoral clusters; and
- (3) Global-to-regional issue-based clusters.

At the level of individual arrangements, there is the need to support monitoring of the extent to which ‘good governance’ practices are observed and to assess how these practices relate to governance effectiveness. Monitoring of ‘good governance’ should be context specific, based on a common set of criteria. The refinement of ‘good governance’ criteria at the arrangement level will be an iterative process.

Strengthening regional clusters of agreements, particularly so that they can undertake EBM in offshore waters, including ABNJ, is seen as a critical component of strengthening ABNJ governance. This will include promotion of integration mechanisms, expansion of mandates to include biodiversity conservation in ABNJ, improvement of interplay among arrangements within clusters, as well as building new linkages with regional multipurpose organisations to increase political understanding of and support for ocean governance. Clearly this will also strengthen governance in AWNJ.

Vertical interplay between regional and global processes and the capacity to integrate at the global policy level is also weak and requires attention. UN-Oceans is currently the primary UN programme specialized to achieving such integration, and efforts to strengthen UN-Oceans appear to have stalled. However, the proposal for an UNCLOS Implementing Agreement, if it sets forth the conditions necessary for effective interplay (for example: non-hierarchical organizations operating in sync based on a common purpose and set of principles) could improve vertical as well as regional horizontal interplay for the key issue of biodiversity (Druel and Gjerde 2014).

3.1.3 Notes on Methods

The approach taken to the assessment was to assemble all governance agreements that were found to have relevance to the four issues of concern in the ABNJ: fisheries, biodiversity, pollution, and climate change. These agreements were compiled into a database to facilitate assessment of the extent to which the issues are covered either globally or regionally. The assessment also examined each arrangement from the perspective of policy processes to determine whether processes considered to be adequate for good governance are in place as described above. The arrangements were also examined from a spatial perspective to determine geographical overlaps and gaps as well as the extent to which ABNJ were covered by governance arrangements.

Developing the database of governance arrangements for ABNJ

An arrangement is any multilateral agreement, together with organisational structures and processes in place to give effect to it²¹. The determination of direct relevance is based on whether the agreement is intended to address an ABNJ or straddling issue. On this basis, all relevant global agreements were included as well as many regional ones, such as regional fisheries conventions and Regional Seas Programme conventions that were considered to be relevant to ABNJ. The process of identifying agreements continued until no new ones were found. Relevant agreements were sought in the literature and on the Internet where several databases of international agreements can be found²². The criteria for selection of regional agreements to be included differed depending on the issue area.

With regard to fisheries, all agreements for Regional Fishery Management Organisations (RFMOs) and Regional Fisheries Bodies (RFBs) with responsibility extending into ABNJ or for highly migratory or straddling stocks were included. It should be noted that this includes a wide diversity of types of fisheries bodies with mandates ranging from purely advisory to those with the capacity to make binding decisions on fisheries management (Molenaar 2005, Freestone 2011).

21 In the governance literature the term ‘regime’ is also often used to refer to arrangements as defined here.

22 Mainly: ECOLEX <http://www.ecolex.org/start.php>; National University of Singapore <http://cil.nus.edu.sg/2009/cil-documents-database/>; University of Oslo, Faculty of Law, treaty database <http://www.jus.uio.no/english/services/library/treaties/>; International Environmental Agreements (IEA). Database Project, <http://iea.uoregon.edu/page.php?file=home.htm&query=static>

With regard to pollution, the approach taken recognised that all land-based sources of pollution (LBS) impacting ABNJ pass through coastal waters. Therefore, regional agreements addressing LBS were considered to be directly relevant to ABNJ. Most marine-based sources of pollution (MBS) also have the potential to be transported by currents from EEZs into ABNJ. The exception might be dumping of non-polluting non-soluble solids. However, dumping agreements also cover many kinds of wastes that can be transported by currents and were therefore included. From the outset, this approach leads to a preponderance of pollution-oriented agreements which are primarily aimed at addressing coastal pollution problems.

For biodiversity, the inclusion of agreements oriented towards national waters was considered. These are primarily protocols arising from Regional Seas conventions. It was thought that while the inclusion of pollution agreements under Regional Seas conventions was important for the reasons given above, the case for inclusion of biodiversity agreements was less clear. For the majority of Regional Seas-based biodiversity agreements, the only connection with ABNJ would be when protected areas or other measures were established that provided protection for straddling or highly migratory species (HMS) such as sea turtles, seabirds, and marine mammals. It was decided that including these agreements would provide a biased picture regarding biodiversity conservation in ABNJ.

