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Volume 2 • Areas Beyond National Jurisdiction



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**Transboundary Waters Assessment
Programme (TWAP) Assessment of
Governance Arrangements for the Ocean**

**Volume 2
Areas Beyond National Jurisdiction**

Robin Mahon
Lucia Fanning
Kristina M. Gjerde
Oran Young
Michael Reid
Selicia Douglas



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¹ Centre for Resource Management and Environmental Studies (CERMES), University of the West Indies, Cave Hill Campus, St. Michael, Barbados

² Marine Affairs Program, Dalhousie University, Halifax, Nova Scotia, Canada B3H 3R2

³ Senior High Seas Advisor, IUCN Global Marine and Polar Programme, 105 Irving St. Cambridge, MA, USA

⁴ Bren School of Environmental Science and Management, University of California, Santa Barbara, Santa Barbara, CA 93106-5131, USA.

Additional information:

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Preface

This report is an output of the Open Ocean Component of the Global Environment Facility (GEF) Transboundary Waters Assessment Programme (TWAP) (2013-2015). TWAP conducted indicator-based assessments for transboundary water systems in five categories: aquifers, rivers, lakes, Large Marine Ecosystems (LMEs) and Open Ocean. These included assessment of governance arrangements and overall architecture for transboundary systems. This report covers the arrangements for the Open Ocean with a focus on areas beyond national jurisdiction (ABNJ), while its companion (Volume 1) covers arrangement for LMEs. Each report is summarised as a chapter in the overall assessment report for the respective water category (Open Ocean and LME).

The database of agreements that formed the basis of this report is available [online](#) as part of the GEOWOW/TWAP OneSharedOcean.org initiative (hosted by the UNESCO-IOC International Oceanographic Data and Information Exchange (IODE)). It will provide a focal access point for ocean scientists and policy makers to retrieve and share data. This will also include an interactive website where the agreements and regional clusters can be explored spatially.

The authors thank Kimberley Baldwin for conducting the GIS analyses used in this report and Katherine Blackman for assistance with compiling data on governance agreements. We also wish to thank the reviewers Julian Rochette and Jakob Granit for their valuable comments. We are grateful to UNESCO-IOC for the opportunity to carry out this work.

We take this opportunity to let readers know that this report covers primarily the extent to which arrangements are in place and appear to conform to widely accepted governance norms. It does not assess the performance or effectiveness of these arrangements. It also examines the extent to which the set of arrangements for ABNJ have an overall pattern that might be useful in understanding them, and how they relate to arrangements for areas within national jurisdiction (AWNJ). Assessment of the performance or effectiveness of these arrangements and how these relate to the presence of 'good governance' characteristics should be the next stage of this work.

RM, LF

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Summary

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 percent. ABNJ provide many important ecosystem services. 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. 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. It recognizes that governance is much broader than this and encompasses the private sector, civil society and resource users of all kinds. This has led to increased attention to the institutional arrangements and structures within which governance processes play out.

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.

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 well-being, 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 areas beyond national jurisdiction (ABNJ).

This report 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 ABNJ. Indeed, these issues are critical for all ocean areas, so the report also considers the linkages of governance arrangements in ABNJ with those for areas within national jurisdiction (AWNJ). 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.

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

Approach to the assessment

The approach 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. An arrangement is any multilateral agreement, together with organizational structures and processes in place to give effect to it¹. The assessment also examined each arrangement to determine whether policy processes considered to be adequate for good governance are in place. The arrangements are

¹ In the governance literature the term ‘regime’ is also often used to refer to arrangements as defined here.

also examined from a spatial perspective to determine geographical overlaps and gaps as well as the extent to which ABNJ are covered by governance arrangements.

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 address ABNJ. 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. With regard to pollution, 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) may also be transported by currents from EEZs into ABNJ. 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. Most Regional Seas-based biodiversity agreements only relate to ABNJ when protected areas or other measures provide 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.

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 the desired information could not be found in these sources, other documentation and websites were explored. Typically, intergovernmental agreements fall into two categories: (1) constituting agreements² and (2) implementing or operational agreements. 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.

Findings

Overall, 100 arrangements were considered to be relevant to ABNJ with regard to the four issues of concern (Table A). Of these, 18 are constituting agreements and 82 are operational. 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, from 25 in the North Atlantic and adjacent seas (Mediterranean, Caribbean, Baltic, Black) to 8 in the South 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.

Regional agreements are considered to be important means of translating global agreements to specific geographical areas, which is essential for an ecosystem approach. A closer look at the

² Also sometimes referred to as framework agreements.

coverage of issues by regional agreements reveals some of the gaps (Table A). For example, there are several regions with no agreement of any kind for biodiversity. Several of the biodiversity agreements are also species (polar bears) or taxon (seals, albatrosses and petrels, sea turtles) specific 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 only as a factor that must be taken into consideration in dealing with the other issues.

Assessment of policy cycles

Scoring criteria were used to assign each arrangement a score for each of the stages of its policy cycle. The advisory and decision-making stages of the policy cycle are each considered in two modes -- policy mode and management mode -- making a total of seven stages to be 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. Provision for carrying out each of these policy cycle stages is considered to be an important component of the institutional arrangements needed for good. 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 score is derived from the scores of the individual stages and expressed as a percent completeness. 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 A. 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

The analysis of policy cycle stage scores shows differences in strength among the policy cycle stages, and between constituting and operational agreements. 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. 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 also shows some differences in strength among the issues. 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 A). 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 A 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.

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	●			●	●		●

Figure A. 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.

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 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 A. 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 ocean, including ABNJ, and so is not shown in Figure B. It should also be noted that not all agreements with relevance ABNJ are connected to UNCLOS, e.g. 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. 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.

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). 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. Perhaps more significantly, the promotion and implementation of IMO arrangements is often facilitated at the regional level through Regional Seas Programme protocols. 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.

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. 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 11 regional protocols addressing land-based sources of pollution and activities (LBSA).

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. 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. 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.

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.

The 'global-to-regional issue-based networks' above 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. It is the role of UN-Oceans to provide effective, transparent and regular inter-agency coordination on ocean and coastal issues among the 15 UN bodies involved in ocean affairs. 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. 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. New Terms of Reference for UN-Oceans were approved by the UNGA in 2013. What is not clear is whether the mechanism will be provided with the resources needed to be effective.

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 B). These clusters of arrangements provide potential for improving regional or 'place-based' 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

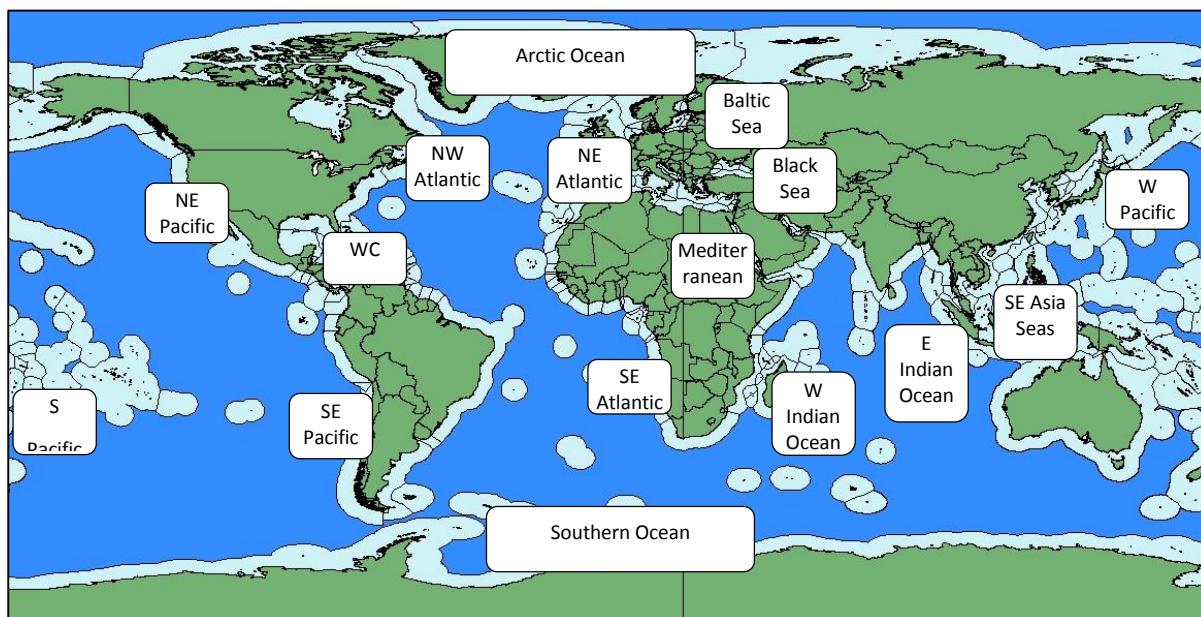


Figure B. The 16 regional clusters identified.

Discussion

This study has focused on the governance arrangements and architecture for ocean ABNJ taking a structural approach to 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. 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. 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.

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. 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. 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. 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.

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. They vary widely with regard to: spatial extent, the extent to which there appears to be overarching integration, what is in place for each of the four issues, and relevance to ABNJ. 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 (MCSD) in 1996, in association with the Barcelona Convention. The Secretariat of the Barcelona Convention supports the activities of the MCSD. 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.

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.

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. 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, the Bay of Bengal and southern Africa. For the most part, these mechanisms are focussed on areas within national jurisdiction. 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. 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.

Science-policy interfaces

The UNEP Foresight Process on Emerging Environmental Issues for the 21st century, concluded that the cross-cutting issue "Broken Bridges: Reconnecting Science and Policy" is the fourth most pressing one regarding efforts to achieve sustainable development. The panel noted that critical scientific knowledge is not being communicated effectively to audiences ranging from decision-makers to the general public. 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.

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. There are science-policy interfaces at each of the three levels that require further investigation regarding the extent to which: The advisory mechanism is independent of the decision-making and implementation mechanisms; the policy advice tends to come from the same body that is providing technical/management advice; and the 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, such as the extent to which there is: spatial fit of arrangements and regional clusters to the spatial issues; spatial coherence among arrangements within a regional cluster; engagement of countries in arrangements, regional clusters and global networks; progress within arrangements in moving towards EBM; a mechanism specified for integrating policy and management across issues within regional clusters and at the global level.

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 areas within national jurisdiction, and weak for ABNJ, particularly with regard to biodiversity and ecosystems.

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.
- 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.

Recommendations

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

- (1) Individual arrangements
- (2) Regional intersectoral clusters
- (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, i.e. 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.

1 Introduction

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 percent (Figure 1). While not as ecologically productive as Large Marine Ecosystems³ (LMEs) – which are primarily associated with continental shelves but include the outer margins of boundary currents and provide over 80% of the world's total marine fish catches (FAO 2006, Garibaldi and Limongelli 2003, Sherman and Duda 1999) - ABNJ provide many important ecosystem services, including regulatory services, provision of food, energy, recreational and cultural services (UNEP 2006, UNESCO-IOC et al. 2011). These ecosystem services are increasingly under threat from many 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 knowledge, combined with the vastness and remoteness of ABNJ, has 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 UN 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 this relationship between human and natural systems and increase human well-being, 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 may also play critical roles in the governance of ocean ABNJ.

There are many documents calling for improved governance arrangements for the ocean (UNESCO-IOC et al. 2011, Global Oceans Commission 2013, World Bank 2014). The 'Blueprint for Ocean and Coastal Sustainability' emphasises three areas: (i) the need for governance arrangements for biodiversity in ABNJ, (ii) the need for improved implementation capacity in Regional Fishery Management Organisations (RFMOs); and, (iii) the need for better coordination among UN agencies with responsibility for the ocean (UNESCO-IOC et al. 2011). The ocean section of the Rio+20 outcome document entitled 'The Future We Want' also provides a tour of the areas of ocean governance in need of critical attention (United Nations 2012).

³ Large Marine Ecosystems (LMEs) are relatively large areas of ocean space of approximately 200,000 km² or greater, adjacent to the continents in coastal waters where primary productivity is generally higher than in open ocean areas. They produce about 80% of the annual world's marine fisheries catch; and are centres of coastal ocean pollution and nutrient over enrichment, habitat degradation, overfishing, biodiversity loss, and climate change effects. <http://www.lme.noaa.gov/>.

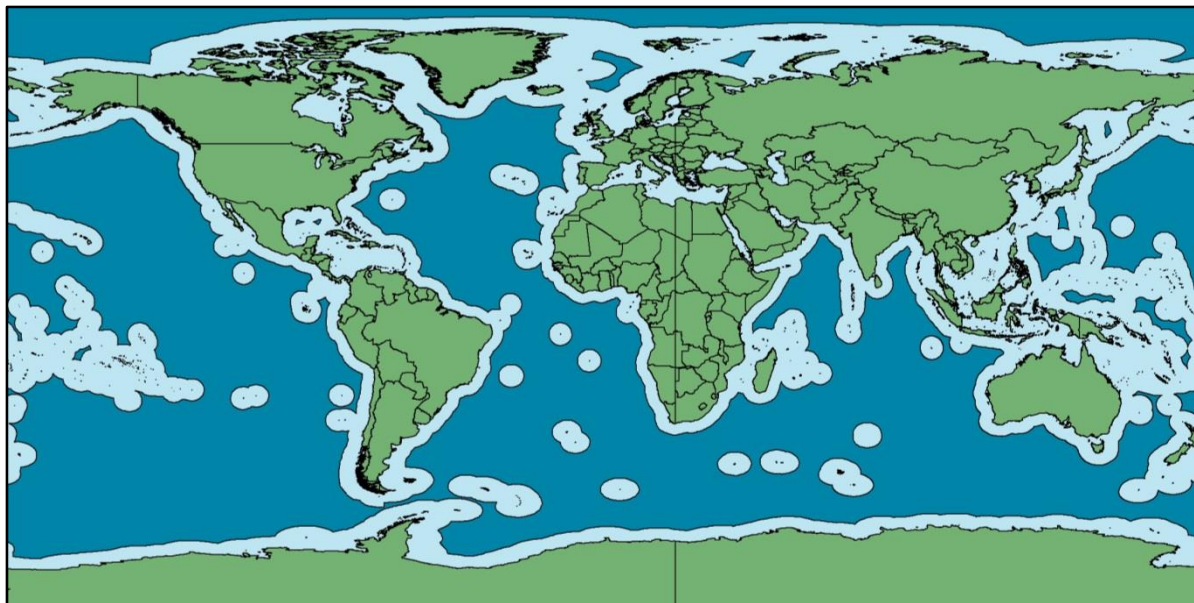


Figure 1: The 'high seas' (dark blue) are all parts of the sea that are not included in the exclusive economic zone (generally extending out to 200 nm), the territorial seas, and the internal waters of a State in the archipelagic waters of an archipelagic State (UNCLOS article 86). The 200 nm boundaries shown on this map are indicative only, and do not reflect the views of the authors, their institutions or GEF on the status of political boundaries. The figure is based on the equidistant EEZ boundaries from marineregions.org. Note that area is distorted in this projection.

This report examines the entirety of global and regional conventions, treaties and other arrangements for governance of ABNJ to determine if there is an emerging governance architecture for the ocean that can provide a basis for discussion of ocean governance needs, and interventions to meet these needs.

1.1 The GEF IW TWAP and the Open Ocean Assessment

The Global Environment Facility International Waters Programme (GEF-IW) supports projects and other activities aimed at improving the capacity of transboundary water systems to deliver ecosystem services. This programme has been active for over 20 years with considerable investments in these water systems (Duda and Hume 2013). The aim of the GEF-IW Transboundary Waters Assessment Programme Full-size Project (TWAP FSP) (2013-2015) is to produce the first truly global assessment of all five categories of transboundary water systems: (1) aquifers, (2) lake/reservoir basins, (3) river basins, (4) Large Marine Ecosystems (LMEs), and (5) open ocean (Jeftic et al. 2011). This will be accomplished by applying the methodologies developed during the TWAP Medium-sized Project (2009-2010) (Jeftic et al. 2011). At the same time, TWAP will formalize the network of partners involved in the assessment as a basis for future periodic assessments. A primary purpose of the TWAP FSP is to assist the GEF and other international organizations in priority setting by providing a baseline and priorities for intervention. The main assessment report arising from the TWAP FSP is also expected to provide a baseline for future periodic assessments.

The overall ABNJ assessment consists of two main components (UNESCO-IOC 2011b). The first component focuses on four major themes that are assessed through a suite of biophysical indicators aiming to reflect the status of:

- Climate change and variability in the global ocean, and their global and local impacts;
- Ocean ecosystems, habitats and biodiversity;
- Fisheries;
- Pollution as a stressor of the marine environment.

The second component focuses on governance that cuts across the four themes by examining current governance arrangements for ABNJ at the global level, and their links with regional and national arrangements. This crosscutting governance assessment for ABNJ is the subject of this report. The objective of this study is 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 will:

- 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 organizations 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 is intended to look only at governance arrangements and architecture. Due to limitations in time and resources, it does not examine governance effectiveness, important as an assessment of effectiveness may be.

1.2 Assessing governance arrangements - where governance architecture fits

The assessment of governance arrangements and their effectiveness is a complex and multifaceted task (Young 2013). To facilitate evaluation, one perspective is to break what governance is expected to achieve into three components (Young 1999):

- The first is 'outputs', which are the arrangements that are put in place to translate agreements from paper to practice.
- The second is 'outcomes' which encompass changes in the behaviour of people that are the target of the arrangement.
- The third is 'impact' which represents changes in the state of the system that is the target of the arrangement.

These can be assessed separately, and in sequence, as it is likely that there will be time lags in changes in these components. This perspective is consistent with the formulation of the GEF IW programme approach to evaluation of its projects and intervention, which has been based on three categories of indicators: (1) process indicators, (2) stress reduction indicators and (3) environmental status indicators (Duda 2002).

Mahon et al. (2011a) noted that with the increased understanding of governance over the past decade, the GEF IW evaluative approach should be expanded to include four additional categories of indicators that are critical when assessing governance effectiveness for sustainable development. They proposed that for the indicator scheme to be in accord with current thinking regarding the goal of sustainable development, there should be additional categories of indicators for participation, social justice and human well-being that are in tandem with those for environment (Mahon et al. 2012) (Figure 2). They also proposed that assessment of the existing or proposed additional categories of indicators will be dependent upon the institutional structure in place to facilitate decision-making and that there is therefore the need for a fourth additional category of indicators that assesses governance architecture.

Accepting the assumption that an appropriate governance structure is a necessary but insufficient factor to successfully achieving improved human well-being, Mahon et al. (2011a, 2012) called for the assessment of governance architecture to precede the assessment of governance process. This is considered to be particularly important in the case of multilevel nesting typical of international environmental governance systems (Fanning et al. 2007, Biermann 2007). Biermann and Pattberg (2012 p.274) observe that "... increasingly the debate turns toward what we describe as an overarching 'architecture' of global environmental governance, that is, the entire interlocking web of widely shared principles institutions and practices that shape decisions by stakeholders at all levels in this field." This report is primarily concerned with assessing this specific category of institutional arrangements for governance of ocean ABNJ and its overarching 'architecture'.

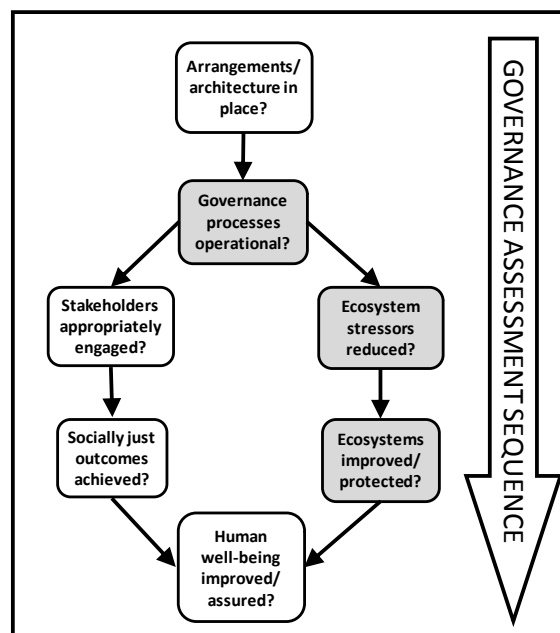


Figure 2. The expanded GEF IW indicator framework of Mahon et al. (2013). The original GEF IW indicator categories (Duda 2002) are shaded in grey. The additional indicator categories are unshaded.

1.3 The scope of and approach to the ABNJ governance assessment

Conventional definitions of ocean space are presented in Box 1. This assessment focusses on ABNJ which includes the High Seas and the Area which are politically defined areas beyond zones of national jurisdiction. Thus, its focus is slightly different than the focus of the TWAP Open Ocean Assessment. The definition of open ocean is more biophysical than political, and thus the term includes some areas under national jurisdiction, such as the many island EEZs in the large ocean basins, particularly in the tropical Pacific. It should be noted that the other GEF IW marine water system category, LMEs, may also include areas of open ocean under national jurisdiction, as well as ABNJ. Thus, there is spatial overlap between these two categories.

Scoped within the confines of the four main issue areas of climate, biodiversity and ecosystems, fisheries, and pollution, this assessment focuses on evaluating the entire set of transboundary governance arrangements that is in place globally for ABNJ. A primary aim of this assessment is to determine if there are broad or emerging patterns that could be useful in (a) understanding the governance status of ABNJ in particular or the ocean in general, (b) monitoring and communicating that status, and (c) designing interventions aimed at improving ocean governance.

Box 1: Definitions (from UNEP 2010)

Areas beyond national jurisdiction (ABNJ): includes the High Seas and the Area.

The Area: legal term for the seabed and ocean floor and subsoil thereof beyond the limits of national jurisdiction, as defined in the United Nations Convention on the Law of the Sea Article 1(1)(1). Generally starts at 200 nm from coastal baselines, but may start 350 nm or beyond in certain circumstances.

Deep Sea: ocean waters and seafloor beyond the depth where photosynthesis can occur, generally below 200 m.

High Seas: legal term for waters beyond the zones of national jurisdiction: parts of the sea that are not included in the EEZ, in the territorial sea or in the internal waters of a State, or in the archipelagic waters of an archipelagic State (UNCLOS Article 86).

Open Ocean: ocean waters above and beyond the physical continental shelf. Often thought of as remote, in many places such as the western side of continents, or at heads of submarine canyons, or off volcanic islands, the open ocean begins just beyond the coastal zone.

