Governance baselines as a basis for adaptive marine spatial planning

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Abstract A marine spatial planning (MSP) initiative—if to be successful—has to be rooted in a thorough understanding of the tradition and structures of the governance system in the area targeted for the initiative. After decades of a mainly sectoral approach towards maritime affairs, governments began to recognised the need for a governance framework that applies a more integrated approach to maritime policy. The new Integrated Maritime Policy of the European Union is only one example for such a changed way of policy and decision making. The assembly of a governance baseline can help to identify the crucial hindering and success factors for the implementation of MSP. A governance baseline has two parts. Part One focuses upon the past and current performance of the governance system as it has responded—or failed to respond—to changes in the condition of ecosystems in a specific locale. Part Two of a baseline outlines a strategic approach to the design of a new program and records the goals, objectives and strategies of MSP implementation. Focus on both governance processes and their outcomes is essential and forms the core justification for documenting governance responses to ecosystem change.

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Maritime spatial planning as an expression of ecosystem governance

Ecosystems are places (Ehler 2008) and maritime spatial planning (MSP) is the process by which ecosystem-based management is organized to produce desired outcomes in marine environments (Douvere 2008; Ehler and Douvere 2009). Ecosystem based management, in turn, is an approach to analysis, planning and decision making that considers entire ecosystems, including humans, and evaluates the cumulative impacts of diverse human activities. Ecosystem-based management defines its goal as maintaining or restoring an ecosystem in a healthy, productive and resilient condition that provides the services that humans want and need (McLeod et al. 2005). This paper contends that to be successful a MSP initiative should be rooted in a thorough understanding of the traditions and structures of the existing governance system in the areas targeted for an MSP initiative. In this paper we describe how the assembly of a governance baseline (Olsen et al. 2009) can (1) structure an analysis of the existing governance system and thereby inform an MSP planning process; (2) provide an explicit basis for the long-term practice of adaptive governance that learns from its experience and responds to changing ecosystem conditions, and (3) provide a structure and formats that encourage comparative analysis across MSP initiatives and collaborative learning.

The term ecosystem governance is used to describe the process by which the long term societal and environmental goals for a specific place are defined and the processes and structures are assembled by which to achieve them. For example, in 2007 the European Commission adopted an Integrated Maritime Policy (the "Blue Book") that sets out an integrated governance framework for maritime affairs that addresses the maritime dimension of the major issues facing Europe's seas and oceans today, including energy supply and security, climate change, environmental protection and conservation, research and innovation, competitiveness and job creation, internal trade, transport and logistics. This integrating approach makes the Maritime Policy a vehicle for the practice of the ecosystem governance. The Action Plan that accompanied the "Blue Paper" highlights the need for a governance framework that applies the integrated approach at all levels, and provides cross-cutting policy tools. The Commission adopted more specific guidelines in 2008a, b that underscore the importance of providing for the active involvement of stakeholders and coastal communities and the "Roadmap on Maritime Spatial Planning: Achieving Common Principles in the EU" that further details the need for stakeholders to "coordinate their action and optimises the use of marine space to benefit economic development and the marine environment." The EU Commission sees the desired outcome of MSP as the rational and well-balanced allocation of marine space to maritime uses and the marine environment. The organization of these EU actions into a governance baseline, as described in this paper, and the application of its standardized markers for assessing both the processes and the outcomes of the Integrated Marine Policy would provide an objective basis for evaluating the impacts of the policy and encourage the practice of a learning-based approach as it reacts to the experience gained from its implementation.

Governance baselines as a response to the central challenges of marine spatial planning

The major questions to be addressed when analyzing the governance of maritime space include the following:

- What are the features of the existing governance system and what are its strengths and weaknesses as these relate to the desired outcomes of an MSP initiative?
- What are the features in the long-term trajectory of ecosystem change (both its societal and environmental dimensions) that should be addressed by MSP policies and the associated plan of action?
- By what processes can planning and policy formulation be structured to make the participation of interested

parties effective in winning trust and collaboration among a diversity of stakeholders?
- What are the features of the planning process that are most critical to the effective implementation of a plan of action?
- How can the maritime spatial governance system be designed to encourage the incorporation on new knowledge and adaptation to changing circumstances?

The assembly of a governance baseline sheds light, and in some cases answers, these questions. Experience shows repeatedly that the processes of governance do not always produce the desired outcomes. Thus focus on both process and outcomes of MSP as a practice is essential and forms the core justification for documenting governance responses to ecosystem change. A governance baseline responds to the identification of such features of MSP practice as the need to build upon existing practices and tools, the need to address conceptual ambiguities and the need to recognize the spatial and temporal scales at which governance must operate (Calado et al. 2010).

What is ecosystem governance?