The inclusion of shipping arrangements was also considered. For example, IMO routing measures under the Safety of Life at Sea (SOLAS) Convention has been used to minimise impacts of shipping on biodiversity. However, it was agreed that this convention could not be perceived as having a stated mandate for biodiversity conservation or ecosystem-based management (EBM), and that it should not be included in the database.

For each of the agreements included in the database, a variety of information was obtained. The primary sources for the information included in the database were the actual conventions and agreements, rules of procedure for the organisations and secretariats for the agreements, and organisational websites. When all the desired information could not be found in these sources, other documentation and websites were explored. The database is in the form of an Excel spreadsheet with the key information in the cells. Comment boxes are used to record details, such as excerpts from agreements that are considered necessary context for what was included in the table cells. The first part of each database record includes basic background information on the agreement. The second part of each record includes information aimed at evaluating the policy processes that are intended to give effect to the agreement (see Mahon et al. 2015 for a full list of variables in the database).

References:

- Ban, N. C., N. J. Bax, K. M. Gjerde, R. Devillers, D. C. Dunn, P. K. Dunstan, A. J. Hobday, S. M. Maxwell, D. M. Kaplan, R. L. Pressey, J. A. Ardron, E. T. Game and P. N. Halpin. 2014. Systematic conservation planning: A better recipe for managing the high seas for biodiversity conservation and sustainable use. *Conservation Letters*, 7: 41–54.
- Biermann, F. 2007. 'Earth system governance' as a crosscutting theme of global change research. *Global Environmental Change*. 17: 326-337.
- Biermann, F. and P. Pattberg [eds]. 2012. *Global environmental governance reconsidered*. MIT Press, Cambridge.
- Biermann, F., O. Davies and N. van der Grijp. 2009. Environmental policy integration and the architecture of global environmental governance. *International Environmental Agreements* 9: 351–369.
- Breitmeier, H., O. R. Young and M. Zurn. 2006. *Analysing international environmental regimes: from case study to database*. MIT Press, London, 321 pp.
- Ceo, M., S. Fagnani, J. Swan, K. Tamada, and H. Watanabe. 2012. Performance reviews by Regional Fishery Bodies: Introduction, summaries, synthesis and best practices, Volume I: CCAMLR, CCSBT, ICCAT, IOTC, NAFO, NASCO, NEAFC. *FAO Fisheries and Aquaculture Circular*. No.1072. Rome, FAO. 2012. 92 pp.
- Crowder, L. B., G. Osherenko, O. R. Young, S. Airmé, E. A. Norse, N. Baron, J. C. Day, F. Douvère, C. N. Ehler, B. S. Halpern, S. J. Langdon, K. L. McLeod, J. C. Ogden, R. E. Peach, A. A. Rosenberg and J. A. Wilson. 2006. Resolving mismatches in U.S. ocean governance. *Science* 213: 617-618.
- Dietz, T., E. Ostrom, and P. C. Stern. 2003. The Struggle to Govern the Commons. *Science*, 2003, 302 (5652), 1907-1912.
- Druel, E. 2012. Ecologically or Biologically Significant Marine Areas (EBSAs): the identification process under the Convention on Biological Diversity (CBD) and possible ways forward, Working Paper N°17 /12, IDDRI, Paris, France, 24 pp.
- Druel, E. and K. Gjerde. 2014. Sustaining marine life beyond boundaries: Options for an implementing agreement for marine biodiversity beyond national jurisdiction under the United Nations Convention on the Law of the Sea. *Marine Policy* 49: 90–97.
- Druel, E., Rochette, J., Billé, R., Chiarolla, C. 2012. A long and winding road. International discussions on the governance of marine biodiversity in areas beyond national jurisdiction, *Studies N°07/13*, IDDRI, Paris, France, 42 pp.
- Fanning, L., R. Mahon, P. McConney, J. Angulo, F. Burrows, B. Chakalall, D. Gil, M. Haughton, S. Heileman, S. Martinez, L. Ostine, A. Oviedo, S. Parsons, T. Phillips, C. Santizo Arroya, B. Simmons, C. Toro. 2007. A large marine ecosystem governance framework. *Marine Policy* 31: 434–443.