A holistic perspective on ocean governance arrangements could significantly enhance our understanding of how best to implement governance of the ocean in the integrated and coordinated fashion envisaged by UNCLOS. This holistic perspective is approached by first exploring the entire set of arrangements to determine the issues they cover, the regions within which they operate, and the formal interrelations among them. Of particular interest is the organisational and geographical nesting of arrangements, and the horizontal and vertical interplay among them according to ideas developed by Young (2002).

Nesting and interplay are often closely connected with specific stages of the policy cycles that are central to most arrangements. Fanning et al. (2007) developed a conceptual model or Large Marine Ecosystem Governance Framework based on nested policy cycles at multiple levels (local to global), with vertical and horizontal linkages providing the basis for interplay. The policy cycles comprise five stages considered to be important for adaptive governance: (i) development and provision of advice, (ii) decision-making, (iii) implementation, (iv) review and (v) generation and management of data and information. While for conceptual simplicity the model depicts complete policy processes within levels, the reality is that policy, management planning, and implementation decisions for a particular issue may take place at different levels within the governance system. This is discussed and further illustrated using specific examples from fisheries and biodiversity in the Caribbean by Fanning et al. (2013).

This assessment of governance arrangements for the ocean includes an evaluation, based on criteria that are considered to reflect 'good governance', of the extent to which the stages of the policy process are in place for each arrangement. It must be emphasised that while the presence of policy processes that meet good governance criteria might be expected to result in better outcomes and impacts, the ultimate test of effective governance, a causal link between good governance processes and effective governance has not been demonstrated in the literature. The criteria for good governance that are used to evaluate the policy processes for the arrangements are largely based on operational principles, such as transparency, accountability, participation, and efficiency that are considered desirable and that appear in the preambles to many multilateral environmental agreements.

The approach taken to the assessment has been to assemble all governance arrangements that were found to have relevance to the four issues of concern in the ABNJ: fisheries, biodiversity, pollution, and climate change. These arrangements were then compiled into a database to facilitate assessment of the extent to which the issues are covered either globally or regionally. The assessment also examines 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 are also examined from a spatial perspective to determine geographical overlaps and gaps as well as the extent to which ABNJ are covered by governance arrangements.

2 Developing and analysing a database of governance arrangements for ABNJ

This assessment includes governance arrangements addressing any of the four issue areas that have direct relevance to ABNJ. An arrangement is any multilateral agreement, together with organizational structures and processes in place to give effect to it⁴. The determination of direct relevance is based on whether the agreement is intended to address an ABNJ or straddling issue. On this basis, all 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 criteria for selection of regional arrangements to be included differed depending on the issue area. The nature of the issues differs to the extent that it was not possible to have a universal set of criteria that applied across them all.

With regard to fisheries, all Regional Fishery Management Organizations (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 the capacity to make binding decisions on fisheries management (Molenaar 2005, Freestone 2011).

With regard to pollution, the approach taken recognized that all land-based sources of pollution (LBS) impacting ABNJ pass through coastal waters. Therefore, regional arrangements 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 would 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 arrangements which are primarily aimed at addressing coastal pollution problems.

For biodiversity, the inclusion of arrangements 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 arrangements 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 arrangements would provide a biased picture regarding biodiversity conservation on the High Seas. However, agreements and MOUs under the Convention on Migratory species which were aimed at protecting species throughout their range were included when the range extended into ABNJ, for example, the Agreement for the Conservation of Albatrosses and Petrels (ACAP)

The inclusion of shipping arrangements was also considered. For example, the IMO routing measures under the Safety of Life at Sea (SOLAS) Convention have been used to minimise impacts of shipping on biodiversity. However, it was agreed that these conventions 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.

2.1 Developing the database of governance arrangements

The approach taken to the assessment was to compile a database of all the ABNJ relevant agreements based on the criteria provided above. Relevant agreements were sought in the

⁴ In the governance literature the term 'regime' is also often used to refer to arrangements as defined here.

literature and on the Internet where several databases of international agreements can be found⁵. The process of identifying agreements continued until no new ones were encountered. For each of the agreements included in the database, a variety of information was compiled (Table 1). 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. Table 2 provides an explanation of the scoring assigned to each stage of the policy cycle.

Table 1. The information included in the database of arrangements for ABNJ

Field	Description
Part 1 – Background information	
Acronym/Short name	The name used to refer to the arrangement
Full name	The complete formal name of the arrangement
Type	The arrangements were categorised as either - CN = Constituting (seeks to develop broad policy to address issues, to be later refined by specific agreements), or OP = Operational (aimed at putting regulations in place to reduce stressors and improve system state). See text for further explanation.
Purpose	A narrative summary of the purpose of the arrangement
Year opened	The year in which the arrangement was first available for signature
Year entered force	The year in which the arrangement entered into force
Year revised	The year, if any, in which the arrangement was revised
Ratification	Whether the arrangement could be ratified/acceded/accepted/approved (1) or only signed (0)
Responsible organisation and secretariat location	The major organisation under which the arrangement was developed. The location of the Secretariat and the number of professional-technical staff.
Geographical area of coverage	A brief description of the area of coverage, and indication of whether a geospatial shape file is available for it
Region	The global or regional geographic coverage of the arrangement (GO = Global, AT = Atlantic, AN = North Atlantic, AS = South Atlantic, IO = Indian Ocean, PN = North Pacific, PS = South Pacific, SO = Southern Ocean, AO = Arctic Ocean)
Types of membership	The different types of membership permitted by the arrangement, e.g. full, associate, observer, etc., and the criteria for membership
States/organizations eligible for membership	The numbers of states and organisations that are eligible for membership in each of the above types (names provided in the comment)
States/organizations who are actual members	The numbers of states and organisations that are actually members in each of the above types (names provided in the comment)
High Seas/Straddling Issues covered	The ABNJ governance issues that are covered by the arrangement (e.g., fisheries - highly migratory species, straddling species, discrete High Seas stocks; pollution - marine-based sources, land-based sources; biodiversity - highly migratory species, general)

⁵ 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>

Principles	The explicitly stated principles upon which the arrangement is based.
Part 2 – Assessment of provisions for policy processes	
Provision of policy advice - responsible body and score	The body with primary responsibility for carrying out this policy stage scored using a scale of 0 to 3 (Table 2).
Policy decision-making - responsible body and score	The body with primary responsibility for carrying out this policy stage scored using a scale of 0 to 3 (Table 2).
Provision of management advice - responsible body and score	The body with primary responsibility for carrying out this policy stage scored using a scale of 0 to 3 (Table 2).
Management decision-making - responsible body and score	The body with primary responsibility for carrying out this policy stage scored using a scale of 0 to 3 (Table 2).
Management implementation - responsible body and score	The body with primary responsibility for carrying out this policy stage scored using a scale of 0 to 3 (Table 2).
Management review - responsible body and score	The body with primary responsibility for carrying out this policy stage scored using a scale of 0 to 3 (Table 2).
Data and information management - responsible body and score	The body with primary responsibility for carrying out this policy stage scored using a scale of 0 to 3 (Table 2).
Completeness and score	The narrative summary of the extent to which the arrangement is perceived to be complete and the score for overall completeness of the arrangement based on the sum of completeness scores for the seven policy cycle stages expressed as a percentage of the maximum possible score.
Dispute resolution	The presence of a mechanism for dispute resolution is explicitly identified in the arrangement (0 = none, 1 = present)
Adaptability - amendment provisions	The presence of provisions in the arrangement for its amendment (0 = none, 1 = present)
Linkages with other arrangements and agreements	The extent to which the arrangement stands alone and is self-sufficient or is connected with other arrangements and agreements to form a complete process.

Table 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, e.g. COP self advises ⁶ 1 = Science-policy interface mechanism 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 ⁷
Policy decision-making - responsible body and score	0 = No decision-making mechanism ⁸ 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 ⁹ 3 = Implemented through a coordinated regional/global mechanism ¹⁰
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 ¹¹ 3 = DI centrally managed and shared ¹²

⁶ 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.

⁷ This can be internal or external.

⁸ 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 operation of the organization itself.

⁹ This means support from regional programmes or partner organizations arranged via the secretariat.

¹⁰ For example a coordinated enforcement system with vessels following a common protocol and flying a common flag identifying them as part of the mechanism, such as the Forum Fisheries Agency surveillance flag.

¹¹ 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.

¹² Here the regime could also be the actual collector and compiler of the data, as in the International Pacific Halibut Commission.

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 arrangements, 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.

2.1.1 Levels of commitment to and types of arrangements

Several terms are used to indicate the level of commitment of a country to take part in an agreement¹³. While these have different legal meanings, two levels are recognised in this study and reflected in the database: (1) countries that have signed, indicating willingness to engage, and are referred to as signatories, and (2) countries which have ratified, acceded, approved or accepted, indicating commitment, and are referred to as contracting parties (CPs). It must be borne in mind that many agreements relating to ocean governance cannot be committed to at the second level and have only signatories. A further complication in interpreting country engagement with agreements is that some countries that have not signed an agreement may nonetheless accept and comply with many of its conditions as customary international law, for example, the USA with UNCLOS.

Typically, intergovernmental agreements fall into two categories: (1) constituting agreements 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.

2.1.2 Scoring criteria for the policy cycle stages

Scoring criteria were used to assign each arrangement a score for seven policy cycle stages: (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 2). In this assessment the advisory and decision-making stages of the policy cycle (Figure 2) are each considered in two modes -- policy mode and management mode -- making a total of seven stages to be assessed. 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 attainable¹⁴.

2.1.3 Principles

The principles upon which arrangements are based are important indicators of the intent of the arrangement. When explicitly stated, principles provide a basis for assessing and adapting the institutional arrangements and practices for the arrangement. Explicit statement of principles also allows for the principles themselves to be revisited and adapted from time to

¹³ https://treaties.un.org/pages/Overview.aspx?path=overview/glossary/page1_en.xml

¹⁴ Note that a high score means that the arrangements are specified on paper but does not mean that they are operating in practice.

time. When there is the need for arrangements to work together, shared values and principles can be an important basis for collaboration (Orsini et al. 2013). Principles and values may also be implied in arrangements, but this is subject to interpretation. In developing the database, a list of principles was prepared, and only those that were explicitly stated were included in the database.

2.2 Database analysis

The database variables that were either numeric or could be categorised were converted into an SPSS database for analysis. This facilitated the preparation of a variety of tabular and graphical summaries.

2.3 Spatial analyses

GIS shape-files representing the area covered were acquired or developed for most of the agreements. These shape-files were used to estimate the spatial overlap for the regional agreements. A [web-based interface](#) has been developed that allows users to visually explore the spatial interrelationships among the arrangements and to graphically illustrate the extent of coverage of ABNJ by the arrangements¹⁵. The sources of information, the procedures used in developing new spatial files and the procedures of analysis are documented by Baldwin and Mahon (2014).

3 The characteristics of ABNJ governance arrangements

Overall, 100 arrangements were found that were considered to be relevant to ABNJ with regard to the four issues of concern (Table 3). Of these, 18 were constituting arrangements and 82 were operational (Table 3, top panel). The majority of arrangements address pollution (55) and fisheries (43), with far fewer dealing with biodiversity (25) and climate change (8)¹⁶. Of the entire set of arrangements, 23 are global in scope, with the remainder being specific to individual oceans or ocean regions. A breakdown of these arrangements by issue, type and region is provided in Table 3. A list of the arrangements included in the database can be found in Appendix 1 with their acronyms for ease of reference. The database can be accessed at <http://onesharedocean.org/data>.

The number of regional arrangements varies widely among ocean regions. The region with by far the most was the North Atlantic with 25 (includes arrangements that apply to the entire Atlantic), although it should be noted that this included adjacent seas (Baltic, Black, Caribbean, Mediterranean). In contrast, in the South Atlantic there are only seven arrangements (again includes entire Atlantic)). The polar regions also have relatively few arrangements, with six for the Southern Ocean and three for the Arctic Ocean. However, as will be discussed later, the set of governance arrangements for the Southern Ocean is among the most comprehensive for any region.

¹⁵ http://onesharedocean.org/open_ocean/governance/regional_clusters

¹⁶ Multiple-issue arrangements are counted for each issue, so the total exceeds 100.

Table 3. 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 O.	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 arrangements are considered to be important means of translating global arrangements to specific geographical areas, which is essential for an ecosystem approach (Crowder et al. 2006, Young et al. 2007, Rice et al. 2011); although not all regional arrangements are directly associated with global ones. A look at the coverage of issues by regional arrangements reveals some of the gaps (Table 4).

Table 4. Numbers of arrangements by issues and regions (B = biodiversity, F = fisheries, P = pollution, C = climate change).

Issue	Region									Total
	Global	Atlantic	North Atlantic	South Atlantic	North Pacific	South Pacific	Indian Ocean	Arctic Ocean	Southern Ocean	
F	3	1	4	2	4	9	2	1	1	27
P	10		13	3		6	11		1	44
B	2	1	1					1	1	6
C	2									2
FP									1	1
FB	3		2	1			1		1	8
PB	1		1							2
PC	1									1
BP			1							1
FPB	1				1					2
PBC						1				1
FPBC			1		1	1		1	1	5
Total	23	2	23	6	6	17	14	3	6	100

For example, there are several regions with no arrangement of any kind for biodiversity. Several of the biodiversity arrangements are also species (polar bears) or taxon (seals, albatrosses and petrels, sea turtles) specific and do not provide broad coverage of habitats and communities. In the case of climate change, there are two global arrangements, the UNFCCC and its Kyoto Protocol, and six combined issue regional arrangements 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 an issue to be addressed directly. This is not unexpected for an issue that is essentially global in nature.

3.1 Timeline of development of arrangements

Governance arrangements with relevance for the ocean first began to come into force in the late 1940s (Figure 3a). However, it was not until the late 70s that a proliferation of both constituting and operational arrangements occurred, with constituting arrangements peaking in the late 1980s. While the peak for operational arrangements also occurs then, they continue to come into force at for the next 15 years. Since the early 2000s, few constituting arrangements have come into force, while operational arrangements have continued to come into force, albeit at a lower rate.

An initial interpretation of the broad pattern for entry into force of arrangements could be that the majority of constituting arrangements originally considered necessary for governance of the ocean are already in place, and that much of what remains to be done is to give effect to them with operational arrangements. Even the numbers of operational arrangements coming into force appears to be tapering off (Figure 3a). Based on the above interpretation, it could be argued that the past 40 years represent an era of arrangement formation, and that the next decades should be a period of implementation, evaluation, adaptation and integration. However, as discussed above, a review of the completeness and coverage of the governance

arrangements for specific issues, such as biodiversity conservation for ABNJ, reveals significant gaps.

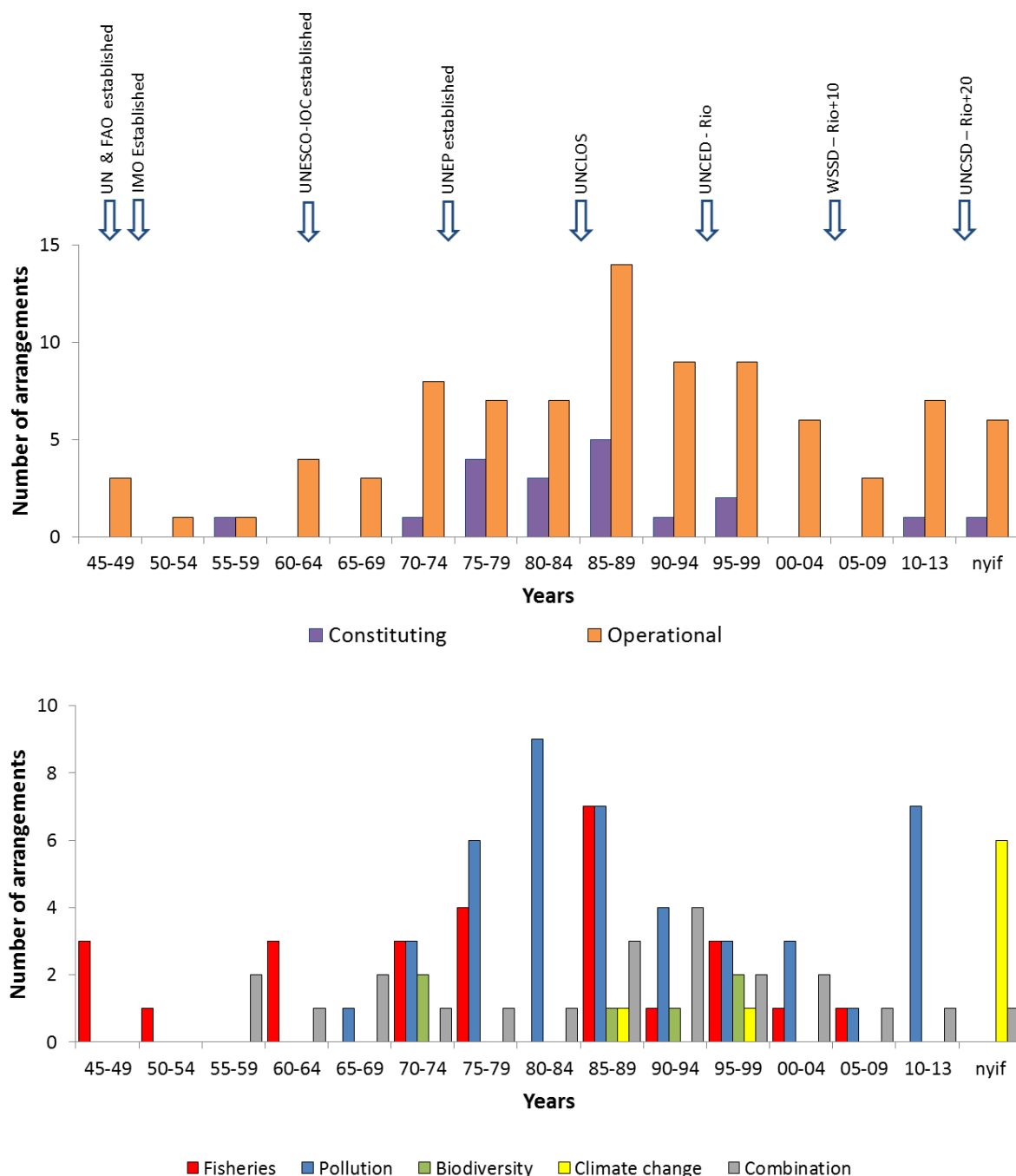


Figure 3. The timeline of development of ocean governance arrangements in five-year intervals by (a) type of arrangement, and (b) issues covered.

The timing of arrangements for the four issues shows that those for fisheries were the first to be put in place, with those for pollution and biodiversity only beginning to come into force in the late 1970s (Figure 3b). The majority of the pollution arrangements are associated with UNEP’s Regional Seas Programme, launched in 1974. While the Convention on Biological Diversity (CBD) has not resulted in operational arrangements that are area specific, its goals, objectives and funding mechanisms have been frequently incorporated into the programmes of Regional Seas conventions and action plans. The CBD has also promoted efforts in cooperation with Regional Seas secretariats to describe Ecologically and Biologically

Significant Areas (EBSAs) in AWNJ and ABNJ (Gjerde et al. 2008, Druel 2012, Druel et al. 2012). As the CBD has no management authority, the management of EBSAs is up to States and competent intergovernmental organisations. This is an area of current high activity in ABNJ governance that will be taken up later in this report.

An aspect that must be kept in mind when looking for temporal patterns in the development of these arrangements is the length of time between adoption and entry into force (Figure 4). It is not uncommon for arrangements to take up to 10 years to enter into force, and some have taken longer. The average times for constituting and operational arrangements to come into force are 4.7 and 4.3 years.

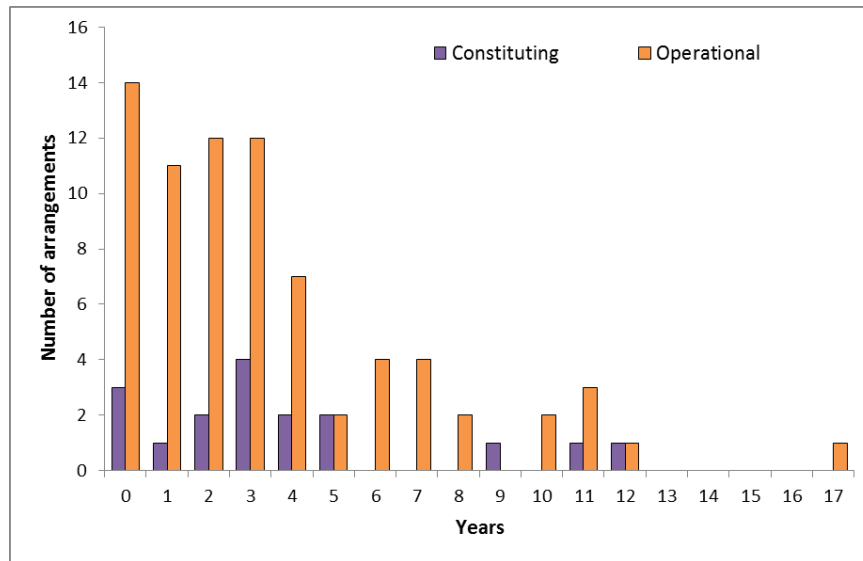


Figure 4. The number of years taken for arrangements to enter into force.

3.2 Policy cycle stage scores and the completeness of arrangements

The analysis of policy cycle stage scores shows differences in strength among the policy cycle stages, and between constituting and operational agreements (Figure 5). 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. However, there is clearly considerable scope for strengthening both advisory and management decision-making stages.

The implementation stage scores lowest, with the majority of arrangements having implementation primarily at the level of the contracting parties with support from the arrangement secretariat (Figure 5). There are relatively few instances where arrangements have coordinated transboundary programs for implementation. It is also striking that for most operational arrangements, implementation is left entirely to the contracting parties. In contrast, for review of implementation, the large majority of both constituting and operational arrangements have clearly identified mechanisms at the transboundary level. Transboundary data and information management mechanisms score higher for operational arrangements than for constituting arrangements, as might also be expected.