A governance baseline adopts a definition of governance (Juda 1999; Juda and Hennessey 2001; Olsen et al. 2006) that was originally developed to structure the governance and socio-economic elements of management programs for Large Maine Ecosystems (LMEs). This definition of governance encompasses the formal and informal arrangements, institutions, and mores that structure and influence:

- How resources or an ecosystem are utilized,
- How problems and opportunities are evaluated and analyzed,
- What behavior is deemed acceptable or forbidden, and
- What rules and sanctions are applied to affect how the goods and services within an ecosystem are distributed and used.

This definition views governments, civil society and markets as the principle sources of the power and influence that define the fundamental goals of a society and the rules and procedures by which they are achieved (Fig. 1). Governments hold the primary power and responsibility over the content of an MSP. However, to varying degrees markets and the desires and values of civil society influence the MSP process and its outcomes. Indeed, in some world regions the power of governments is overshadowed by the power of global markets that are the dominant drivers of both the process and the outcomes of governance. This realization lies at the root of the importance of stakeholder and public participation in MSP and the need to build
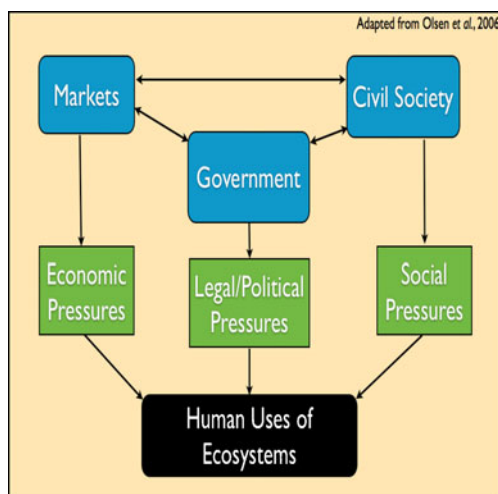
Fig. 1 The principle sources and mechanisms of governance. Adapted from Juda 1999 to Olsen et al. 2006

Fig. 2 Major elements of parts 1 and 2 of a governance baseline. From Olsen et al. 2009

constituencies within and outside government for an MSP process and the resulting policies and plan.

Central to these definitions is the recognition that governance is not only the prevue of governments. Indeed the relative influence of governments, markets and civil society vary considerably depending upon the governance traditions and the institutions by which influence and authority is exercised in a specific place. The mechanisms by which these three principles sources of governance express their power are different. Thus governments act through laws, regulations and policies and have the authority to forcibly impose their authority and punish offenders. But the power and influence of markets are also considerable and in some settings exceed those of government in shaping the trajectories of change in an ecosystem. Civil society acts through other mechanisms that affect markets through the choice of products and shape government through vote casting, lobbying and voicing ideas, priorities and values that may be in opposition to the actions of markets or government. This definition of governance calls attention to the full scope of the web of forces that shape how human society makes use of, and alter, ecosystems.

The elements of a governance baseline

A governance baseline has two parts (Olsen et al. 2009). As shown by Fig. 2, Part One focuses upon the past and current performance of the governance system as it has responded—or failed to respond—to changes in the condition of ecosystems in a specific locale. It places current pressures and threats in the context of long term ecosystem change. It assumes that a careful documentation and analysis of the existing governance system provides important insights into how best to design a forward looking management and governance initiative.
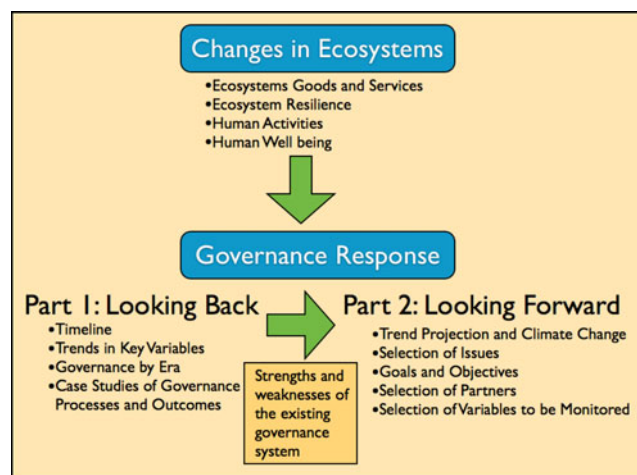
Part Two of a baseline outlines a strategic approach to the design of a new program and records the goals, objectives and strategies of a MSP program. These fundamental features are organized as the issues, long-term goals, near term objectives and the strategies of a MSP program. As described below, once these fundamentals are defined, sets of standardize graduated indicators are applied as the initial reference point for a MSP initiative at Time One. Subsequent assessments of progress and of how conditions and issues may have changed are made in reference to this baseline (at Time Two, Time Three etc.). This provides for an objective and explicit foundation for the practice of adaptive governance that responds to its experience and to the evolving conditions in the ecosystems of concern. The frequency of such assessments is dependent on many factors but annual or tri-annual assessments have proved effective in many settings.