- FAO. 1999. Report of the meeting of FAO and non-FAO regional fishery bodies or arrangements. Rome, 11-12 February 1999. *FAO Fisheries Report*. No.597. Rome, FAO. 1999. 53pp.
- FAO. 2007. Report of the First Meeting of Regional Fishery Body Secretariats Network. Rome, 12–13 March 2007. *FAO Fisheries Report*. No. 837. Rome, FAO. 2007. 38pp.
- FAO. 2013. What is COFI? See <http://www.fao.org/fishery/about/cofi/en>. Accessed December 15, 2013.
- Freestone, D. 2010. Problems of High Seas governance. Pp 99-124, In: *The world ocean in globalisation*. D. Vidas and P. J. Schei [Eds]. Martinus Nijhoff.
- Freestone, D. 2011. Fisheries commissions and organisations. Max Planck Encyclopedia of Public International Law [MPEPIL].
- GESAMP. 2001. The state of the marine environment. Group of experts on the scientific aspects of marine pollution. *Regional Seas Reports and Studies*, Nairobi, UNEP.
- Harris, P. T. and T. Whiteway. 2009. High seas marine protected areas: Benthic environmental conservation priorities from a GIS analysis of global ocean biophysical data. *Ocean & Coastal Management* 52: 22–38.
- Hart, S. 2008. Elements of a possible implementation agreement to UNCLOS for the conservation and sustainable use of marine biodiversity in Areas beyond National Jurisdiction. IUCN, Gland, Switzerland. x + 21.
- IPCC. 2014. *Climate Change 2014: Impacts, Adaptation, and Vulnerability*. Draft Report.
- Klůvánková-Oravská, T. and V. Chobotová. 2012. Regional governance arrangements. Pp 219-235. In: F. Biermann and P. Pattberg. [eds]. *Global environmental governance reconsidered*. MIT press, Cambridge.
- Lemos, M. C., and A. Agrawal. 2006. Environmental governance. *Annual Review of Environment and Resources* 31:297–325.
- Lockwood, M., J. Davidson, A. Curtis, E. Stratford and R. Griffith. 2010. Governance principles for natural resource management. *Society and Natural Resources*, 23:1–16.
- Mahon, R., L. Fanning, K. M. Gjerde, O. Young, M. Reid, S. Douglas. 2015. *Transboundary Waters Assessment Programme (TWAP) Assessment of Governance Arrangements for the Ocean: Vol 2 – Areas Beyond National Jurisdiction (ABNJ)*. IOC Technical Series 119.
- Mahon, R., L. Fanning, and P. McConney. 2011. TWAP common governance assessment. Pp. 55-61. In: L. Jectif, P. Glennie, L. Talaue-McManus, and J. A. Thornton (Eds.). Volume 1. *Methodology and Arrangements for the GEF Transboundary Waters Assessment Programme*, United Nations Environment Programme, Nairobi, 61 pp.
- Mahon, R., A. Cooke, L. Fanning and P. McConney. 2013. Governance arrangements for marine ecosystems of the Wider Caribbean Region. Centre for Resource Management and Environmental Studies, University of the West Indies, Cave Hill Campus, Barbados. CERMES Technical Report No 60. 99pp.
- Miles, E. L., A. Undrdal, S. Andresen, J. Wettestad, J. B. Skjaereth and E. M. Carlin. 2002. Environmental regime effectiveness: confronting theory with evidence. MIT Press, Cambridge.
- Molenaar, E. J. 2005. Addressing regulatory gaps in high seas fisheries. *The International Journal of Marine and Coastal Law*, 20, (3–4): 533-570.
- Murillas-Maza, A., J. Virto, M. C. Gallastegui, P. González, J. Fernández-Macho. 2011. The value of open ocean ecosystems: A case study for the Spanish exclusive economic zone. *Natural Resources Forum*, 35: 122–133.
- Oberthur, S. 2009. Interplay management: enhancing environmental policy integration among international institutions. *International Environmental Agreements* 9:371–391.
- Oberthur, S. and T. Gehring. [Eds]. 2006. *Institutional interaction in global environmental governance*. MIT Press, Cambridge, 405 pp.
- Orsini, A., J.-F. Morin and O. Young. 2013. Regime complexes: a buzz, a boom, or a boost for global governance? *Global Governance* 19: 27–39.
- Ostrom, E. 2010. Polycentric systems for coping with collective action and global environmental change. *Global Environmental Change* 20 (2010) 550–557.
- Rice, J., K. M. Gjerde, J. Ardron, S. Aricod, I. Cresswell, E. Escobar, S. Grant and M. Vierro. 2011. Policy relevance of biogeographic classification for conservation and management of marine biodiversity beyond national jurisdiction, and the GOODS biogeographic classification. *Ocean & Coastal Management* 54: 110-122.