The overall picture of completeness or strength of arrangements is illustrated in the final panel of Figure 5. It indicates that for both types of arrangements, there is substantial scope for

strengthening towards levels that could be considered to reflect good governance practices. That operational arrangements generally scored higher than constituting ones is to be expected given that the scope of the former is generally narrow and focused on specific aspects of an issue. **However, it should be noted that for constituting arrangements, clearly specified mechanisms based on sound information inputs are equally important, as this is the level at which policy adaptation and integration is most likely to take place.**

Global and regional levels of constituting and operational arrangements are compared in Figure 6. The distribution of policy cycle stage scores between global and regional arrangements is broadly similar, with the major differences being due to the aggregation of scores at a particular level. For example at the implementation stage for regional constituting arrangements there is an aggregation at score 1 while the scores for global constituting arrangements are distributed among scores 0-2. For constituting agreements, the completeness is slightly higher at the regional level than for constituting arrangements and the opposite is the case for operational arrangements. The differences between global and regional arrangements were not considered to be large enough to warrant interpretation.

The analysis of policy cycle scores by issue shows some differences in strength among the issues (Figure 7). For both policy and management advice, the distribution of scores appears similar among issues, although mechanisms may score a bit higher for fisheries and biodiversity than for pollution. For decision-making, fisheries arrangements clearly scored highest, with decisions 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 were considerably more likely to have regional level support for implementation. The distribution of scores for review mechanisms is similar among issues, but only fisheries arrangements have review mechanisms with built-in repercussions for non-compliance, for example ICCAT, GFCM, IAPFC and PNA (Figure 7). It is interesting that for data and information, biodiversity arrangements scored highest. Fisheries arrangements also scored high in this policy cycle stage, probably because for transboundary stocks, there is the need to bring data together into a single dataset if meaningful analysis is to be carried out. For pollution arrangements, national reporting and compilation of national reports predominates (Figure 7).

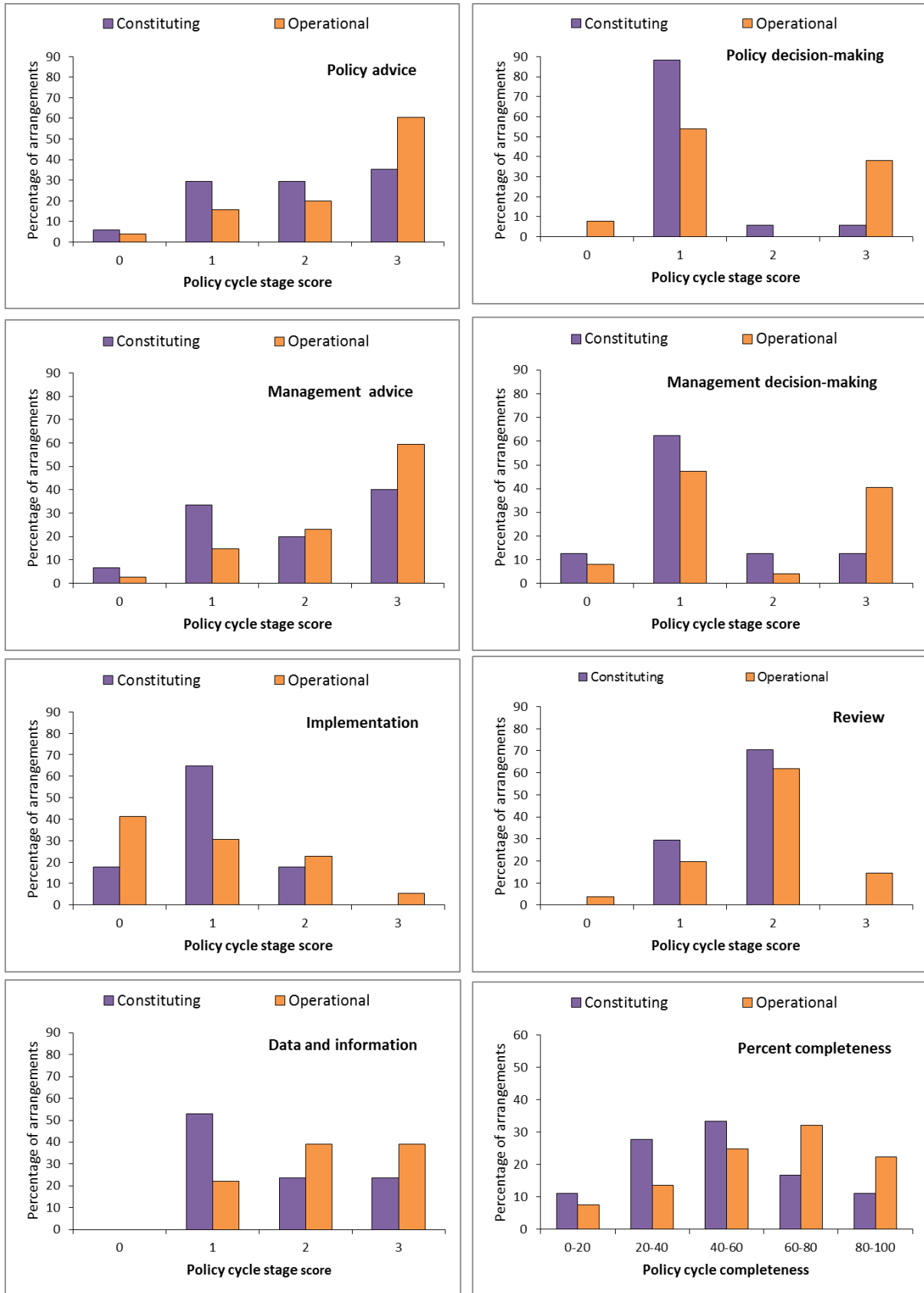


Figure 5. The distribution of scores for each of the seven policy cycle stages, and overall policy cycle completeness for the two major types of arrangements (see Table 2 for the scoring criteria).

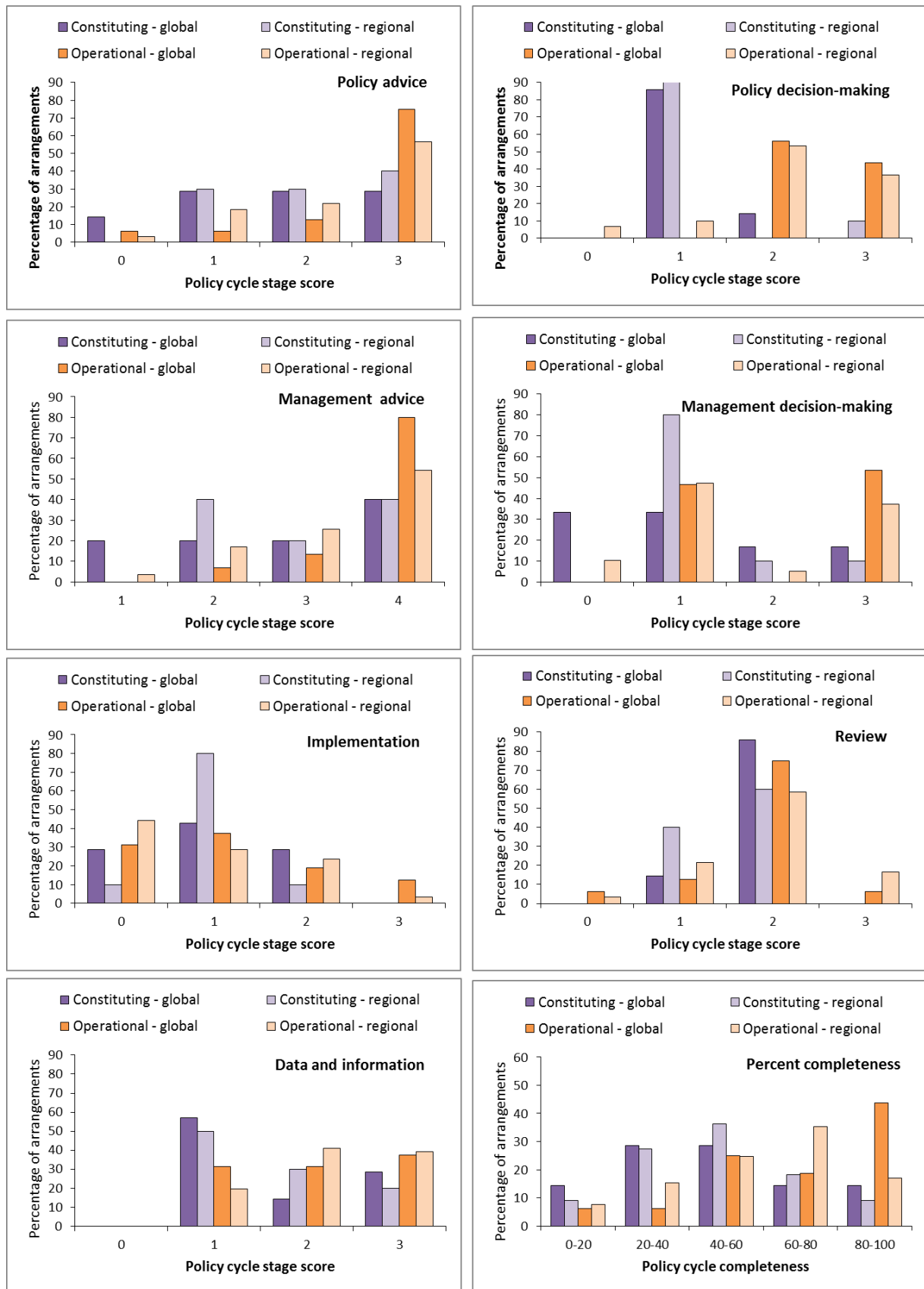


Figure 6. The distribution of scores for each of the seven policy cycle stages, and overall policy cycle completeness for constituting and operational arrangements at global and regional levels (see Table 2 for the scoring criteria).

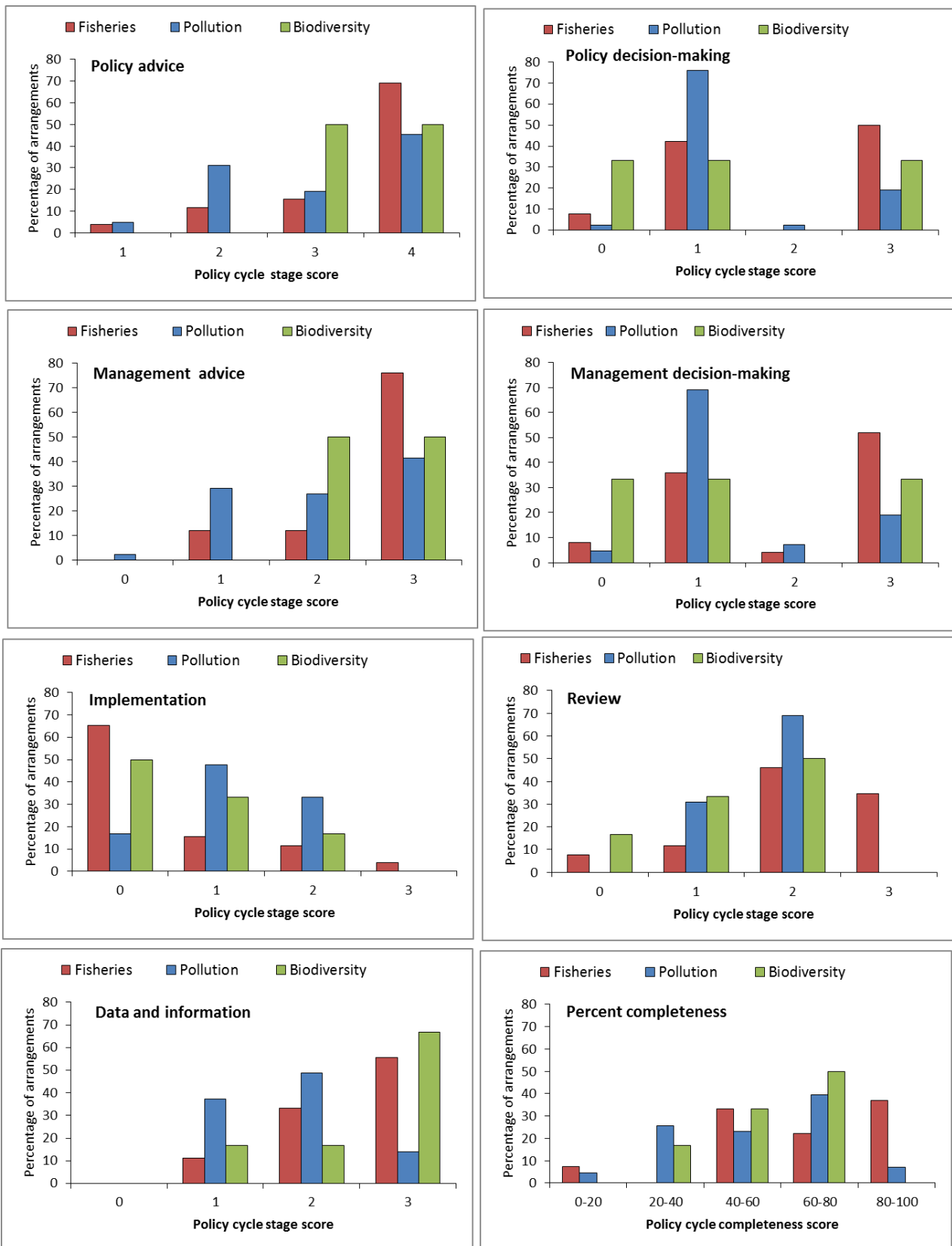


Figure 7. The distribution of scores by issues (fisheries, biodiversity and pollution) for each of the seven policy cycle stages, and overall policy cycle completeness. (see Table 2 for the scoring criteria).

The differences among policy cycle stages and issues shown in Figure 7 are thought to provide insight into where attention should be focussed in order to promote good governance. For fisheries, attention to collaboration in implementation of measures is clearly needed. For pollution the analysis points to the need for strengthening arrangements in the area of data and information reporting and the capacity building needed to support this function. For biodiversity the high proportions of agreements without either policy or management decision making mechanisms (about 30% in each case) is a serious shortcoming.

3.3 Principles

The formulation and explicit statement of principles that reflect foundational values upon which agreements are based are considered to be important aspects of institutional development. These can provide a basis for review of performance, adaptive revision, and for collaboration among arrangements. Ultimately, it was not possible to pursue a comprehensive assessment of the principles upon which arrangements are based. There were too many instances in which principles were not explicitly stated in agreements for this analysis to be feasible. The principles that were stated are compiled in Appendix 3 by issue area and time period.

Overall 24 different principles appeared in the 100 agreements reviewed. Of these, nine occurred in five or more agreements (numbers in parentheses): conservation (42), cooperation (31), sustainability (31), precaution (26), ecosystem approach (14), equity (9), participation (5), prevention of pollution (5), best available scientific evidence (5). It is important to distinguish between how the term 'conservation' is used. In some instances, it may refer to 'conservation of fish stocks' and in other instances refers to 'conservation of living marine resources' or biodiversity per se.

Several principles usually considered to be important for good governance did not appear in any agreement (efficiency, empowerment, rationality, representativeness, responsiveness, stewardship, subsidiarity).

Temporal patterns were expected in the prominence of various principles in agreements. For example, as the ecosystem and precautionary approaches became more widely accepted post UNCED, one would expect to see them more frequently stated in later agreements. However, the data are too sparse to reflect clear patterns over time for any of the principles encountered. Similarly, differences in frequency of occurrence among issues were not discernible, although as might be expected, sustainability ranked highest among fisheries agreements; cooperation was highest for pollution, and conservation was highest for biodiversity. The lack of clearly stated principles in agreements may reveal the lack of a set of common principles or even a shared purpose, which could hamper future efforts towards cooperation and integration in ABNJ.

3.4 Dispute resolution mechanisms

Dispute resolution mechanisms are considered to be an important component of transboundary agreements. Such mechanisms were observed to be present in the majority of constituting arrangements. However, only two thirds of operational arrangements had these mechanisms or were stated as relying on their constituting arrangements for this function (Table 5).

Table 5. The extent to which dispute resolution mechanisms are clearly identified in arrangements (percent (number)).

Dispute resolution mechanism	Type of arrangement		Total
	Constituting	Operational	
No mechanism	11 (2)	36 (29)	32 (31)
Mechanism present	89 (16)	64 (51)	68 (67)
Total	(18)	(89)	(98)

3.5 Provisions for revision and amendment

The capacity to change in response to new information and changing circumstances is an important element in effective transboundary and ABNJ arrangements. The current awareness that climate change brings a high level of uncertainty into the global governance arena reinforces the need for this capacity. The completeness of the policy cycle reflected in Figures 5-7 is an important facet of adaptive capacity. In particular, mechanisms for policy review, advice and decision-making are key components. Adaptive capacity is further strengthened when arrangements clearly specify the process by which they can be revised and amended; albeit in a longer time frame than may be needed for adaptive management.

Provisions for revision and amendment were present in 89% of the arrangements. All 17 constituting arrangements had clearly identifiable mechanisms, as did the majority of operational arrangements (Table 6). As with other aspects of arrangements thought to reflect ‘good governance’, the presence of a revision and amendment mechanism does not mean that it is effectively used.

Table 6. The extent to which the mechanism for revision is clearly identified in the arrangement (percent (number)).

Adaptive mechanism	Type of arrangement		Total
	Constituting	Operational	
No mechanism	6 (1)	9 (7)	118 (8)
Mechanism present	94 (17)	91 (74)	92 (91)
Total	(18)	(81)	(99)

4 The global structure of ocean governance

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 8). 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 8 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. The regional clusters of arrangements reflected in the rows in Figure 8 provide the

potential for horizontal interplay within regions that is needed for integration across issues, and for their integration with the wider spectrum of regional economic cooperation activities.

In the following sections, these two complementary sets of networks are examined in greater detail. Of particular interest is the extent to which the regional clusters can be viewed as networks that form the basis for integrated management or EBM. If so, they can be a locus for interventions aimed at filling gaps and building capacity to strengthen governance at the regional level.

4.1 Global-to-regional issue-based networks

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 (Figure 8). These form the set of issue-based global-to-regional networks that will be examined in greater detail in this section.

4.1.1 The networks

For fisheries, the UN Fish Stocks Agreement (UNFSA), along with the FAO Compliance Agreement and FAO Code of Conduct are the major global constituting arrangements¹⁷, with the FAO being the agency with responsibility for promoting implementation of the Code of Conduct and Compliance Agreement and the UNGA having responsibility 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 regional fisheries bodies' secretariats. 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 identified COFI as playing this role. COFI presently constitutes one of two¹⁸ global inter-governmental fora where major international fisheries and aquaculture problems and issues are examined and recommendations addressed to governments, regional fishery bodies, NGOs, fishworkers, FAO and the international community, periodically on a world-wide basis. COFI has met 29 times to date. COFI has also been used as a forum in which global agreements and non-binding instruments were negotiated (FAO 2013). 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).

¹⁷ Categorized as fisheries and biodiversity in Table 3 due to their ecosystem aspects.

¹⁸ The UNGA also serves in this role both through its review conferences of FSA implementation and its annual sustainable fisheries resolution. FAO COFI is largely fisheries ministries, whereas the UNGA represents all nations and all interests.

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	●			●	●		●

Figure 8. The global ocean governance structure comprising vertical ‘global-to-regional issue-based networks’ of arrangements and complementary horizontal ‘crosscutting regional intersectoral networks’ of arrangements (five hypothetical regions A-E are shown for illustration). The solid circles indicate that the issue covered by the global-regional network is reflected in the arrangements comprising the regional complex.

The RSN first met in 2007 (FAO 2007) and has met twice since. Since 2011, it has produced a regular newsletter. The RSN meetings, held in parallel with the FAO Committee on Fisheries (COFI) 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 a number of 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). The 2011 meeting issued a statement emphasising the important role that the RSN was playing in strengthening RFBs. In parallel with this, FAO has been promoting a series of 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 operational arrangements relating to marine based pollution and one relating to biodiversity - the Ballast

Water Management Convention (BWMC)¹⁹. 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 IMO Regional Presence initiatives²⁰. The promotion and implementation of IMO arrangements is also often facilitated at the regional level through Regional Seas Programme protocols relating to: ship generated waste (5), oil spills (3), disposal of hazardous waste at sea (3), dumping at sea (1), and contamination from exploration (1).

The Regional Seas Programme of UNEP, which began in 1974, is the most extensive initiative promoting implementation of global arrangements. There are 18 Regional Seas areas of which 17 are indirectly or directly connected to ABNJ (Table 7) and are included in the database. Of these, five are administered by UNEP, seven were constituted under UNEP but are managed by other organisations and four 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) (Table 7). 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 arrangements - Convention on Biological Diversity (CBD), Ramsar Convention, Convention on International Trade in Endangered Species (CITES), and Convention on Migratory Species (CMS) - is also pursued via Regional Seas protocols.

The dates in Table 7 show that 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 directly address biodiversity in areas beyond national jurisdiction (Pacific Island Region, the Southern Ocean, Northeast Atlantic, Mediterranean).** The Lima Convention for the South-east Pacific does address pollution in adjacent ABNJ. 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 by 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 describing Ecologically or Biologically Significant Areas (EBSAs) and is aimed at providing scientific information and advice for place-based biodiversity conservation in AWNJ and ABNJ. However, there is still a lack of a complete global level policy process for ABNJ that can make decisions about which areas

¹⁹ 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)

²⁰ 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.

should be protected, and the regional institutional arrangements needed for implementation (Druel et al. 2013). This will be further discussed in a later section on science policy interfaces.

Table 7. The UNEP Regional Seas Programme, conventions and protocols/annexes

Region	Year in force									
	Convention	Protocols/annexes								
		LBS	Ship waste	Oil spills	Emergency	Exploration/offshore activity	Dumping	Protected areas/biodiversity	Hazardous waste transport	Environmental Protection
Wider Caribbean Region - Cartagena Convention	1986	NYIF		1986				2000		
East Asian Seas - No convention										
Eastern Africa - Nairobi Convention ²¹	1996	NYIF			1996			1996		
Mediterranean - Barcelona Convention	1976 2004	1983			2004	NYIF	1978 ²²	1982, 1995	NYIF	
North-West Pacific - No convention										
Western Africa - Abidjan Convention	1984				1984					
Black Sea - Bucharest Convention	1994	NYIF			1994		1994	NYIF		
North-East Pacific - Antigua Convention										
Red Sea/Gulf of Aden -Jeddah Convention	1985	NYIF			1985			NYIF		
ROPME Sea Area - Kuwait Convention	1979	1993			1979	1990			NYIF	
South Asian Seas - No convention										
South-East Pacific - Lima Convention	1986	1986			1987			1984	1995	
Pacific - Noumea Convention	1990				1990		1990			
Arctic - No convention										
Antarctic - The Antarctic Treaty	1961									1998
Baltic Sea - Helsinki Convention	1980 2000	2000	2000		2000	2000	2000			
North-East Atlantic - OSPAR Convention	1972 1998	1998				1998	1998	1998		

²¹ Amended Convention Not Yet In Force (NYIF)

²² Currently being amended – NYIF

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 seem 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 arrangements 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 coordinating arrangements. It is not clear from the arrangements 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.