- Rochette J., S. Unger, D. Herr, D. Johnson, T. Nakamura, T. Packeiser, A. Proelss, M. Visbeck, A. Wright and D. Cebrian. 2014. The regional approach to the conservation and sustainable use of marine biodiversity in areas beyond national jurisdiction. *Marine Policy* 49: 109–117.
- Rothwell, D. R. and T. Stephens. 2010. *The international law of the sea*. Hart Publishing, Oxford, 499pp.
- Söderbaum, F., and J. Granit. 2014. The political economy of regionalism: The relevance for International Waters and the Global Environment Facility: A STAP Issues Paper. Global Environment Facility, Washington, D.C.
- Sorensen, E. and J. Torfing. 2007. *Theories of democratic network governance*. Palgrave Macmillan, New York, 356 pp.
- Spalding, M. D. et al. 2007. Marine Ecoregions of the world: A bioregionalization of coastal and shelf areas. *BioScience* 57 (7): 573–583.
- Spalding, M. D., V. N. Agostini, J. Rice, S. M. Grant. 2012. Pelagic provinces of the world: A biogeographic classification of the world's surface pelagic waters. *Ocean & Coastal Management*, 60: 19–30.
- Stokke, O. S. [Ed]. 2001. *Governing high seas fisheries: The interplay of global and regional regimes*. Oxford: Oxford University Press.
- Stokke, S., O. Schram and S. Oberthur. [Eds]. 2011. *Managing institutional complexity: Regime interplay and global environmental change*. MIT Press, Cambridge, 405 pp.
- Töpfer, K., L. Tubiana, S. Unger and J. Rochette. 2014. Charting pragmatic courses for global ocean governance. *Marine Policy* 49 (2014) 85–86.
- UN Secretary General. 2012. *The Oceans Compact: Healthy oceans for prosperity*. United Nations, New York, 8 pp.
- UNDP. 2014. *Governance for Sustainable Development: Integrating Governance in the Post-2015 Development Framework*. United Nations Development Programme, New York, 14pp.
- UNEP. 2014. *Regional Seas Strategic Directions 2013–2016*. Regional Seas Visioning Workshop, Geneva, Switzerland, 3–4 July 2014, 8 pp.
- UNEP. 2012. *21 Issues for the 21st Century: Result of the UNEP Foresight Process on Emerging Environmental Issues*. United Nations Environment Programme (UNEP), Nairobi, Kenya, 56pp.
- UNEP. 2006. *Marine and coastal ecosystems and human wellbeing: A synthesis report based on the findings of the Millennium Ecosystem Assessment*. UNEP. 76 pp.
- UNEP/GPA. 2006. *Implementation of the GPA at regional level: The role of regional seas conventions and their protocols*. UNEP/GPA, The Hague: 31 pp.
- UNESCO. 2009. *Global Open Oceans and Deep Seabed (goods) – biogeographic classification*, Paris, UNESCO-IOC. (IOC Technical Series, 84.)
- UNESCO-IOC. 2011a. *Methodology for the GEF Transboundary Waters Assessment Programme*. Volume 5. *Methodology for the Assessment of Large Marine Ecosystems*, United Nations Environment Programme, Nairobi, viii + 115 pp.
- UNESCO-IOC. 2011b. *Methodology for the GEF Transboundary Waters Assessment Programme*. Volume 6. *Methodology for the Assessment of the Open Ocean*, United Nations Environment Programme, Nairobi, vi + 71 pp.
- Vierros, M., I. Cresswell, E. Escobar Briones, J. Rice and J. Ardron. (Eds). Submitted to 25th Session of the IOC Assembly, June 2009, 96 pp.
- Watling, L., J. Guinotte, M. R. Clark and C. R. Smith. 2013. A proposed biogeography of the deep ocean floor. *Progress in Oceanography* 111: 91–112.
- Young, O. R. 2013. Effectiveness of international environmental regimes: Existing knowledge, cutting-edge themes, and research strategies. *Proceedings of the National Academy of Sciences*.
- Young, O. R. 2002. *The institutional dimensions of environmental change: fit interplay and scale*. MIT Press, Cambridge, MA, 221 pp.
- Young, O. R., G. Osherenko, J. Ekstrom, L. B. Crowder, J. Ogden, J. A. Wilson, J. C. Day, F. Douvère, C. N. Ehler, K. L. McLeod, B. S. Halpern and R. Peach. 2007. Solving the crisis in ocean governance: place-based management of marine ecosystems. *Environment*, 49 (4): 20–32.
- Zahran, M. M. and T. Inomata. 2012. *Evaluation of UN-Oceans*. Joint Inspection Unit, United Nations, Geneva, JIU/REP/2012/3:34 pp.