With regard to pollution, it should be noted that there are global level arrangements that cannot be considered as part of the IMO cluster. The Vienna Convention/Montréal Protocol, and the Stockholm Convention function independently²³. Likewise, for biodiversity, CITES (trade in endangered species) is independent of the CBD.

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 at the global level.** It can be argued that there is a need for integration at both global and regional levels.

4.1.2 Coordination/integration of the global-to-regional issue-based networks

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 had no dedicated staff. The Coordinator and Deputy Coordinator were elected from one of the member bodies for a period of two years. The Secretariat also rotated and was at the coordinator's organisation. 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 oceans focal points with which UN-Oceans would interact directly.

New Terms of Reference for UN-Oceans were approved by the UNGA in 2013 (UNGA resolution 68/70) and will be further reviewed in 2014. These ToRs indicate that the UN Division for Ocean Affairs and Law of the Sea (UN-DOALOS) will be the permanent focal point for UN-Oceans. They also outline procedures for meetings, development of a work programme and reporting. What is not clear is the extent to which 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). But the poor reception of the Oceans Compact has raised questions about this optimistic assessment.

²³ The arrangements for the newly created Minamata Convention on Mercury remain to be determined.

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 (e.g. 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 of emphasis 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 policy cycles and in particular science policy interfaces that are documented is critical for building learning institutions, and learning-enabled networks. But questions about limited mandates, rigid hierarchies and varying priorities (a lack of a common purpose and shared set of principles) leave the future of constructive interplay unsure absent a strong call for enabling mechanisms for cooperation from the UNGA or via a new international agreement.

4.2 Regional clusters for EBM

At the regional level, there appear to be several regions in the world where arrangements pertaining to ABNJ issues (and others pertaining to ocean issues in general) overlap and interact. These 'regional intersectoral clusters/networks' of arrangements may provide arenas for regional or 'place-based'²⁴ implementation of global arrangements together with independent regional arrangements. The governance literature recognises the occurrence of such clusters of arrangements and, when the clusters exhibit certain characteristics, refers to them as regime complexes (Orsini et al. 2013). According to Orsini et al. (2013), to be considered a regime complex, there should be three or more arrangements, they should not be interrelated in a hierarchical way and they should be interacting based on a common purpose and set of principles.

Among the arrangements in the database, 16 regional clusters have been identified based on visual inspection of spatial overlaps (Figure 9). In this section, these clusters are examined to determine if they do indeed form entities for which the whole is 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 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. **Interplay 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 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 regional clusters for ocean governance, and the interrelations of the arrangements that comprise them based on statements regarding formal interactions found in the documentation for the organisations. Undoubtedly, there are many interactions that are not explicitly stated in the material reviewed for the arrangements. For example, organizational representatives may attend meetings of other organizations in the cluster even when there is no formal interaction between the arrangements.

The 16 regional clusters shown in Figure 9 are described in the following sections. For each, the description begins with a diagram showing the types of arrangements and the issues that

²⁴ 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.

they cover. The diagram also shows the documented interactions among the arrangements in the cluster. Some of the diagrams include key regional arrangements that are not in the arrangements database because they do not pertain to ABNJ. The shapes for these are shaded. They are included to show that the regional clusters are much richer than just the arrangements pertaining to ABNJ. These regional arrangements may represent a potential for the regional cluster to be expanded to include responsibility for ABNJ in that area.

Each diagram is followed by a table showing the spatial overlaps of the main arrangements in the regional cluster. These are based on the GIS shape-files for the arrangements. The overlaps shown are asymmetrical, for example ICCAT overlaps the entire Mediterranean, but the Mediterranean only overlaps a small part of the area covered by ICCAT. Finally, there is a tabular overview of the regional cluster that covers (i) the spatial extent of the regional cluster, (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) the relevance of the regional cluster to ABNJ.

It should be noted that the areas covered by the regional clusters are loosely defined and flexible. They are identified primarily as regions where there are several overlapping arrangements aimed at various aspects of ocean governance. As consideration of these clusters continues, it is to be expected that they may be subdivided, combined, and or networked if the interplay required for integrated EBM is to be achieved.

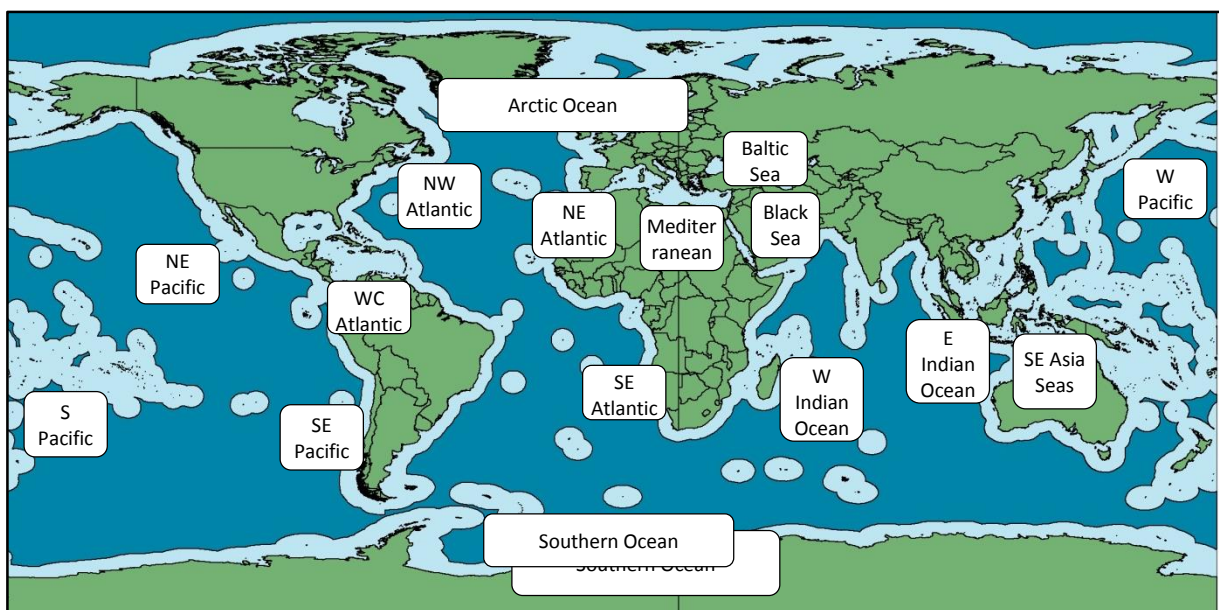


Figure 9. The 16 regional clusters identified.

4.2.1 Northeast Atlantic

The arrangements comprising the Northeast Atlantic regional cluster are depicted in Figure 10. The spatial overlaps among the key arrangements are shown in Table 8, and the regional cluster is summarized in Table 9.

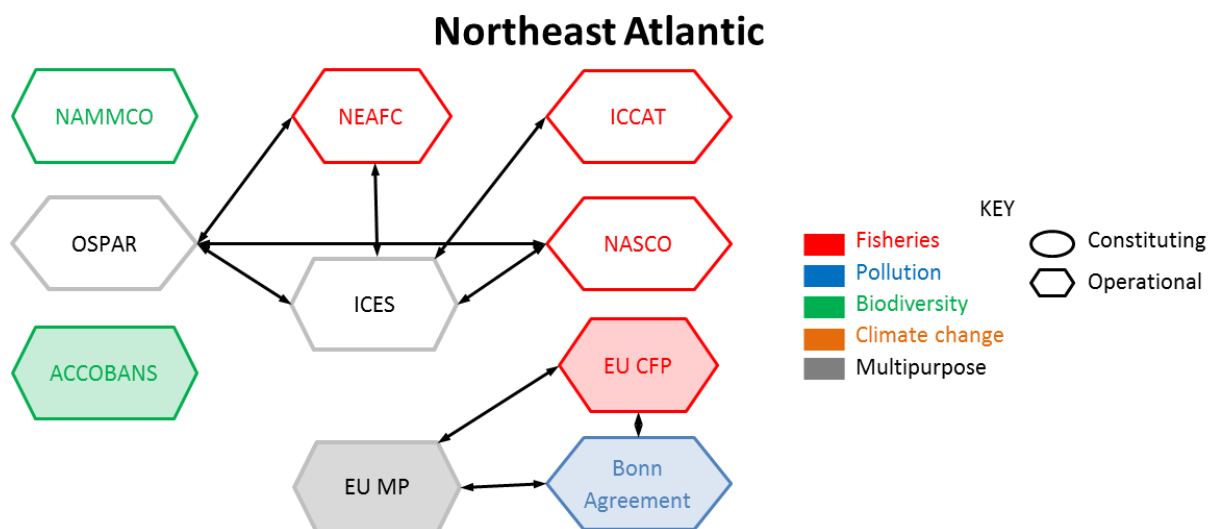


Figure 10. The arrangements comprising the Northeast Atlantic regional cluster

Table 8. Areas (million km²) covered by the key arrangements in the Northeast Atlantic regional cluster and the percentage overlap of the arrangements

	ICCAT	ICES	NAMMCO	NASCO	NEAFC	OSPAR
Area	97.4	14.5	20.8	20.2	13.6	13.8
ICCAT		100	100	100	100	100
ICES	15		70	72	100	99
NAMMCO	21	100		100	100	99
NASCO	21	100	97		100	99
NEAFC	14	94	65	67		98
OSPAR	14	94	66	68	100	

Table 9. Characteristics of the Northeast Atlantic regional cluster

Spatial extent	The arrangements comprising this regional cluster have a high degree of spatial coherence with NEAFC, OSPAR and ICES corresponding closely in space, NAMMCO and NASCO extending across to the Northwest Atlantic. In contrast ICCAT covers the entire Atlantic Ocean and adjacent seas.
Integration	In this region there appears to be minimal integration between the implementing organizations. MOUs exist between OSPAR and both NEAFC and NASCO, however, aside from that, the main link between all of the organizations (with the exception of NAMMCO) is that they are all advised by ICES.
Fisheries	Fisheries management is the prime regulatory focus of this regional cluster. Every arrangement involved in the Northeast Atlantic region other than OSPAR has at least a portion of its mandate dedicated to fisheries, and in most cases that is the sole focus of the agreement. Even NAMMCO, which is in theory related to biodiversity, makes a point of mentioning fisheries (hunting of marine mammals) as a priority.

Pollution	OSPAR is the main body in this region for the monitoring and management of marine pollution.
Biodiversity	OSPAR is the most far reaching agreement in this regional cluster in relation to biodiversity. It is a pioneering body at the global level with regard to the establishment of high seas marine protected areas but has no regulatory authority over sectoral activities such as fishing, shipping or seabed mining that can impact biodiversity
Climate change	Both OSPAR and ICES have bodies that conduct research on climate change. While ICES is an advisory body, it provides advice to various contracting parties through the ICES-PICES Strategic Initiative on Climate Change Impacts on Marine Ecosystems (SICCME). OSPAR also states that it considers the impacts of climate change within the development of its strategies.
Relevance to ABNJ	This regional cluster has strong connections to ABNJ through fisheries arrangements that are largely focused on HMS, straddling and discrete FS and through the establishment of high seas marine protected areas under the auspices of OSPAR. However, the major impact on these areas, fisheries, is not subject to OSPAR's control, or managed in a coordinated way.

4.2.2 Northwest Atlantic

The arrangements comprising the Northwest Atlantic regional cluster are depicted in Figure 11. The spatial overlaps among the key arrangements are shown in Table 10, and the regional cluster is summarized in Table 11.

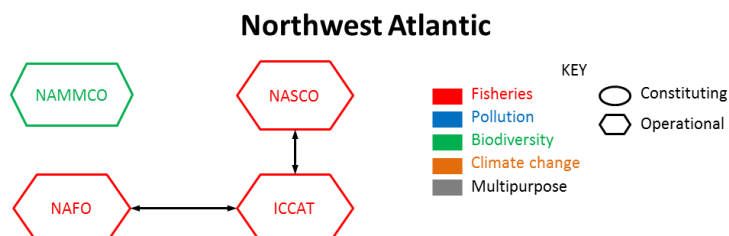


Figure 11. The arrangements comprising the Northwest Atlantic regional cluster

Table 10. Areas (million km²) covered by the key arrangements in the Northwest Atlantic regional cluster and the percentage overlap of the arrangements

	ICCAT	NAFO	NAMMCO	NASCO
Area	97.4	6.3	20.8	20.2
ICCAT		100	100	100
NAFO	6		30	28
NAMMCO	21	100		100
NASCO	21	90	97	

Table 11. Characteristics of the Northwest Atlantic regional cluster

Spatial extent	Three of the arrangements comprising this regional cluster extend beyond in the Northwest Atlantic (NAMMCO, NASCO and ICCAT). Only NAFO is truly focused on the Northwest Atlantic.
Integration	In this region, integration is minimal among the operational organizations and there is no institution that has responsibility for overarching coordination for the area.
Fisheries	Fisheries management in this area is the dominant issue. ICCAT has an Atlantic ocean-wide mandate for tuna and tuna-like fisheries, while NAFO, NASCO specific mandates for the management of fisheries in the area.
Pollution	There is no regional seas programme for this maritime area. Pollution issues are therefore covered by global arrangements or at the national level or not at all.
Biodiversity	NAMMCO manages hunting for marine mammals but some specific ecosystem-focused biodiversity issues. Further, NAFO's management includes provisions that minimize the harmful impact of deep sea fishing activities on "vulnerable marine ecosystems", and requirements to preserve marine biodiversity.
Climate Change	Climate change is addressed only within the context of the arrangements for the above three issues.
Relevance to ABNJ	This regional cluster has some connections to ABNJ through arrangements that are largely focused on fisheries management.

4.2.3 Baltic Sea

The arrangements comprising the Baltic Sea cluster are depicted in Figure 12. The spatial overlaps among the key arrangements are shown in Table 12, and the regional cluster is summarized in Table 13.

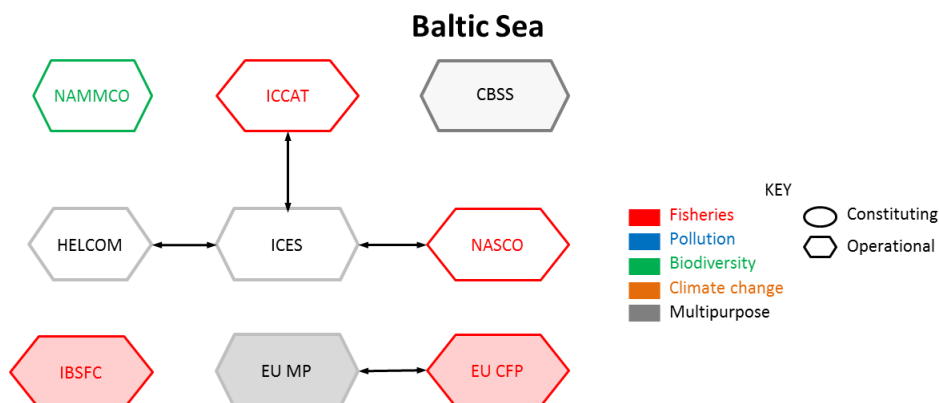


Figure 12. The arrangements comprising the Baltic Sea regional cluster

Table 12. Areas (million km²) covered by the key arrangements in the Baltic Sea regional cluster and the percentage overlap of the arrangements

	ICCAT	ICES	NAMMCO	NASCO	NEAFC	Helsinki
Area	97.4	14.5	20.8	20.2	13.6	0.4
ICCAT		100	100	100	100	100
ICES	15		70	72	100	100
NAMMCO	21	100		100	100	100
NASCO	21	100	97		100	100
NEAFC	14	94	65	67		-
Helsinki	<1	3	2	2	-	

Table 13. Characteristics of the Baltic Sea regional cluster

Spatial extent	The arrangements comprising this regional cluster range in spatial coverage from the Baltic Sea specifically and internal waters of member states (HELCOM), through of those covering of the north-east Atlantic (NEAFC, ICES), and the entire North Atlantic (NAMMCO), to the entire Atlantic Ocean (ICCAT).
Integration	Aside from the fact that all of the arrangements in this area are advised by ICES (with the exception of NAMMCO) there is no significant formalized integration between operational arrangements in this region.
Fisheries	Most arrangements involved in the Baltic region have at least a portion of their mandate dedicated to fisheries (other than HELCOM), and in most cases that is the sole focus of the agreement. NAMMCO is focused largely on hunting of marine mammals from an ecosystem-based perspective, ICES serves as the advisory institution for all of the operational arrangements in this cluster.
Pollution	The Helsinki convention is the primary arrangement for pollution regulation in the Baltic area, it is advised by ICES.
Biodiversity	The Helsinki convention is the most far reaching arrangement in this cluster in relation to biodiversity
Climate change	Both the Helsinki Convention and ICES have bodies that conduct research on climate change. ICES is an advisory body that provides advice to various contracting parties through the ICES-PICES Strategic Initiative on Climate Change Impacts on Marine Ecosystems (SICCME). While HELCOM does not specifically mention climate change in its mandate it has conducted climate change assessments.
Relevance to ABNJ	This regional cluster is not connected to ABNJ; the only tangential connection being in regard to LBS of pollution but there is very little exchange between the Baltic Sea and Atlantic waters. All the region itself is within EEZs, so more emphasis is placed on near shore and internal waters.

4.2.4 Mediterranean Sea

The arrangements comprising the Mediterranean Sea cluster are depicted in Figure 13. The spatial overlaps among the key arrangements are shown in Table 14, and the regional cluster is summarized in Table 15.

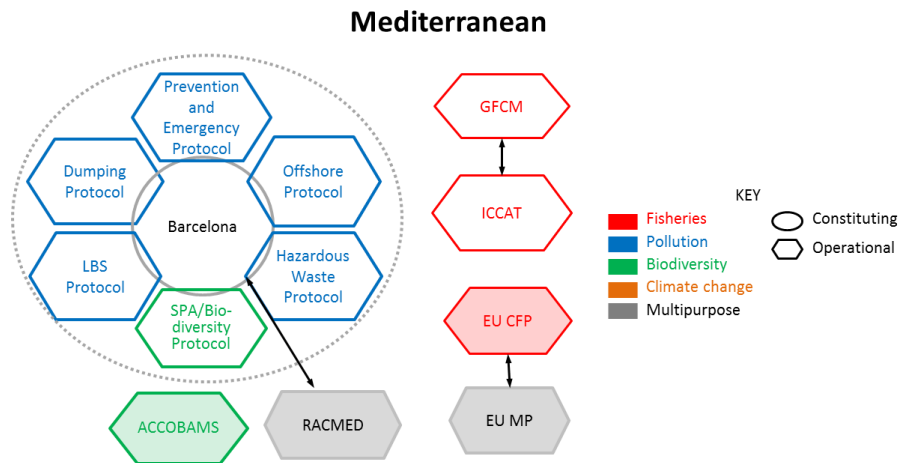


Figure 13. The arrangements comprising the Mediterranean Sea regional cluster

Table 14. Areas (million km²) covered by the key arrangements in the Mediterranean Sea regional cluster and the percentage overlap of the arrangements

	GFCM	ICCAT	Barcelona
Area	3.0	97.4	2.5
GFCM		3	100
ICCAT	100		100
Barcelona	84	3	

Table 15. Characteristics of the Mediterranean regional cluster

Spatial extent	The three arrangements comprising this regional cluster cover the entire Mediterranean Sea, from the Straits of Gibraltar to Straits of the Dardanelles. One, the GFCM also extends to the Black Sea, and another, ICCAT, to the entire Atlantic.
Integration	In this region, linkages between the two major issues – pollution and fisheries – appear weak or absent. The linkage of fisheries with biodiversity also appears weak but there are some efforts to improve this.
Fisheries	The GFCM is instrumental in managing fisheries in this region, based on its authority to adopt binding recommendations for fisheries conservation and management. ICCAT is responsible for HMS in these areas.
Pollution	In this maritime area, the Barcelona Convention, as the constituting arrangement, (along with its five protocols) is the arrangement responsible for protection of the marine environment against pollution.
Biodiversity	The SPA and Biodiversity Protocol explicitly deals with ABNJ issues. ACCOBAMS also deals specifically with marine mammals in ABNJ as well as EEZs

Climate Change	There are no agreements in this regional cluster that deal with climate change at the regional level.
Relevance to ABNJ	This regional cluster's connection to ABNJ is evident through arrangements dealing with fisheries management, pollution and biodiversity; however fisheries and biodiversity are not well integrated. Currently, the area is largely high seas as most Mediterranean coastal states either have not declared a 200 nm EEZ, or they do not enforce them. Hence, the high seas extends seaward of the territorial waters (12 nm, except Greece and Turkey with 6 nm) (UNEP-MAP-RAC/SPA 2011).

4.2.5 Black Sea

The arrangements comprising the Black Sea cluster are depicted in Figure 14. The spatial overlaps among the key arrangements are shown in Table 16, and the regional cluster is summarized in Table 17.

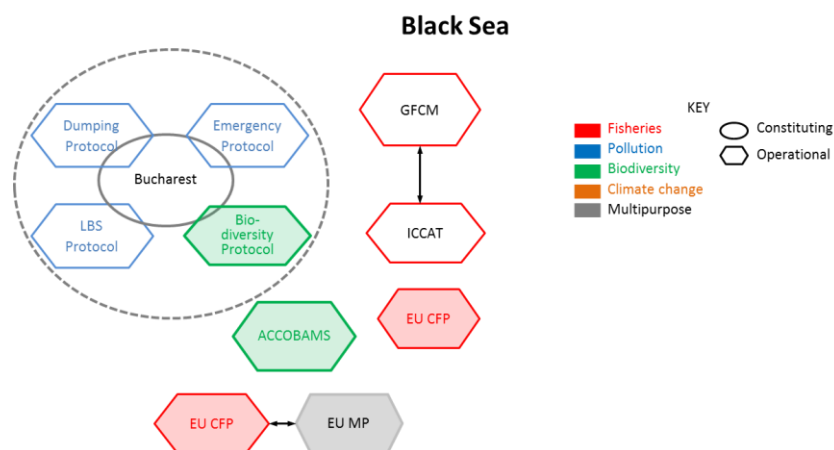


Figure 14. The arrangements comprising the Black Sea regional cluster

Table 16. Areas (million km²) covered by the key arrangements in the Black Sea regional cluster and the percentage overlap of the arrangements

	GFCM	ICCAT	Bucharest
Area	3.0	97.4	0.5
GFCM		3	100
ICCAT	100		100
Bucharest	16	<1	

Table 17. Characteristics of the Black Sea regional cluster

Spatial extent	The arrangements within this region cover the jurisdictional waters of the states around the Black Sea, as well as the Mediterranean.
Integration	On a regional scale, there is no formal integration amongst the two relevant arrangements. While they have participated in workshops together such as the Joint GFCM BSC Workshop on IUU Fishing in the Black Sea (Feb. 2013), currently no MoUs exist between the two
Fisheries	The responsibility for fisheries management falls primarily to the GFCM. It is their responsibility to promote to promote the effective conservation, management and development of the living marine resources.
Pollution	Pollution is governed through the Bucharest Convention and its associated protocols. The protocols address pollution from LBS, dumping, and emergency offload of hazardous substances.
Biodiversity	Biodiversity is addressed on a regional level by a protocol of Bucharest Convention.
Climate change	Climate change is not addressed on a regional level for in this area.
Relevance to ABNJ	The main relevance of the agreements in place in the Black Sea is in regard to pollution that could affect ABNJ ecosystems via outflow into the Mediterranean and on into the Atlantic.

4.2.6 Western Central Atlantic

The arrangements comprising the Western Central Atlantic cluster are depicted in Figure 15. The spatial overlaps among the key arrangements are shown in Table 18, and the regional cluster is summarized in Table 19.

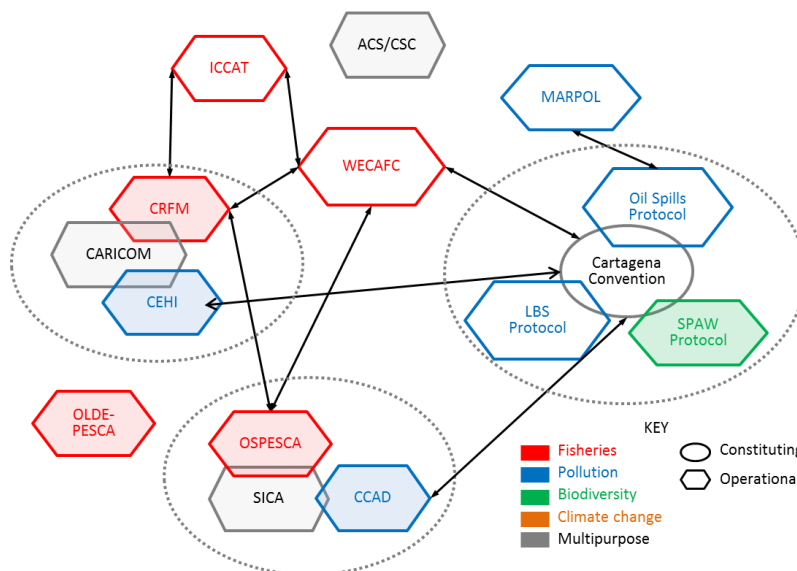


Figure 15. The arrangements comprising the Western Central Atlantic regional cluster

Table 18. 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 19. 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, with the exception being ICCAT which has Atlantic Ocean-wide mandate
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 organizations. OSPESCA and OLDEPESCA also have mandates outside the region, in the Pacific, but have no mandate for ABNJ.
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 (SPAW) 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 larger 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 sea.

4.2.7 Eastern Central and South Atlantic

The arrangements comprising the Eastern Central and South Atlantic cluster are depicted in Figure 16. The spatial overlaps among the key arrangements are shown in Table 20, and the regional cluster is summarized in Table 21.

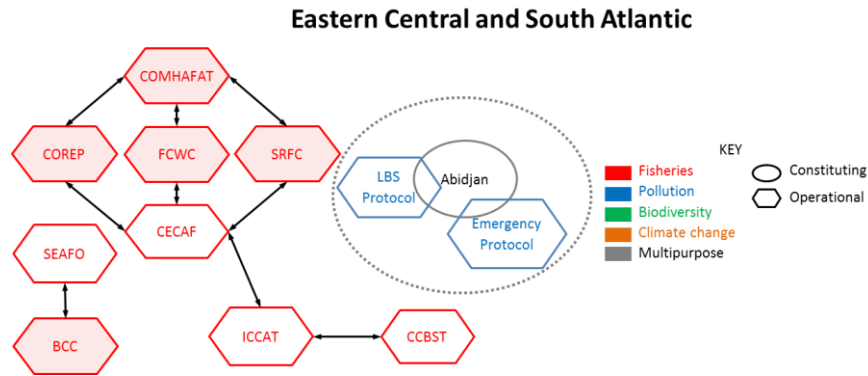


Figure 16. The arrangements comprising the Eastern Central and South Atlantic regional cluster

Table 20. Areas (million km²) covered by the key arrangements in the Eastern Central and South Atlantic regional cluster and the percentage overlap of the arrangements

	CCSBT	CECAF	COMHAFAT	COREP	ICCAT	SEAFO	SRFC	Abidjan
Area	77.0	14.1	23.3	0.4	97.4	16.3	1.5	4.6
CCSBT		-	16	-	24	71	-	21
CECAF	-		61	97	14	4	100	63
COMHAFAT	5	100		100	24	49	100	92
COREP	-	3	2		<1	-	-	8
ICCAT	30	100	100	100		93	100	100
SEAFO	15	5	34	-	16		-	6
SRFC	-	11	7	-	2	-		31
Abidjan	1	21	18	100	5	2	93	

Table 21. Characteristics of the Eastern Central and South Atlantic regional cluster

Spatial extent	The arrangements comprising this regional cluster cover the Eastern Atlantic from the Straits of Gibraltar South to the Antarctic. It should perhaps be treated as two regions, but there are linkages within the area which indicate that it should be treated as a single region.
Integration	Integration is seen among the fisheries mechanisms largely under the aegis of FAO. It may be noted that COMHAFAT at the policy level and the SRFC, FCWC and COREP, at the management level, aim to promote cooperation among states. However, the two bodies for HMS (CCSBT and ICCAT) are not well integrated. The Abidjan Convention also seeks to integrate pollution and biodiversity issues within the region, but does not appear well integrated with fisheries.
Fisheries	CECAF and SEAFO are the FAO bodies responsible for the proper management and development of the fisheries and fishing operations. They are complemented by the indigenous COMHAFAT, SRFC, FCWC and COREP to the north, and the newly established Benguela Current Commission

	(BCC) to the south. ICCAT and the CCBST overlap the area in their responsibility for HMS.
Pollution	The Abidjan Convention and its two protocols are geared towards protecting the area against pollution, more specifically combatting pollution in cases of emergency and LBS and activities on their territories or emanating from other LBS including atmosphere.
Biodiversity	There are no specific arrangements in this regional cluster that deal with biodiversity at the regional level.
Climate Change	There are no agreements in this regional cluster that deal with climate change.
Relevance to ABNJ	This regional cluster has connections to ABNJ through arrangements that are focused on pollution and management of HMS.

4.2.8 Northeast Pacific

The arrangements comprising the Northeast Pacific cluster are depicted in Figure 17. The spatial overlaps among the key arrangements are shown in Table 22, and the regional cluster is summarised in Table 23.

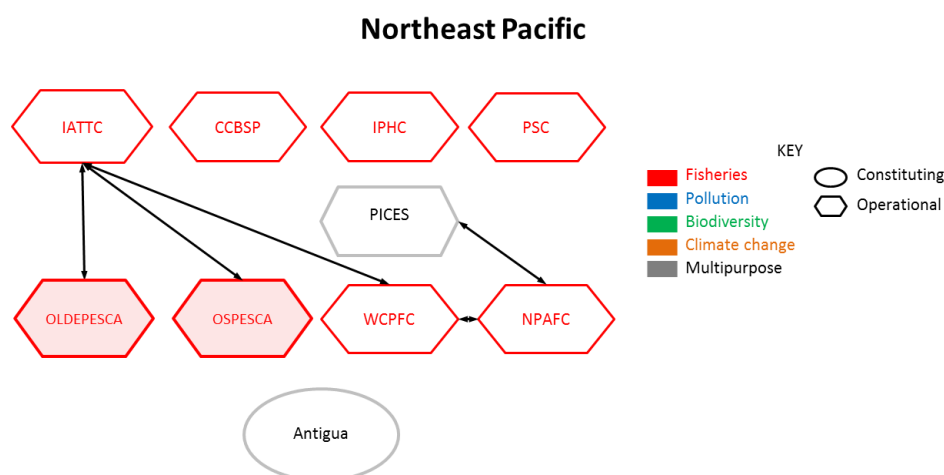


Figure 17. The arrangements comprising the Northeast Pacific regional cluster

Table 22. Areas (million km²) covered by the key arrangements in the Northeast Pacific regional cluster and the percentage overlap of the arrangements

	CCBSP	IATTC	IPHC	NPAFC	OLDEPESCA	OSPESCA	PICES	PSC	WCPFC	Antigua
Area	0.1	67.4	7.7	13.4	6.9	2.1	26.8	0.8	106.2	2.8
CCBSP	-	-	-	1	-	-	<1	-	-	-
IATTC	-	-	30	26	58	63	20	35	10	100
IPHC	-	3	-	34	-	-	29	100	3	-
NPAFC	100	5	60	-	-	-	50	1	9	-
OLDEPESCA	-	6	-	-	-	59	1	-	-	76
OSPESCA	-	2	-	-	18	-	-	-	-	14
PICES	100	8	100	100	2	-	-	100	17	7
PSC	-	<1	11	<1	-	-	3	-	-	-
WCPFC	-	16	41	70	-	-	66	-	-	-
Antigua	-	4	-	-	30	18	1	-	-	-

Table 23. Characteristics of the Northeast Pacific regional cluster

Spatial extent	This area extends from Central America (Panama) north to the Arctic Circle. Some arrangements extend further south (OLDEPESCA, IATTC).
Integration	Integration is relatively weak in this area, aside from the WCPFC which has connections to both the IATTC and the NPAFC. There does appear to be extensive unofficial collaboration. For example, staff of NPAFC are members of PICES, however, no official MOU exists. Similarly, OLDEPESCA attends the COPs of numerous organizations in the region despite a lack of formal partnerships
Fisheries	Fisheries management is the prime regulatory focus of this regional cluster. Every arrangement involved in the Northeast Pacific has at least a portion of its mandate dedicated to fisheries, and in most cases that is the sole focus of the agreement.
Pollution	Aside from the global agreements, only the Antigua Convention has any real focus on pollution, and it is not yet in force. Other agreements in the regional cluster only look at pollution as it relates to their specific fishery. PICES does some research on the effects of pollution, but it has little connection with most of the other arrangements in this regional cluster.
Biodiversity	Aside from the global agreements only the Antigua Convention has any real focus on biodiversity, and it is not yet in force. Other agreements in the regional cluster only look at biodiversity as it relates to their specific fishery. PICES does research on biodiversity, but it has limited connection with most of the other arrangements in this cluster.
Climate change	PICES conducts climate change research although only in an advisory capacity. In this region, the emphasis tends to be on dealing with the effects of climate change rather than the causes.
Relevance to ABNJ	This regional cluster has connections to ABNJ through fisheries arrangements that are largely focused on HMS and the high seas.

4.2.9 Northwest Pacific

The arrangements comprising the Northwest Pacific cluster are depicted in Figure 18. The spatial overlaps among the key arrangements are shown in Table 24, and the regional cluster is summarized in Table 25.

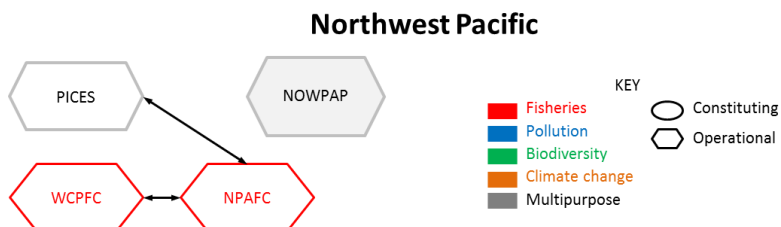


Figure 18. The arrangements comprising the Northwest Pacific regional cluster

Table 24. Areas (million km²) covered by the key arrangements in the Northwest Pacific regional cluster and the percentage overlap of the arrangements

	NPAFC	PICES	WCPFC
Area	13.4	26.8	106.2
NPAFC		50	9
PICES	100		17
WCPFC	70	66	

Table 25. Characteristics of the Northwest Pacific regional cluster

Spatial extent	This area extends from Southeast Asia north to the Arctic Circle.
Integration	Integration is relatively weak in this area, aside from the WCPFC which has connections the NPAFC. There does appear to be extensive unofficial collaboration. For example, staff of NPAFC are members of PICES, however, no official MOU exists. NOWPAP and its activity centers appear to be a source of integration for pollution and biodiversity issues albeit with limited scope.
Fisheries	Fisheries management is the prime regulatory focus of this regional cluster. Every arrangement involved in the Northwest Pacific has at least a portion of its mandate dedicated to fisheries, and in most cases that is the sole focus of the agreement.
Pollution	Aside from the global agreements, only the Regional Seas Northwest Pacific Action Plan (NOWPAP) has any real focus on pollution, and is not a convention. PICES does some research on the effects of pollution in collaboration with NOWPAP.
Biodiversity	NOWPAP has some focus on biodiversity and PICES does some research on biodiversity.

Climate change	PICES conducts climate change research although only in an advisory capacity.
Relevance to ABNJ	This regional cluster has connections to ABNJ through fisheries arrangements that are largely focused on HMS and the high seas.

4.2.10 Southeast Pacific

The arrangements comprising the Southeast Pacific cluster are depicted in Figure 19. The spatial overlaps among the key arrangements are shown in Table 26, and the regional cluster is summarized in Table 27.

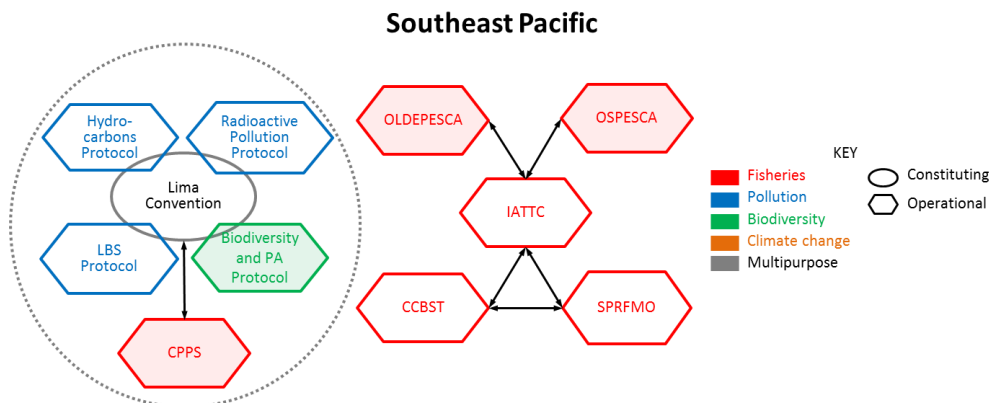


Figure 19. The arrangements comprising the Southeast Pacific regional cluster

Table 26. Areas (million km²) covered by the key arrangements in the Southeast Pacific regional cluster and the percentage overlap of the arrangements.

	CCSBT	CPPS	IATTC	OLDEPESCA	OSPESCA	SPRFMO	Lima
Area	77.0	9.2	67.4	6.9	2.1	59.0	6.6
CCSBT		3	-	-	-	14	1
CPPS	<1		12	23	24	4	84
IATTC	-	90		58	63	58	94
OLDEPESCA	-	17	6		59	-	28
OSPESCA	-	6	2	18		<1	12
SPRFMO	11	29	51	-	<1		18
Lima	<1	60	9	27	37	2	

Table 27. Characteristics of the Southeast Pacific regional cluster

Spatial extent	This area covers the Pacific Ocean off the west coast of South America, from Colombia South to the Antarctic.
Integration	There is a framework for inter-agency cooperation among the Permanent Commission for the South Pacific (CPPS), UNEP (Lima Convention and its protocols) and some two dozen agencies, programmes and Convention Secretariats.
Fisheries	The CPPS, SPRFMO, IATTC and CCSBT have responsibility for conservation and sustainable use of fishery resources. These RFBs are further supplemented by the indigenous bodies Central American Fisheries and Aquaculture Organization (OSPESCA) and the Latin American Organization for Fisheries Development (OLDEPESCA).
Pollution	The Lima Convention and its protocols are focused on protecting the marine environment and coastal zones of the South-East Pacific from hydrocarbon and other harmful substances including those from land-based and radioactive sources. The area of influence of the Lima Convention is stated as extending as far into ABNJ as pollution might reach.
Biodiversity	The Protocol for the Conservation and Management of Protected Marine and Coastal Areas of the South-East Pacific deals with biodiversity, but its focus is within EEZs.
Climate Change	There are no arrangements in this regional cluster that deal with climate change at the regional level.
Relevance to ABNJ	This regional cluster has connection to ABNJ through arrangements that are largely focused on the conservation and sustainable use of fishery resources; and to a lesser extent, also includes measures to protect the marine environment and coastal zones of the South-East Pacific.

4.2.11 Pacific Islands Region

The arrangements comprising the Pacific Islands Region cluster are depicted in Figure 20. The spatial overlaps among the key arrangements are shown in Table 28, and the regional cluster is summarized in Table 29.

Table 28. Areas (million km²) covered by the key arrangements in the Pacific Islands Region regional cluster and the percentage overlap of the arrangements

	PIF	FFA	SPC	WCPFC	SPRFMO	Noumea
Area	26.1	63.7	31.7	590.2	1,097.0	42.2
PIF		34	68	25	<1	63
FFA	80		63	38	56	71
SPC	69	32		5	29	68
WCPFC	100	35	10		23	6
SPRFMO	<1	96	100	43		98
Noumea	99	47	90	4	38	

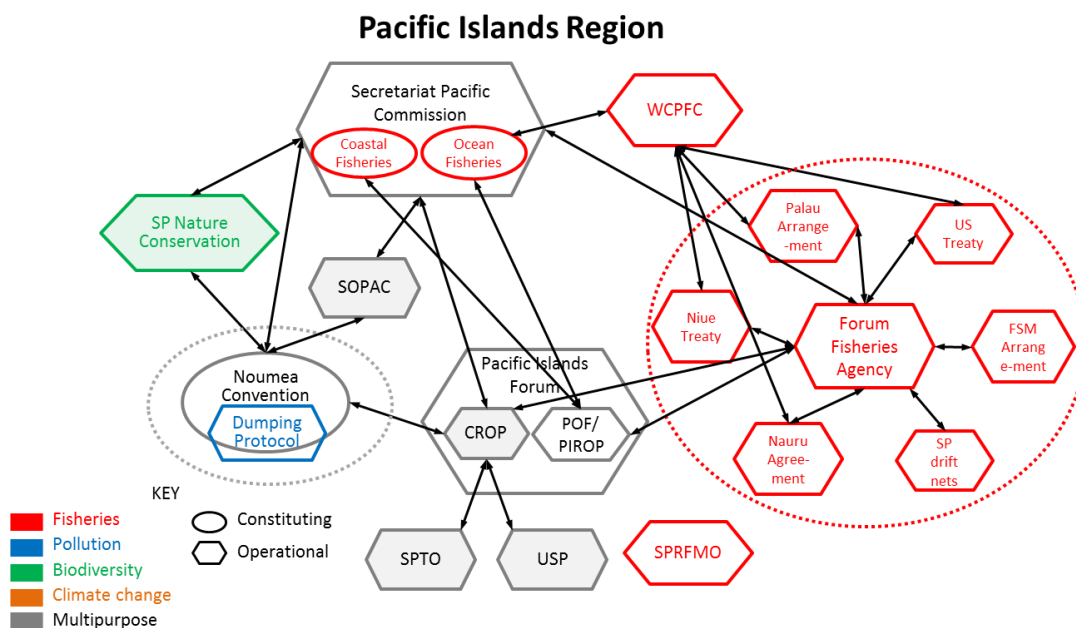


Figure 20. The arrangements comprising the Pacific Islands Region regional cluster

Table 29. Characteristics of the Pacific Islands Region regional cluster

Spatial extent	The arrangements comprising this regional cluster range in spatial extent from the entire Pacific Island Region in the case of the fisheries arrangement for highly migratory tunas (WCPFC) to the EEZs of a subset of Pacific Island Region countries in the case of The Pacific Islands Forum (PIF).
Integration	In this region significant emphasis has been placed on institutional arrangements for regional cooperation. The Pacific Islands Forum (PIF), with 16 member countries provides overarching policy formulation for oceans in the form of the Pacific Oceanscape Framework (POF), successor to the Pacific Islands Regional Oceans Policy (PIROP). The PIF Council of Regional Organizations of the Pacific (CROP) was established to facilitate intersectoral integration in the region (Wright et al. 2006).
Fisheries	Implementation of ABNJ fisheries aspect of Pacific Ocean Policy is primarily the responsibility of the Forum Fisheries Agency which oversees a suite of operational agreements. The Ocean Fisheries Programme (OFP) of the Secretariat of the Pacific Commission (SPC) is a primary source of technical input to both the Western Central Pacific Fisheries Commission and the Forum Fisheries Agency. It is not yet clear how the new (2012) South Pacific Regional Fisheries Management Organization (SPRFMO), which spans the entire South Pacific, from South America to Asia, will relate to these other fisheries agencies.
Pollution	Pollution is addressed primarily by the Secretariat of the Noumea Convention (SPREP).
Biodiversity	The Noumea Convention is one of the few Regional Seas conventions which indicate the intention to address biodiversity in ABNJ. However, this intention refers only to the ABNJ lacunae within the entire set of Pacific Island Region EEZs. This leaves a considerable area of Pacific Island Region ABNJ without an organization responsible for biodiversity.

Climate change	The POF addresses climate change as a crosscutting issue.
Relevance to ABNJ	This regional cluster has strong connections to ABNJ through fisheries arrangements that are largely focused on Highly Migratory Fish Stocks and the newly established SPRFMO for straddling and discrete high seas fish stocks. Promotion of the EAF in these arrangements may increase the attention to biodiversity and ecosystem issues in ABNJ. Despite the stated intention of the Noumea Convention to address ABNJ biodiversity, this regional cluster remains focused on coastal biodiversity in this area particularly with regard to demersal biodiversity.

4.2.12 Southeast Asia

The arrangements comprising the Southeast Asia cluster are depicted in Figure 21. The spatial overlaps among the key arrangements are shown in Table 30, and the regional cluster is summarized in Table 31.

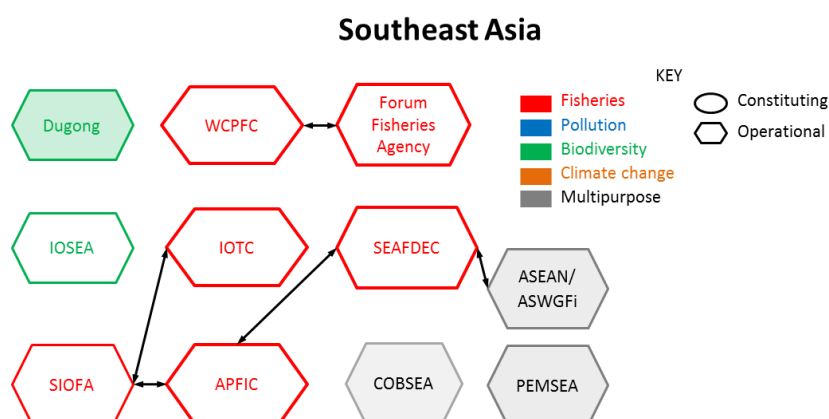


Figure 21. The arrangements comprising the Southeast Asia regional cluster

Table 30. Areas (million km²) covered by the key arrangements in the Southeast Asia regional cluster and the percentage overlap of the arrangements.

	APFIC	CCSBT	IOTC	SEAFDEC	SIOFA
Area	13.5	77.0	61.6	20.6	27.2
APFIC		<1	6	50	-
CCSBT	3		56	15	79
IOTC	27	45		56	99
SEAFDEC	77	4	19		6
SIOFA	-	28	44	7	

Table 31. Characteristics of the Southeast Asia regional cluster

Spatial extent	This regional cluster comprises mainly the EEZs of countries in Southeast Asia.
Integration	There appear to be few formal linkages in this region, and no overarching integration body can be identified for ocean issues. Most integration appears to be at the level of coastal ecosystems which predominate in the region. Purely regional organisations mainly the Partnerships in Environmental Management for the Seas of East Asia (PEMSEA) seek to play an integrative role at this level.
Fisheries	APFIC is the primary fisheries body for this region, supported by SEAFDEC. HMS are covered by IOTC, FFA, WCPFC and CCSBT which intersect in this region, but have only minor overlap with SE Asian countries. Similarly SIOFA has a minor overlap with SEAFDEC in the south. Even though SEAFDEC has a coordinating role, it is purely advisory and is not tied to any particular governance process.
Pollution	There is no Regional Seas convention that deals with pollution at the regional level. However, there is a Regional Seas Action Plan for the Protection and Development of the Marine Environment and Coastal Areas of the East Asian Seas Region (East Asian Seas Action Plan) of the Coordinating Body on the Seas of East Asia (COBSEA) which together with PEMSEA addresses coastal pollution in the region.
Biodiversity	As for pollution, biodiversity is addressed at a regional level by COBSEA and PEMSEA with sea turtles being covered by the Memorandum of Understanding on the Conservation and Management of Marine Turtles and their Habitats of the Indian Ocean and South-East Asia (IOSEA), but this is largely focuses on coastal waters.
Climate Change	There are no agreements in this regional cluster that deal with climate change.
Relevance to ABNJ	This regional cluster has limited connection to ABNJ other than through pollution, HMS fisheries arrangements centered on other regions and IOSEA for sea turtles.

4.2.13 Eastern Indian Ocean

The arrangements comprising the Eastern Indian Ocean cluster are depicted in Figure 22. The spatial overlaps among the key arrangements are shown in Table 32, and the regional cluster is summarized in Table 33.

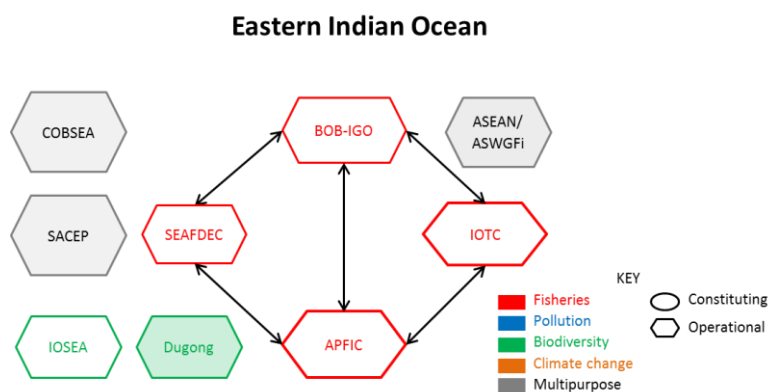


Figure 22. The arrangements comprising the Eastern Indian Ocean regional cluster

Table 32. Areas (million km²) covered by the key arrangements in the Eastern Indian Ocean regional cluster and the percentage overlap of the arrangements

	APFIC	BOBP-IGO	IOTC	SEAFDEC
Area	13.5	2.3	61.6	20.6
APFIC		100	6	50
BOBP-IGO	17		4	7
IOTC	27	100		56
SEAFDEC	77	61	19	

Table 33. Characteristics of the Eastern Indian Ocean regional cluster

Spatial extent	This area is the entire Indian Ocean east of a line from the southern tip of India passing west of the Maldives and continuing south to the Antarctic circle.
Integration	There is some cooperation among bodies responsible for fisheries in this region, but there does not appear to be an overarching integration mechanism for ocean issues.
Fisheries	Fisheries is the prime focus of this regional cluster with the BOBP-IGO, APFIC, IOTC, SEAFDEC and APFIC being fisheries arrangements.
Pollution	There is no Regional Seas Convention for this region. The South Asia Co-operative Environment Programme (SACEP) is a related initiative that has an action plan, The South Asian Seas Action Plan (SASAP), similar to that of a Regional Seas Convention, that deals with pollution.
Biodiversity	The SASAP also addresses biodiversity within the SACEP region. Sea turtles are covered by the MOU on the Conservation and Management of Marine Turtles and their Habitats of the Indian Ocean and South-East Asia (IOSEA), but this is largely focuses on coastal waters, as does the dugong MOU.
Climate change	There are no agreements in this regional cluster that deal with climate change.
Relevance to ABNJ	This regional cluster has connections to ABNJ through fisheries arrangements that are largely focused on HMS, but also other High Seas resources.

4.2.14 Western Indian Ocean

The arrangements comprising the Western Indian Ocean cluster are depicted in Figure 23. The spatial overlaps among the key arrangements are shown in Table 34, and the regional cluster is summarized in Table 35.

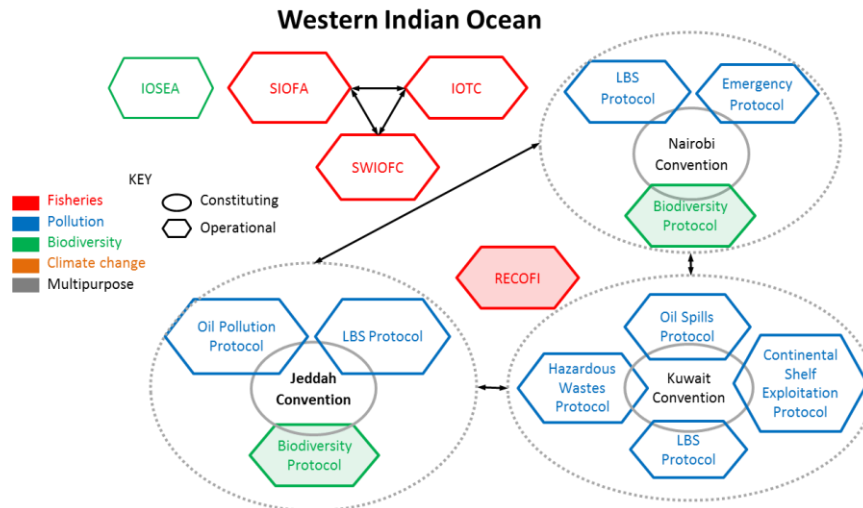


Figure 23. The arrangements comprising the Western Indian Ocean regional cluster

Table 34. Areas (million km²) covered by the key arrangements in the Western Indian Ocean regional cluster and the percentage overlap of the arrangements

	IOTC	SIOFA	SWIOFC	Jeddah	Kuwait	Nairobi
Area	61.6	27.2	8.5	1.1	0.7	6.3
IOTC		99	100	100	100	100
SIOFA	44		-	-	-	2
SWIOFC	14	-		-	-	92
Jeddah	2	-	-		<1	<1
Kuwait	1	-	-	<1		-
Nairobi	10	<1	68	<1	-	

Table 35: Characteristics of the Western Indian Ocean regional cluster

Spatial extent	This area is the entire Indian Ocean west of a line from the southern tip of India passing west of the Maldives and continuing south to the Antarctic circle.
Integration	In this region there is minimal integration among the operational organizations, and no apparent mechanism for overarching coordination. It could be argued that the Jeddah and Kuwait convention areas are sufficiently separate that they should not be included in this regional cluster. The emerging African Centre for Capacity-Building in Ocean Governance (AfriCOG) and Western Indian Ocean Sustainable Ecosystem Alliance (WIOSEA) (Vousden and Stapley, 2013) could be mechanisms for coordination.
Fisheries	Fisheries management is the mandate of the IOTC, SIOFA and the SWIOFC with responsibility for HMS, other fisheries in ABNJ and fisheries in EEZs respectively. RECOFI is responsible for fisheries within EEZs in the Persian Gulf
Pollution	There are three Regional Seas Conventions in this region. The Nairobi, Jeddah and Kuwait Conventions and their protocols are focused on pollution issues.

Biodiversity	A protocol of the Jeddah Convention (NYIF) also focuses on marine biodiversity, but only in coastal areas. SIOFA includes provisions for protecting marine biodiversity but is not yet functional in this area. Sea turtles are covered by the MOU on the Conservation and Management of Marine Turtles and their Habitats of the Indian Ocean and South-East Asia (IOSEA), but this is largely focuses on coastal waters.
Climate Change	There are no agreements in this regional cluster that deal with climate change.
Relevance to ABNJ	This regional cluster has strong connection to ABNJ though its mechanisms dealing with pollution and fisheries for HMS and in ABNJ.

4.2.15 Arctic

The arrangements comprising the Arctic Ocean cluster are depicted in Figure 24. The spatial overlaps among the key arrangements are shown in Table 36, and the regional cluster is summarized in Table 37.

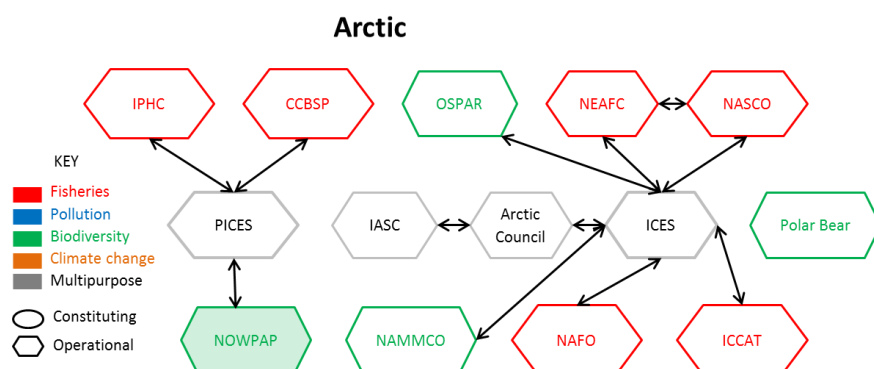


Figure 24. The arrangements comprising the Arctic Ocean regional cluster

Table 36. Areas (million km²) covered by the key arrangements in the Arctic Ocean regional cluster and the percentage overlap of the arrangements.

	CCBSP	ICCAT	ICES	IPHC	NAFO	NAMMCO	NASCO	NEAFC	PICES	Arctic Council	NOWPAP	OSPAR
Area	0.1	97.4	14.5	7.7	6.3	20.8	20.2	13.6	26.8	18.4	8.9	13.5
CCBSP		-	-	-	-	-	-	-	<1	1	<1	-
ICCAT	-		100	-	100	100	100	100	-	35	-	100
ICES	-	15		-	<1	70	72	100	-	26	-	100
IPHC	-	-	-		-	-	-	-	29	7	<1	-
NAFO	-	6	<1	-		30	28	<1	-	9	-	<1
NAMMCO	-	21	100	-	100		100	100	-	35	-	100
NASCO	-	21	100	-	90	97		100	-	35	-	100
NEAFC	-	14	94	-	<1	65	67		-	24	-	100
PICES	100	-	-	100	-	-	-	-		14	66	-
Arctic Council	100	7	33	16	25	31	32	32	10		7	32
NOWPAP	3	-	-	<1	-	-	-	-	22	4		-
OSPAR	-	14	93	-	<1	65	67	99	-	23	-	

Table 37. Characteristics of the Arctic regional cluster

Spatial extent	Strictly, the Arctic is the area north of the Arctic Circle. However, the Arctic Council has not defined a particular geographic area for its activities. In this study we use the area defined by the Working Group on Conservation of Arctic Flora and Fauna (CAFF). This overlaps with several arrangements that are primarily focused on areas to the south, in the north Atlantic and Pacific Oceans, or in the case of ICCAT the entire Atlantic Ocean.
Integration	Integration within the Arctic regional cluster is pursued through the Arctic Council which has working groups addressing several of the issue areas ²⁵ . While they may not be directly connected with each other (NASCO and NEAFC being the exception), through ICES as well as the coordinating bodies of the Arctic Council and NAMMCO most of the arrangements have at least some level of coordination between them. Connectivity among Atlantic Ocean arrangements and of those with the Arctic appears to be higher, as would be expected.
Fisheries	The most prominent fisheries arrangements are NEAFC, NASCO, NAFO, CCBSP and ICCAT. NAMMCO is a mechanism for cooperation in managing the conservation and hunting of marine mammals.
Pollution	Pollution measures are researched by ICES and coordinated through the Arctic Council.
Biodiversity	Biodiversity measures are researched by ICES and coordinated through NAMMCO and the Polar Bear Convention. The Arctic Council Working Group on Conservation of Arctic Flora and Fauna (CAFF) is active in circumpolar marine biodiversity assessment and monitoring that includes ABNJ.
Climate change	Climate change is addressed primarily by the Arctic Council and ICES
Relevance to ABNJ	This regional cluster has connections to ABNJ through fisheries arrangements and coordinating bodies that are largely focused on HMS, as well as agreements that are specifically focused on the high seas.

4.2.16 Southern Ocean

The arrangements comprising the Southern Ocean regional cluster are depicted in Figure 25. The spatial overlaps among the key arrangements are shown in Table 38, and the regional cluster is summarized in Table 39.

²⁵ Arctic Contaminants Action Program (ACAP), Arctic Monitoring and Assessment Programme (AMAP), Conservation of Arctic Flora and Fauna (CAFF), Emergency Prevention, Preparedness and Response (EPPR), Protection of the Arctic Marine Environment (PAME), Sustainable Development Working Group (SDWG).

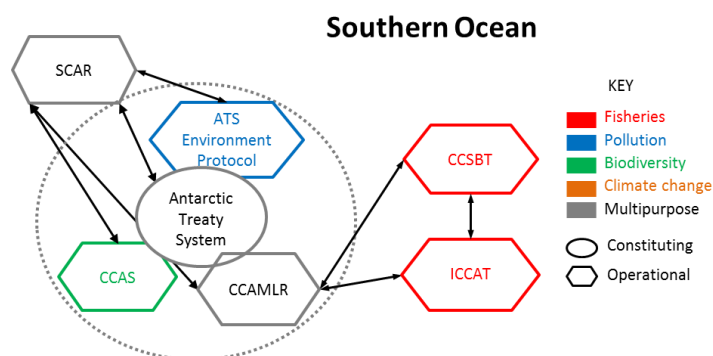


Figure 25. The arrangements comprising the Southern Ocean regional cluster

Table 38. Areas (million km²) covered by the key arrangements in the Southern Ocean regional cluster and the percentage overlap of the arrangements.

	CCAMLR	CCSBT	ICCAT	WCPFC	CCAS	ATS
Area	34.1	77.0	97.4	106.2	20.2	20.2
CCAMLR		18	11	1	100	100
CCSBT	40		24	11	-	-
ICCAT	31	30		-	27	27
WCPFC	2	15	-		3	3
CCAS	59	-	6	1		100
ATS	59	-	6	1	100	

Table 39: Characteristics of the Southern Ocean regional cluster

Spatial extent	This region includes the entire area south of 60°S as well as the area north of 60°S that is part of CCAMLR.
Integration	There is a significant integration of the arrangements in this region through the Antarctic Treaty System (ATS). CCAMLR, the major ocean related component of the ATS, embraces the 'ecosystem approach', which considers the whole Southern Ocean to be a suite of interlinked systems. The Scientific Committee for Antarctic Research (SCAR) has a cross-cutting role in providing technical advice.
Fisheries	CCAMLR has a mandate for fisheries (for non-mammal species) in this area. Its primary mission is conservation of Antarctic marine living resources, including birds, unlike other RFMOs whose focus is managing fisheries.
Pollution	An ATS Protocol focuses on issues related to environmental protection. It sets forth environmental principles to govern Antarctic activities, designates Antarctica as a natural reserve and prohibits all activities related to mineral resources other than scientific research.
Biodiversity	The ATS Protocol also has provisions for biodiversity conservation including in the marine environment. As developed in practice, the Parties to the ATS Protocol have agreed to not designate marine areas without the consent of CCAMLR. CCAMLR focuses on the conservation of Antarctic marine living resources and has a mandate to conserve the ecosystem. CCAS also promotes

	the protection, scientific study, and rational use of Antarctic seals, and to maintain a satisfactory balance within the ecological system of Antarctica. The Agreement on the Conservation of Albatrosses and Petrels (ACAP), while global, is particularly relevant in this region. Annexes to an ATS Protocol directly address biodiversity conservation.
Climate Change	Climate change issues are also addressed under the ATS.
Relevance to ABNJ	This regional cluster has strong connections to ABNJ through fisheries arrangements that are not just focused on the regulation of fishing, but also has a mandate to conserve the ecosystem.

4.2.17 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. The governance literature has recognised the existence of regime complexes in which several arrangements address a single issue (e.g. Raustiala and Victor 2004, Keohane and Victor 2011, Oberthür and Stokke 2011). However, the regional clusters appear to be different from regime complexes, 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.

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 (MCSD) in 1996, in association with the Barcelona Convention whose Secretariat supports the activities of the MCSD. 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 observation that some clusters appear to be progressing towards becoming a structured system capable of promoting integrated ocean governance raises the question of the extent to regional clusters should be perceived as building blocks for global ocean governance system and should be the focus of initiatives to build and strengthen them. It would appear that despite their current deficiencies these clusters could have a potentially important role in implementation of EBM in their respective regions. In most clusters the FAO EAF and the UNFSA mandate to protect marine biodiversity would be an obvious starting point 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 is engaged and integrated. To determine this, further work needs to be done on assessing their role. The following preliminary observations on the structuring characteristics of the clusters suggest possible areas for attention in terms of strengthening.

The extent to which the clusters form discrete spatial entities is also highly variable. The regional arrangements addressing the issues of concern 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, there will be the need for attention to 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 (see section 4.3). A few of the regional clusters appear to also 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 more proactive role in identifying interactions among issues that should be considered in policy making. This topic will be taken up further in the section below pertaining to science-policy interfaces.

Another facet of the regional clusters is the extent to which the arrangements are integrated with the broader regional political economies undertaken by bodies such as ASEAN, SADC, SAARC, MERCOSUR and CARICOM. Söderbaum and Granit (2014) argue that this connectivity 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 in the future, 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 the South African Development Region (SADC) there is a Fisheries Protocol that provides some connectivity between fisheries arrangements and 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. As indicated above, these are preliminary observations and will require further investigation.

The relationships among these regional clusters and their linkages to the global level (Figure 8) is another aspect of the overall structure for ocean governance to consider if the strengthening of regional clusters is identified as a valuable goal. The extent to which global arrangements are reflected in regional clusters should be investigated to determine gaps. Some global arrangements may have mechanisms for place-based application without being part of a regional cluster, for example, implementation by the International Seabed Authority. While the granting of licences for deep sea mining may have implications for ABNJ biodiversity, pollution and fisheries, this assessment found little explicit connection between the process identified for the granting of licences and the arrangements in place for the other sectoral issues.

The proposed perspective of regional clusters as governance units becomes critical if spatial nesting of arrangements is considered to be important for effective ocean governance. Nesting facilitates application of the principle of subsidiarity (Young 2013, p 107) while providing for higher level integration among nested arrangements. Ostrom (2010) points out advantages of pursuing governance through multiple units at diverse scales that cumulatively make a difference. 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). Polycentric approaches such as regional clusters facilitate achieving benefits at multiple scales as well as experimentation and learning from experience with diverse policies.

If the regional clusters are seen as governance units that should be explicitly targeted for strengthening, there are several facets to strengthening their structure and functionality. Broadly, these are: the extent to which the arrangements that comprise them are geographically coherent (spatial overlap and fit); the extent to which the individual arrangements within the cluster reflect good governance structure (as per the assessments in this study) and practice; the extent to which there are functional linkages (interplay) among the arrangements comprising the cluster; and the extent to which they share a common purpose and set of principles and can deal with one another as equals.

4.3 Science-policy interfaces

The UNEP Foresight Process on Emerging Environmental Issues for the 21st century, concluded that the cross-cutting 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.

Diverse factors can be identified as affecting the functionality of science-policy interfaces, ranging from a lack of confidence in the scientific information provided, through lack of mechanisms for access to scientific information, to failure on the part of scientists and advisors to formulate scientific advice in a manner that is understandable (Mitchell et al 2006, Holmes and Clark 2008). The GEF has recognised these and other shortcomings regarding the development of effective science-policy interfaces in its international waters projects and has identified approaches to addressing them (Mee and Adeel 2012).

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.

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. Therefore, in the remainder of this section we will look in turn at science-policy interfaces in: (1) the individual arrangements; (2) the regional clusters; and (3) the global regional issue-based networks.

4.3.1 Individual arrangements

A review of the arrangements in the database indicates that there are three distinct forms of science-policy interfaces: (i) scientific advice as an integral part of the arrangement; (ii) scientific advice coming from outside the arrangement; and, (iii) scientific advice coming from both inside and outside the arrangement. Based on the assessment of policy cycles associated with arrangements, the first of these appears to be by far the most common, as most arrangements seek to have their advisory needs built-in at the time of developing the arrangement.

The overall picture for individual arrangements is that policy advisory mechanisms are weak. Only 35% of constituting arrangements have science-policy interfaces that are clearly specified in the agreement (Table 41). For operational arrangements, the percentage is higher (61%), yet still the remaining 39% appears to be a high number of arrangements for which the science-policy interface is less than 'clearly specified' (Table 41). We recognise that there may be mechanisms in place that may be functioning and known to individual stakeholders that are not evident from the documented sources used in developing the database. Nonetheless, in a functional arrangement, one would expect the mechanism for formulation of advice to decision-makers to be laid out clearly in order to promote transparency and facilitate engagement of stakeholders who may have information to contribute.

Viewed from the perspective of the issues, fisheries arrangements have the highest percentage of instances where the science-policy interface is clearly specified (69%), biodiversity arrangements are next (50%) followed by pollution arrangements (45%) (Table 41). The strength of the fisheries arrangements in this regard is expected, given that fishery resources are dynamic and require regular review for effective management. It is consistent with the relatively high percentage of binding decision-making mechanisms for fisheries, which is 50% as compared to 33% for biodiversity and 19% for pollution. The relatively low percentage of binding decision-making for biodiversity seems inconsistent with the somewhat higher percentage of policy advisory mechanisms that are either identifiable or clearly specified (50%). This has implications for the uptake of scientific information related to biodiversity conservation, such as the CBD reports on areas of ecological or biological significance.

Table 41. The strength of the science-policy interface as indicated by the scores for provision of advice and decision-making and the criteria for assigning the score (CN = constituting, OP = operational, F = fisheries, P = pollution, B = biodiversity).

Strength of policy cycle stage		Percent of arrangements				
		Type		Issue		
Provision of policy advice		CN	OP	F	P	B
0	No transboundary science-policy mechanism, e.g. COP self-advises	6	4	4	5	
1	Science-policy interface mechanism unclear - irregular, unsupported by formal documentation	29	16	12	31	
2	Science-policy interface not specified in the agreement, but identifiable as a regular process	29	20	15	19	50
3	Science-policy interface clearly specified in the agreement	35	61	69	45	50
Policy decision-making						
0	No decision-making mechanism	0	8	8	2	33
1	Decisions are recommendations to countries	88	54	42	76	33
2	Decisions are binding with the possibility for countries to opt out of complying	6	0	0	2	0
3	Decisions are binding	6	38	50	19	33

Clearly, unravelling the interactions among the policy cycle stages will require further detailed analysis of the arrangements. At this stage, what can be said is that there is significant room for improvement in the majority of arrangements regarding the clear specification of advisory mechanisms. While this is best done in the agreement itself, it can be achieved through rules of procedure. There is also room for improvement regarding demand for information from the decision-makers, which is likely to accompany a mandate to make binding decisions that would require more substantive changes to the arrangements.

4.3.2 Regional clusters

Assessing the extent to which there are clear science-policy mechanisms within the regional clusters is a more difficult challenge than assessing individual arrangements comprising the cluster. Although each arrangement within the cluster may not have an internal means of access to scientific advice, if some of the arrangements do have access to science providers in other arrangements and there is interaction among them, there may be flows of information and advice between arrangements that compensate for deficiencies at the level of the weaker arrangements. The extent to which such regional level mechanisms are present may be largely related to the extent to which there are independent institutions in the region with the capacity for generation of information needed for advice, and for contributing to the formulation of the advice.

What is notable is that in some regions, specific science-policy mechanisms have been established with the scientific analysis and advice being provided by different organisations than the one in which decision-making takes place. For example, in the North East Atlantic, ICES plays a central role in generating scientific information and advice for several decision-making bodies (OSPAR, NEAFC, HELCOM). In playing this role, ICES interacts with a diversity of experts from universities, NGOs and government research institutes. A similar role is played by PICES in the North East Pacific, SCAR in the Southern Ocean, IASC in the Arctic, and the SPC in the Pacific Island Region. These organisations all have quite different geneses and relationships with the decision-making mechanism. Some are explicitly identified in the arrangement, and provide advice on a regular basis, while others are called upon as needed.

The regional science-policy arrangements above provide examples of where structured organisational interplay within a regional cluster could contribute to a complete policy process. One advantage of using a separate technical advisory body that provides advice to several decision-making processes is that it could, if so tasked, contribute to the intersectoral integration that is required for EBM. Science-policy interfaces that are isolated within individual arrangements may not have the broad purview required to see and consider interrelationships and trade-offs.

In terms of strengthening regional clusters, there may be regional organisations, or networks of organisations that can be called upon to make structured input to decision-making processes. This may require targeted investigation of the science-policy needs and processes within a region, such as was carried out in the Western Central Atlantic (McConney et al. 2012). It may further require proactive coordination of existing science providers and the establishment of an entity such as the Western Indian Ocean Sustainable Ecosystem Alliance (WIOSEA) (Vousden and Stapley 2013).

4.3.3 Global-to-regional issue-based networks

The science-policy interfaces within the global-to-regional issue-based networks might be expected to focus largely on policy which is then implemented at the regional level. However, this is not always the case, notably for biodiversity where regional level operational arrangements relevant to ABNJ are few. Indeed, there is a considerable diversity of arrangements within global regional issue-based networks.

For fisheries, where there are many regional operational arrangements, the major global level interface deals largely with policy. This is the case with FAO's Committee on Fisheries (COFI)

which meets annually to review fisheries and determine future directions for FAO, and by implication, the Regional Fisheries Bodies. As previously noted, the 'RFB Secretariats' Network' is one source of policy advice to COFI. It should be noted though that not all fisheries bodies are constituted under the FAO and those that are not are less obligated to pursue policies agreed-upon at COFI.

At the global level, the IMO provides an integrated system for pollution, with a well-defined science-policy interface. IMO's Marine Environmental Protection Committee (MEPC) is served by a variety of technical committees associated with various pollution agreements. The IMO also receives technical input from GESAMP, which is an independent body of experts that advises United Nations agencies on the scientific aspects of marine pollution and marine environmental protection (GESAMP 2005). GESAMP was established primarily to address the international policy requirement for a cross-sectoral, interdisciplinary, and science-based approach to marine environmental affairs. It is also intended to facilitate, technical coordination and cooperation among UN agencies for marine affairs. While GESAMP is supported by eight UN agencies (IMO, FAO, UNESCO-IOC, IMO, WHO, IAEA, UNHQ and UNEP), its activities are largely oriented towards pollution and the IMO.

Regarding biodiversity, there is an emerging global initiative to develop a science-policy interface for the CBD similar to that for climate change. The Intergovernmental Panel for Biodiversity and Ecosystem Services (IPBES) was established by a UN General Assembly resolution in 2011 and first met in 2013 (IISD 2013a). Its establishment was the culmination of a process originating in the Millennium Ecosystem Assessment in 2005. However, given its recent formation, it is not possible to assess the functioning of IPBES at this time or its ability to address marine biodiversity in AWNJ or ABNJ.

Despite progress with the IPBES, there is major concern that there are no global level arrangements for science or policy advice or decision-making with regard to the protection of biodiversity in ABNJ, whether through the declaration of protected areas, or the implementation of environmental impact assessment procedures for the High Seas (Warner 2012). These matters are being addressed through the UN Working Group on Marine Biodiversity beyond Areas of National Jurisdiction (BBNJ) (IISD 2013b). This Working Group is to make recommendations to the General Assembly in 2015 on whether to commence negotiations for an international instrument under UNCLOS on marine biodiversity conservation and sustainable use and is currently discussing the scope, parameters and feasibility of such an instrument (IISD 2014, Gjerde, et al. 2008a, Gjerde et al. 2008b, Hart 2008). If this is successful, it may lead to the development of a global level agreement that could encompass the entire policy cycle. A Conference of Parties to such an agreement could set up its own scientific and technical advisory body or utilise the services of an existing body such as the CBD or IPBES. From a policy perspective, this may be the most effective approach to achieving effective integration and coordination for ABNJ through the establishment of a common purpose and set of principles under which all organizations operate. This arrangement could complement efforts to expand the mandates of Regional Seas conventions to include biodiversity in adjacent ABNJ, as proposed by Ban et al. (2013). Even if the global level process is established, as noted above, regional bodies as components of regional clusters would likely have a significant potential role in achieving improved governance for biodiversity in ABNJ as also argued by Druel et al. (2012) and Rochette et al. (2014).

Climate change provides an example of a global science policy interface that has access to one of the most comprehensive and thorough sources of scientific and technical information - the Intergovernmental Panel on Climate Change (IPCC). The IPCC is a scientific body under the auspices of the United Nations (UN). Established in 1988 jointly by UNEP and the WMO and endorsed that same year by the UN, it reviews and assesses the most recent scientific, technical and socio-economic information produced worldwide relevant to the understanding of climate change. It does not conduct any research nor does it monitor climate related data or parameters.

To date, the IPCC has generated five reports on the current state of knowledge regarding global climate change. The scientific evidence brought up by the first IPCC Assessment Report of 1990 underlined the importance of climate change as a challenge requiring international cooperation to tackle its consequences. It therefore played a decisive role in leading to the creation of the United Nations Framework Convention on Climate Change (UNFCCC), the key international treaty to reduce global warming and cope with the consequences of climate change. The IPCC has also responded to the need for information on scientific and technical matters from the UNFCCC and has provided methodologies and guidelines to help Parties to the UNFCCC prepare their national greenhouse gas inventories.

The IPCC Second Assessment Report of 1995 provided important material drawn on by negotiators in the run-up to adoption of the Kyoto Protocol in 1997. The Third Assessment Report came out in 2001 and the Fourth came out in 2007. The Fourth Assessment Report paid greater attention to the integration of climate change with sustainable development policies and relationships between mitigation and adaptation. The Fifth Report was released in March 2014 underscoring the severity of the climate change situation and focusing on adaptation through the lens of vulnerability and risk. The IPCC has organised its work to provide the 'best available scientific information' on climate change matters. In strict terms, the UNFCCC Subsidiary Body for Scientific and Technological Advice (SBSTA) is responsible for provision of timely information and advice on scientific and technological matters. It plays the role of linking the advisory outputs of the IPCC with the policy input needs of the UNFCCC COP.

The UN Regular Process²⁶ for the marine environment is a global initiative to develop a review and advisory process for oceans as a whole that will provide its inputs to the UN General Assembly. It was first conceived at the 2002 UN World Summit on Sustainable Development and taken up by the UNGA in 2003 with the aim of establishing the process by 2004 (UNGA 2003). The initial assessment, based on a survey of existing assessments²⁷ was completed in 2007 (UNEP 2007). In 2009, the UNGA (UNGA 2010) endorsed the following overall objective:

“The regular process under the United Nations would be recognized as the global mechanism for reviewing the state of the marine environment, including socioeconomic aspects, on a continual and systematic basis by providing regular assessments at the global and supraregional levels and an integrated view of environmental, economic and social aspects.

Such assessments would support informed decision-making and thus contribute to managing in sustainable manner human activities that affect the oceans and seas, in accordance with international law, including the United Nations Convention on the Law of the Sea and other applicable international instruments and initiatives.

The regular process would facilitate the identification of trends and enable appropriate responses by States and competent regional and international organizations.

The regular process would promote and facilitate the full participation of developing countries in all of its activities. Ecosystem approaches would be recognized as a useful framework for conducting fully integrated assessments.”

The first cycle of the Regular Process is from 2010 to 2014 and will produce the first World Ocean Assessment (WOA). It is being overseen by an Ad Hoc Working Group of the Whole and carried out a Group of Experts with the assistance of a much larger pool of experts. The Division for Ocean Affairs and the Law of the Sea, Office of Legal Affairs, United Nations, has been designated by the General Assembly to act as the secretariat of the Regular Process.

²⁶ A Regular Process for Global Reporting and Assessment of the State of the Marine Environment, including Socio-economic Aspects.

²⁷ Commonly referred to as the Assessment of Assessments.

The assessment takes a systems approach based on the DPSIR (drivers-pressures-state-impact-response) based on ecosystem services consistent with the approach of the Millennium Ecosystem Assessment (MEA). Whereas, this is clearly an important step towards sustainable use of the oceans it remains to be seen what the quality of the WOA will be, and its impact on decision-making absent a common purpose and set of operating principles shared by the relevant organizations and States

4.3.4 Overall observations on science-policy interfaces

This study can only illustrate the extent to which the suite of science-policy interfaces required for 'use of best available scientific information' in ocean governance exists or not, and the many forms it takes. Science-policy interfaces are required at the level of individual arrangements for effective adaptation of the arrangements to changing circumstances, as well as for management decision-making aimed at bringing about changes in behaviours and practices leading to ecosystems stresses. They are also required at the level of regional clusters, where it may be possible to take advantage of economies of scale, and add integration value, by developing advisory mechanisms that serve multiple decision-making mechanisms. Finally, they are required at the level of global-to-regional, issue-based networks within which sectoral policy is made.

The categorisation of science-policy interfaces for ocean governance, the extent to which they are functioning effectively and the factors that affect their functioning, will require targeted analysis. This should be aimed at the development and sharing of best practices (Holmes and Lock 2010, Runhaar and van Nieuwaal, 2010). There is a substantial body of literature and expertise in the area of science-policy interfaces, both in environmental arrangements and in other subject areas that could be brought to bear on this subject (e.g. van den Hove 2007, 2014, Carden 2009, Bauer and Stringer 2009, Kropp and Wagner 2010).

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;
- The extent to which policy advice tends to come from the same body that is providing technical/management advice;
- The extent to which science-policy interface processes are adaptable with regard to being able to change the questions that are being put to advice providers.

4.4 Linkages between ABNJ and regional architecture

As indicated in the introduction, UNCLOS notes that 'the problems of ocean space are closely interrelated and need to be considered as a whole'. The questions to be addressed in this section are (1) whether the emerging governance architecture for marine areas under national jurisdiction and ABNJ indicates that there are two separate identifiable structures, and (2) whether such a dichotomy is thought to be desirable. Regarding the first question, the set of arrangements in the database reveals clearly that there is a substantial overlap between arrangements for AWNJ and those for ABNJ. This is the case also for the regional clusters, of which most include a variety of arrangements, some having mandates for AWNJ, others for ABNJ, and others with mandates for both. Considering, the large spatial scale of marine ecosystems and the openness of ecosystem boundaries in the sea, there does not appear to be a dichotomy. Notably, Large Marine Ecosystems (LMEs), which are considered to be large scale biophysically defined spatial units for marine EBM often include significant areas of ABNJ (Fanning et al. in press). Therefore, regional level management that takes LMEs into account must be able to deal with both areas within national jurisdiction and ABNJ.

With regard to the second question, given the connectivity and linkages among ocean issues, it could be most appropriate to perceive ocean governance arrangements globally as comprising a single set of nested multi-level arrangements structured as described in section 4 on 'The emerging global structure of ABNJ governance'. This structure comprises a set of

global-to-regional issue-based networks complemented by regional clusters to facilitate regional level implementation needed to achieve EBM and to facilitate engagement with the regional political economies (Figure 8). This structure could reflect what is needed to address governance in both AWNJ and ABNJ. The key point to be made regarding the structure is that it is more advanced for areas within national jurisdiction, and weak for areas beyond national jurisdiction, particularly with regard to biodiversity.

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 structure that will facilitate processes needed to improve adaptive capacity.
- Exploring ways of strengthening lateral linkages among regional clusters.
- 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.

5 Discussion

This study has focused on the governance arrangements and architecture for 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 appear to be established in such a way as to be able to carry out the full policy process thought to be needed for good governance. The study has also looked for any emerging organisational structure among arrangements at global and regional levels that may relate to governance functioning and that may also make it easier to understand and interact with global ocean governance. In this regard, particular attention was paid to science-policy interfaces, and the extent to which there appeared to be separate sets of governance arrangements for AWNJ and ABNJ. Finally, attention will be focused on the extent to which the perceived structure provides an opportunity for monitoring global ocean governance architecture.

5.1 Architecture and 'good' governance versus effectiveness

One of the key challenges in this study was to deal with governance arrangements and architecture, without venturing into the area of assessing governance effectiveness. This limitation was necessary because assessing governance effectiveness would require evaluation of outcomes and impacts that require substantial amount of physical, ecological, social and economic information in the indicator categories shown in Figure 2, over appropriate periods of time. Given the time and resources available for this study, this was not feasible. In this study, architecture is considered to provide the arena that facilitates the processes that are needed to achieve outcomes and impacts. There is also thought to be sufficient experience with architecture and process to support ideas of what characteristics they should reflect in order to facilitate 'good governance'. Several of these characteristics are based on values and principles reflected in many multilateral agreements, including principles such as transparency, accountability, and inclusivity.

Much of what was assessed in the policy cycle scoring process can be considered as determining whether provisions for 'good governance' practices are in place. For example, having clearly specified processes and mechanisms across the seven policy cycle stages is seen as likely to improve transparency, accountability, and ease with which stakeholders can engage with the process. It is also likely to increase the potential for uptake of science in decision-making by providing the arena for iterative science-policy process. Ultimately, these characteristics may produce better governance results, and are often cited as being desirable

characteristics of governance processes, of value 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 conclude clearly that these characteristics are necessary for governance to be effective. The degree to which good governance characteristics are correlated with effective governance remains an emerging area of research in the field of international governance.

It is likely that governance arrangements will be sufficiently context specific that it would be unwise to propose a definite link between 'good governance' and effectiveness (UNDP 2014). Therefore, monitoring the policy cycle stage scores, and overall completeness for the arrangements pertaining to ABNJ should be perceived only as monitoring the extent to which practices considered to reflect 'good governance' are in place. Indeed, the scores considered desirable for policy cycle stages may differ among individual arrangements such that each needs to set its own target level for monitoring. Over time, as variables relating to outcomes of governance are monitored, the extent to which 'good governance' and effectiveness are related will become better understood. Empirical studies to explore the connection between architecture, good governance, and effectiveness are much needed.

5.2 The global architecture for ocean governance

This study takes a holistic perspective in defining global architecture for ocean governance as comprising the entire set of arrangements and their interrelations. Laying out what is perceived as the structure is just a start in this regard. The global architecture to which we refer comprises complementary sets of global-to-regional, issue-based networks and regional clusters described previously. This structure may be seen as emerging but far from complete and with much dysfunctionality. It is essentially operating largely on one pillar of sustainable development, economic use, and missing much of the other pillars of environmental sustainability (with respect to biodiversity conservation) and social sustainability (at both intra- and intergenerational scales).

The perspective on global ocean governance architecture in this paper may have value for several groups of stakeholders. For those practitioners actively engaged in ocean governance at the global level, this architecture may already appear evident. However, articulating it in a form where it can be referred to, discussed, revised and further elaborated seems to have substantial potential to contribute to the discourse on ocean governance. For many practitioners operating within parts of the system there may not be the time or resources to avail themselves of the entire global picture. The perspective developed in this paper is expected to help build a global view on ocean governance by allowing practitioners in all parts of the system to see where their part fits in, how it compares to other parts, and where they may seek to build linkages that will strengthen their part and the whole system.

The third group that may benefit from the perspective in this paper, is those outside the system, or at its margins. These may be people from organisations with global perspectives on related issues such as finance and trade, who do not have the time to make sense of what may, from the outside, appear to be a very complex, disordered and fragmented set of arrangements for the ocean (Freestone 2010, Rothwell and Stephens 2010, Töpfer et al. 2014). They may also be donors or stakeholders seeking to engage with ocean governance but lacking a full understanding of its complexity.

It is hoped that the 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. The ideas relating to networks, nesting of arrangements, the importance of scale and interplay among arrangements that inform this assessment are prominent in conceptual discourse on governance (Young 2002, Kooiman et al. 2005, Sorensen and Torfing 2007). These ideas are not totally abstract or academic, and many of the concepts underlying the perspective developed in this paper have been derived from scholars' analyses of global and regional regimes and regime clusters (Miles et al. 2002, Biermann et al. 2009, Biermann and Pattberg 2012). However, much of this thinking has failed

to gain traction in the world of practitioners and institution builders for global environmental governance. It is hoped 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.

The perspective of regional clusters is central to the overall structure as developed in this study. Their importance has also been highlighted recently by Gjerde et al. (2013) and Rochette et al. (2014). They are given special attention here, because the global-to-regional, issue-based networks have been the primary focus of global ocean governance thus far. The findings from this assessment on ocean governance architecture strongly suggest that there is the need to focus additional attention on the regional clusters in order for them to develop the functionality for good governance. Our findings suggest that these clusters may be essential, if scale appropriate EBM is to be achieved for the oceans. The regional clusters can be viewed as arenas for the interactions required for EBM. They could be seen as governance units that should be promoted and assessed as units. There are many facets to the structure and functionality of regional clusters. These include: the extent to which the arrangements that comprise them are geographically coherent (spatial overlap and fit); the functionality of the individual arrangements within the cluster (as per the assessments in the database); and linkages (interplay) among the arrangements comprising the cluster (including shared principles, etc.) 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”.

5.3 Assessment of current status – gaps and overlaps

The set of arrangements for ABNJ, the evaluation of the strengths of the policy processes, and the overall global structure elaborated in this report constitute an assessment of what is currently in place. This could be considered to be a baseline assessment of ocean governance architecture. There are, however, other aspects of governance architecture that could be pursued in order 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 at least the signing of the arrangements, but additionally, 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.
- 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 in ABNJ has been discussed by Molenaar (2005), Freestone (2012) and others. Coverage for HMS is essentially complete, provided by five well-established RFMOs (ICCAT, IATTC, IOTC, WCPFC, CCSBT). 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. 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). Information on the distribution of marine ecosystems and the development of classification systems for them, and 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. For this reason, many governments, scientists and NGOs are proposing a new agreement under UNCLOS which 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 a 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 (ACAP), which is global but applies only to these species, the two sea turtle agreements 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 can be 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. As can be seen from Table 7 and Figure 26 there are numerous significant gaps in coverage, many of them in areas of high coastal population and extensive marine activity.

The input of chemical pollutants to the ocean via atmospheric transport is a major area of concern (GESAMP 2012). The 1979 Convention on Long-range Transboundary Air Pollution which entered into force in 1983 addresses this issue for a limited number of countries globally, mainly those of Europe. This convention was not included in the analysis as it is much broader in scope than oceans. It still has only 51 parties, and several large countries with significant emissions have yet to join. The numbers of parties to the seven²⁸ protocols giving further effect to this convention range from 25 to 35. Engagement with and implementation of this convention and its protocols is a gap area for ocean pollution.

²⁸ The eighth protocol pertains to financing monitoring and has 46 parties.

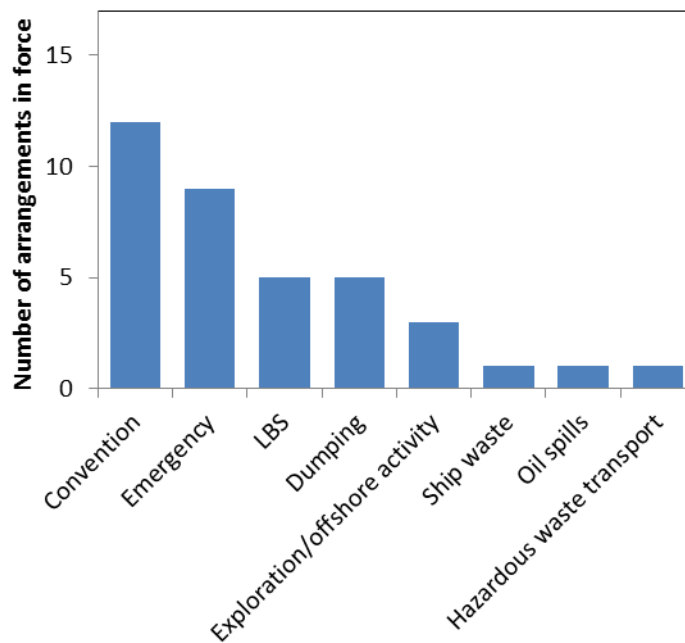


Figure 26. The numbers of Regional Seas Conventions and associated protocols for pollution in place for the 17 Regional Seas regions globally.

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.

5.4 Monitoring system

The two main purposes of the TWAP are to:

- (1) Develop a baseline for assessment of conditions in the five IW water categories
- (2) Put in place a system for monitoring these conditions at regular intervals.

The analysis presented in this report is considered to provide a minimal baseline against which to monitor the development and strengthening of the global architecture for ocean governance.

Ideally, a monitoring system will track the progress in a desired direction or towards a desired state, if this can be determined. In this case, it is more feasible to identify the desired direction for the various parts of ocean governance architecture, than to define a desired state. Changes that would be thought to reflect improvements in various parts of the overall architecture can be specified. The criteria for scoring the stages of the policy cycle provide indicators for individual arrangements. Desirable characteristics for regional clusters can be developed, as can those for the global-to-regional, issue-based networks. However, although general guidelines for improvement can be developed for these various parts of the architecture, explicit conclusions about the desired state for each part are likely to be context specific. Ideally, these should be developed through collaboration between governance experts and practitioners involved in that particular part of the governance system. Thus, the target

conditions that monitoring should track progress towards may differ widely among arrangements, regional clusters, and issue-based networks.

Whereas monitoring governance architecture can provide valuable information on the evolving context for governance processes, there is also the need to assess governance effectiveness. As already discussed, and illustrated in figure 2, effectiveness can only be evaluated on the basis of achieved outcomes such as reduced stresses, improved ecosystems, socially just solutions to problems, and improved human well-being.

6 Key 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 areas within national jurisdiction may be best approached as a single global ocean governance structure.
- The perspective of the single global ocean governance structure as comprising 'global-regional issue-based networks' and 'regional clusters' provides a framework that may help to improve understanding of the very complex, disordered and fragmented set of arrangements for the ocean.

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

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

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 link them with an understanding of how they relate to governance effectiveness. Monitoring of good governance should be arrangement context specific, but nevertheless 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 and ABNJ, is seen as a critical component of strengthening ABNJ governance. This will include promotion of integration mechanisms, 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.

A focus on vertical interplay between regional and global processes and the capacity to integrate at the global policy level is also required. However, the proposal for an UNCLOS Implementing Agreement, if it sets forth the conditions necessary for effective interplay, i.e. 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).

Three key recommendations from 'A blueprint for ocean and coastal sustainability' (UNESCO-IOC, IMO, FAO, UNDP, 2011) are:

- Create and implement an institutional and legal framework to protect, conserve and sustainably manage ecosystems and biodiversity beyond national jurisdiction
- Reform Regional Fisheries Management Organisations

- Enhance coordination, coherence and effectiveness of the UN System on oceans issues

The findings and conclusions of this report are consistent with these recommendations but this report goes further in identifying a global ocean governance framework within which these recommendations can be pursued to achieve all three pillars of sustainable development.

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Appendix 1. List of arrangements included in the database

(CN = constituting, OP = operational, P = pollution, F = Fisheries, B = biodiversity, C = climate change.

Acronym/Short name	Full name	Type	Issues
Abidjan Convention	Abidjan Convention for Co-operation in the protection and Development of the Marine and Coastal Environment of the West and Central African Region	CN	P
Abidjan Convention - Emergency Protocol	Protocol on Cooperation in Combating Pollution in Cases of Emergency and the associated Action Plan for the Protection and Development of the Marine Environment and Coastal Areas of the West and Central African Region	OP	P
Abidjan Convention - LBS Protocol	Protocol concerning Cooperation in the Protection and Development of the Marine and Coastal Environment from land-Based Sources and the Activities	OP	P
ACAP	Agreement on the Conservation of Albatrosses and Petrels	OP	B
Anti-fouling convention	The International Convention on the Control of Harmful Anti-fouling Systems on Ships	OP	P
Antigua Convention	Convention for Cooperation in the Protection and Sustainable Development of the Marine and Coastal Environment of the Northeast Pacific	CN	FPB
APFIC	Asia Pacific Fisheries Commission	OP	F
Arctic Council	Arctic Council	OP	FPBC
ATS	Antarctic Treaty System	CN	FP
ATS Environment Protocol	Protocol on Environmental Protection to The Antarctic Treaty	OP	P
Barcelona Convention	Convention for the Protection of the Marine Environment and the Coastal Region of the Mediterranean	CN	P
Barcelona Convention - Dumping Protocol	Protocol for the Prevention of Pollution in the Mediterranean Sea by Dumping from Ships and Aircraft	OP	P
Barcelona Convention - Hazardous Wastes Protocol	Protocol on the Prevention of Pollution of the Mediterranean Sea by Transboundary Movements of Hazardous Wastes and their Disposal	OP	P
Barcelona Convention - LBS Protocol	Protocol on the Protection of the Mediterranean Sea against Pollution from Land-Based Sources	OP	P
Barcelona Convention - Offshore Protocol	Protocol for the Protection of the Mediterranean Sea against Pollution Resulting from Exploration and Exploitation of the Continental Shelf and the Seabed and its Subsoil	OP	P

Acronym/Short name	Full name	Type	Issues
Barcelona Convention - Prevention and Emergency Protocol	Protocol Concerning Cooperation in Preventing Pollution from Ships and, in Cases of Emergency, Combating Pollution of the Mediterranean Sea	OP	P
Barcelona Convention - SPA and Biodiversity Protocol	Protocol Concerning Specially Protected Areas and Biological Diversity in the Mediterranean	OP	B
BOBP-IGO Agreement	Agreement on the Institutionalisation of the Bay of Bengal Programme as an Inter-Governmental Organisation	OP	F
Bucharest Convention	Convention on the Protection of the Black Sea against Pollution	CN	P
Bucharest Convention - Dumping protocol	Protocol on dumping of waste	OP	P
Bucharest Convention - Emergency Protocol	Protocol on joint action in the case of accidents (such as oil spills)	OP	P
Bucharest Convention - LBS Protocol	Protocol on the control of land-based sources of pollution	OP	P
BWMC	International Convention for the Control and Management of Ships' Ballast Water and Sediments (Ballast Water Management Convention)	OP	P
Cartagena Convention	Convention for the Protection and Development of the Marine Environment of the Wider Caribbean Region (Cartagena Convention)	CN	P
Cartagena Convention - LBS Protocol	Cartagena Convention Protocol Concerning Pollution from Land-Based Sources and Activities	OP	P
Cartagena Convention – Oil Spills Protocol	Cartagena Convention Protocol Concerning Co-operation in Combating Oil Spills	OP	P
CBD	Convention on Biological Diversity	CN	B
CCAMLR	Convention for the Conservation of Antarctic Marine Living Resources	OP	FB
CCAS	Convention for the Conservation of Antarctic Seals	OP	B
CCBSP	Convention on the Conservation and Management of Pollock Resources in the Central Bering Sea	OP	F
CCSBT	Convention for the Conservation of the Southern Bluefin Tuna	OP	F
CECAF	Fishery Committee for the Eastern Central Atlantic	OP	F
CITES	Convention on International Trade in Endangered Species	OP	FB
CMS	Convention on Migratory Species	CN	FB

Acronym/Short name	Full name	Type	Issues
COMHAFAT	Ministerial Conference on Fisheries Cooperation among African States Bordering the Atlantic (COMHAFAT or ATLAFCO)	OP	F
FAO Compliance Convention	The Agreement to Promote Compliance with International Conservation and Management Measures by Fishing Vessels on the High Seas - 1993	OP	F
FFAC	Pacific Islands Forum Fisheries Agency/South Pacific Forum Fisheries Agency Convention	OP	F
GFCM Agreement	Agreement for the establishment of the General Fisheries Commission for the Mediterranean	OP	F
GPA	Global Programme of Action for the Protection of the Marine Environment from Land-based Activities	CN	P
HELCON	Convention on the Protection of the Marine Environment of the Baltic Sea Area - Helsinki Convention	OP	PB
Hong Kong Convention	Hong Kong International Convention for the Safe and Environmentally Sound Recycling of Ships	OP	P
HSDN	United Nations Resolution on High Seas Drift Netting	OP	F
IAC	Inter-American Convention for the Protection and Conservation of Sea Turtles	OP	B
IATTC	Convention for the Strengthening of the Inter-American Tropical Tuna Commission	OP	F
ICCAT	International Convention for the Conservation of Atlantic Tunas	OP	F
ICES	International Council for the Exploration of the Sea	OP	FPBC
IOTC	Agreement for the establishment of the Indian Ocean Tuna Commission	OP	F
IPHC	International Pacific Halibut Commission (IPHC)/Convention for the Preservation of the Halibut Fishery	OP	F
IWC	International Convention for the Regulation of Whaling	OP	F
Jeddah Convention	Regional Convention for the Conservation of the Red Sea and Gulf of Aden Environment	CN	P
Jeddah LBS Protocol	Protocol Concerning the Protection of the Marine Environment from Land-Based Activities in the Red Sea and Gulf of Aden	OP	P
Jeddah Oil Pollution Protocol	Protocol concerning Regional Cooperation in Combating Pollution by Oil and Other Harmful Substances in cases of Emergency	OP	P
Kuwait Continental Shelf Exploitation Protocol	Protocol Concerning Marine Pollution Resulting from Exploration and Exploitation of the Continental Shelf	OP	P
Kuwait Convention	Regional Convention for Cooperation on the Protection of the Marine Environment from Pollution – Kuwait Convention	CN	P

Acronym/Short name	Full name	Type	Issues
Kuwait Convention - Hazardous Wastes Protocol	Protocol on the Control of Marine transboundary movements and disposal of hazardous wastes and other wastes, 1998	OP	P
Kuwait Convention - LBS Protocol	Regional Convention for Cooperation on the Protection of the Marine Environment from Pollution – Kuwait Convention	OP	P
Kuwait Convention - Oil Spills Protocol	Protocol concerning regional cooperation in combating pollution by oil and other harmful substances in cases of emergency, 1978	OP	P
Lima Convention	Convention for the Protection of the Marine Environment and Coastal Areas of the South-East Pacific	CN	P
Lima Convention - Hydrocarbons Protocol	Lima Agreement on Regional Cooperation in Combating Pollution in the South East Pacific by Hydrocarbons and other Harmful Substances in cases of Emergency	OP	P
Lima Convention - LBS Protocol	Lima Protocol for the Protection of the South East Pacific Against Pollution from Land- Based Sources	OP	P
Lima Convention - Radioactive Pollution Protocol	Lima Protocol for the Protection of the South East Pacific from Radioactive Pollution	OP	P
London Convention	London Convention (1975)	OP	P
London Convention - Protocol	London Convention Protocol (2006)	OP	PC
MARPOL	International Convention for the Prevention of Pollution from Ships (MARPOL) Annexes I - VI	OP	P
Montreal Protocol	The Montreal Protocol on Substances that Deplete the Ozone Layer	OP	P
NAFO	Convention on Future Multilateral Cooperation in the Northwest Atlantic Fisheries	OP	F
Nairobi Convention	Nairobi Convention for the Protection, Management and Development of the Marine and Coastal Environment of the West Indian Ocean	CN	P
Nairobi Convention - Emergency Protocol	Protocol Concerning Co-operation in Combating Marine Pollution in Cases of Emergency in the Eastern African Region	OP	P
Nairobi Convention - LBS Protocol	Protocol for the Protection of the Marine and Coastal Environment of the Western Indian Ocean from Land-Based Sources and Activities	OP	P
NAMMCO	Agreement on Cooperation in Research, Conservation and Management of Marine Mammals in the North Atlantic	OP	FB

Acronym/Short name	Full name	Type	Issues
NASCO	Convention for the Conservation of Salmon in the North Atlantic Ocean	OP	F
NEAFC	North-East Atlantic Fisheries Commission	OP	F
Niue Treaty/NTSA	Niue Treaty on Cooperation in Fisheries Surveillance and Law Enforcement in the South Pacific Region and Multilateral NTSA Agreement on Strengthening Implementation of the Niue Treaty	OP	F
Noumea Convention	Convention for the Protection of the Natural Resources and Environment of the South Pacific	CN	PBC
Noumea Convention - Dumping Protocol	Protocol for the Prevention of Pollution of the South Pacific Region by Dumping	OP	P
Noumea Convention - Emergency Protocol	Protocol Concerning Co-operation in Combating Pollution Emergencies in the South Pacific Region	OP	P
NPAFC	Convention for the Conservation of Anadromous Stocks in The North Pacific Ocean	OP	F
OPRC 90	International Convention on Oil Pollution Preparedness, Response and Co-operation 1990	OP	P
OSPAR Convention	Convention for the Protection of the Marine Environment of the North-East Atlantic	OP	BP
PICES	The North Pacific Marine Science Organization	OP	FPBC
PIF/POF/PIROP	Pacific Islands Forum/Pacific Oceanspace Framework/Pacific Islands Regional Oceans Policy	OP	FPBC
PNA	Nauru Agreement Concerning Cooperation in the Management of Fisheries of Common Interest	OP	F
Polar Bear	Agreement on the Conservation of Polar Bears	OP	B
PSC	Treaty Between the Government of the United States of America and the Government of Canada concerning Pacific Salmon	OP	F
SCAR	Scientific Committee on Antarctic Research	OP	FPBC
SEAFDEC	South East Asian Fisheries Development Center	OP	F
SEAFO	The Convention on the Conservation and Management of Fishery Resources in the South East Atlantic Ocean	OP	FB
SIOFA	South Indian Ocean Fisheries Agreement	OP	FB
SPC	Secretariat of the Pacific Community (initially South Pacific Commission)	OP	F
SPRFMO	Convention on the Conservation and Management of High Seas Fishery Resources in the South Pacific Ocean	OP	F
Stockholm Convention	Stockholm Convention on Persistent Organic Pollutants	OP	P
UNCLOS	United Nations Convention on the Law of the Sea	CN	FPB
UNCLOS - Seabed Agreement	Agreement relating to the implementation of Part XI of the United Nations Convention on the Law of the Sea.	OP	PB

Acronym/Short name	Full name	Type	Issues
UNFCC	United Nations Framework Convention on Climate Change	CN	C
UNFCC - Kyoto Protocol	Kyoto Protocol to the United Nations Framework Convention on Climate Change	OP	C
UNFSA	UN Fish Stocks Agreement	CN	FB
Vienna Convention	The Vienna Convention for the Protection of the Ozone Layer	CN	P
WCPFC	Convention on the Conservation and Management of High Migratory Fish Stocks in the Western and Central Pacific Ocean	OP	F
WECAFC	Western Central Atlantic Fisheries Commission	OP	FB
Wellington Convention (SP Drift Nets)	Convention for the Prohibition of Fishing with Long Drift Nets in the South Pacific	OP	F

Appendix 2: Acronyms for other organisations and regional agreements

Acronym/Short name	Full name
ASCOBANS	Agreement on the Conservation of Small Cetaceans in the Baltic, North East Atlantic, Irish and North Seas
ACCOBAMS	Agreement on the Conservation of Cetaceans in the Black Sea Mediterranean Sea and Contiguous Atlantic Area
APEC-OFWG	Asia-Pacific Economic Cooperation (APEC) Oceans and Fisheries Working Group (OFWG)
ASEAN	Association of Southeast Asian Nations
ASEAN/ASWGF	Association of Southeast Asian Nations
BBNJ	UN Working Group on Marine Biodiversity beyond Areas of National Jurisdiction
BCC	Benguela Current Commission
BIMSTEC	Bay of Bengal Initiative for Multi-Sectoral Technical and Economic Cooperation (BIMSTEC) Working Committee on Fisheries
CARICOM	Caribbean Community and Common Market
CARPHA	Caribbean Public Health Agency
CBSS	Council of the Baltic Sea States
CCAD	La Comisión Centroamericana de Ambiente y Desarrollo
COBSEA	Coordinating Body on the Seas of East Asia
COFI	FAO Committee on Fisheries
COREP	Convention Concerning the Regional Development of Fisheries in the Gulf of Guinea and the Regional Fisheries Committee for the Gulf of Guinea (COREP)
CPPS	Permanent Commission of the South Pacific
CRFM	Caribbean Regional Fisheries Mechanism
CRFM	Agreement establishing the Caribbean Regional Fisheries Mechanism (CRFM)
CROP	Council of Regional Organisations of the Pacific
CROP	Council of Regional Organisations of the Pacific
DPSIR	Drivers-pressures-state-impact-response
Dugong MOU	Memorandum of Understanding on the Conservation and Management of Dugongs and their Habitats throughout their Range
EU Maritime Policy	European Union Integrated Maritime Policy
EU-CFP	European Union Common Fisheries Policy
FAO	Food and Agriculture Organisation of the UN
FCWC	Convention for the establishment of Fishery Committee of the West Central Gulf of Guinea
GESAMP	Joint Group of Experts on the Scientific Aspects of Marine Environmental Protection
HELCOM	Baltic Marine Environment Protection Commission
IAEA	International Atomic Energy Agency

Acronym/Short name	Full name
IASC	International Arctic Science Committee
IMO	International maritime Organisation
IOSEA	The Memorandum of Understanding on the Conservation and Management of Marine Turtles and their Habitats of the Indian Ocean and South-East Asia
IPBES	Intergovernmental Panel for Biodiversity and Ecosystem Services
IPCC	Intergovernmental Panel on Climate Change
LME	Large Marine Ecosystems
MEA	Millennium Ecosystem Assessment
MEPC	IMO Marine Environmental Protection Committee
NOWPAP	North West Pacific Action Plan
NOWPAP	Action Plan for the Protection, Management and Development of the Marine and Coastal Environment of the Northwest Pacific Region
OECS	Organisation of Eastern Caribbean States
OLDEPESCA	Agreement instituting the Latin American Organization for Fisheries Development
OSPESCA	Central America Fisheries and Aquaculture Organization
PEMSEA	Partnerships in Environmental Management for the Seas of East Asia
PIF	Pacific Islands Forum
PRCM	Regional Marine and Coastal Conservation Programme for West Africa
RACMED	Regional Advisory Council for the Mediterranean
RECOFI	Agreement for the establishment of the Regional Commission for Fisheries
SAARC	South Asian Association for Regional Cooperation
SACEP	South Asian Cooperative Environment Programme
SADC	South African Development Community
SBSTA	UNFCCC Subsidiary Body for Scientific and Technological Advice
SICA	Sistema de la Integración Centroamericana
SOPAC	Pacific Islands Applied GeoScience Commission
SPAW Protocol	Specially Protected Areas and Wildlife Protocol, Convention for the Protection and Development of the Marine Environment of the Wider Caribbean Region
SPTO	South Pacific Tourism Organisation
SRFC	Sub-Regional Fisheries Commission
UNEP	United Nations Environment Programme
UNESCO-IOC	Intergovernmental Oceanographic Commission of UNESCO
USP	University of the South Pacific
WHO	World Health Organisation
WIOSEA	Western Indian Ocean Sustainable Ecosystem Alliance
WOA	World Ocean Assessment

Principles	Pollution														Biodiversity																	
	45-50	50-55	55-60	60-65	65-70	70-75	75-80	80-85	85-90	90-95	95-00	00-05	05-10	10-15	NYIF	Total	45-50	50-55	55-60	60-65	65-70	70-75	75-80	80-85	85-90	90-95	95-00	00-05	05-10	10-15	NYIF	Total
Conservation							2	1	1	6	1					11							2									3
Cooperation							2		4	4	5			2		17							1									1
Sustainability								1	3		3		2	1		10										1						1
Precaution									2		2		3	2	1	10											1	1				2
Ecosystem approach											3			1		4											1				1	
Equity									1		1					2							1			1					2	
Participation									1	4						5															0	
Prevention of pollution							1	1								2															0	
Best available scientific evidence																0											1				1	
Coordination							2			2						4															0	
Polluter pays														1		1															0	
Transparency																															0	
Effective MCS/ Management																															0	
Adaptiveness																															0	
Ecosystem-based management									1							1															0	
Integration											1					1															0	
Optimum utilisation																															0	
Responsibility																											1				1	
Best practice																															0	
Poverty alleviation									1							1															0	
Attention to small-scale fisheries																															0	
Environmental Impact Assessment																															0	
Principles of commercialisation																															0	
Multi-scale											1					1															0	
Good governance									1							1															0	

Principles	Climate change	Mixed
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