A governance baseline relies upon two conceptual frameworks for the analysis of the processes and the outcomes of governance system responses to ecosystem change. Both frameworks are designed to provide a simplifying visual representation of how complex governance systems evolve over time. Many decades of experience in the practice of various forms of coastal and marine ecosystem governance have reinforced that it is critically important to utilize frameworks that can be readily understood by the diversity of stakeholders that must participate in an ecosystem governance initiative. These may span fisherfolk, business people, politicians at the local and national levels and those working within governmental institutions and NGOs. The first framework addresses the processes of governance and set forth in an adaptation of the learning cycle the sequence of actions that trace the development of an MSP initiative

from issue definition and goals setting, through preparation of a plan and program, to its formal adoption and on to its implementation. This policy cycle has been widely used in integrated coastal management (ICM) since it was put forward by GESAMP (1996) and has been further elaborated and adapted to organize the sequence of actions for a diversity of initiatives (Brewer 1974; deLeon 1999; Olsen et al. 2006) . It has recently been detailed by Ehler and Douvere (2009) as the "roadmap" for the practice of MSP. The policy cycle is useful (Fig. 3) because it can help identify the factors that enable or resist the successful transition from the assembly and formal approval of a MSP to the success, or lack of success, in its implementation.

The reality for many coastal and maritime management programs is that we often see only fragments of unconnected cycles. Particularly for integrating forms of management, a governance baseline will reveal a major gap between repeated efforts at issue analysis and planning (Steps 1–3) and implementation of a plan or program of action (Step 4). Table 1 lists the priority actions associated with each step in the cycle. Too often, subsequent initiatives do not build strategically on a careful assessment of what can be learned by earlier attempts to address the same or similar issues (Step 5) (Olsen 2003; UNEP/GPA 2006).

Since the processes of governance do not always produce the desired outcomes, careful attention to the associated sequence of essential outcomes is critical. The second conceptual framework used to examine MSP as governance therefore segregates the advance to the fundamental goals of increasingly sustainable forms of

Fig. 3 The policy cycle as presented by GESAMP (1996). Completion of the five steps is considered a full generation of an ecosystem governance program

ecosystem conditions and use into the sequence of outcomes shown in Fig. 4 (Olsen 2003; UNEP/GPA 2006). This second framework defines the outcomes of analysis and planning (steps 1–3 of the management cycle) as the articulation of (1) unambiguous goals that guide the governance process and make explicit its purpose and intent, (2) the assembly of the governmental commitment, the necessary authorities and financing to implement the MSP, (3) the presence of the institutional capacity to implement the plan, and (4) a sufficient base of informed support among those who will be affected by the implementation of the MSP to make enforcement of the procedures and rules of the MSP viable. Sets of graduated markers for assessing the presence and robustness of each of these 1st Order preconditions have been developed for linked watershed and coastal area management (UNEP/GPA 2006; Olsen et al. 2009) that can be adapted for application in baselines for MSP initiatives. Table 2 illustrates the indicators that can be selected to probe the degree to which constituencies are present that support an MSP initiative as one element of the 1st Order outcomes.

The 2nd Order addresses the changes in human behavior that are central to the practice of the ecosystem approach and therefore to the implementation of an MSP. These outcomes are subdivided in changes in the behavior of institutions, changes in the behavior of resource users and changes in investment. For example, the application of the policies, procedures and performance standards as set forth in a MSP to the permitting and installation of a windfarm would likely produce evidence of all three categories of behavioral change. Here too the graduated 2nd Order markers put forward by UNEP/GPA can be adapted to the specific needs of an MSP as illustrated by Table 3.

The 3rd Order defines the human and environmental conditions that the MSP is designed to conserve, restore or generate. Advances towards, and fulfilment of these goals are the ultimate basis for evaluating the success of an MSP program in achieving its state goals for the condition of the environment and the human activities that are the subject of MSP policies. The definition of the 3d Order goals of an MSP program or policy requires the careful selection of time bounded and quantitative indicators that can be monitored over the long term and that will be the basis for evaluating the degree to which the long term societal and environmental goals of an MSP are being achieved.

The Orders framework is proving to be useful because it recognizes that in complex systems conditions are constantly changing and the governance system can only control, or mitigate some of the forces at work. By segregating the outcomes of governance into a sequence of three Orders, this framework elucidates what combinations of actions and forces will be are most effective in contributing to desired outcomes.
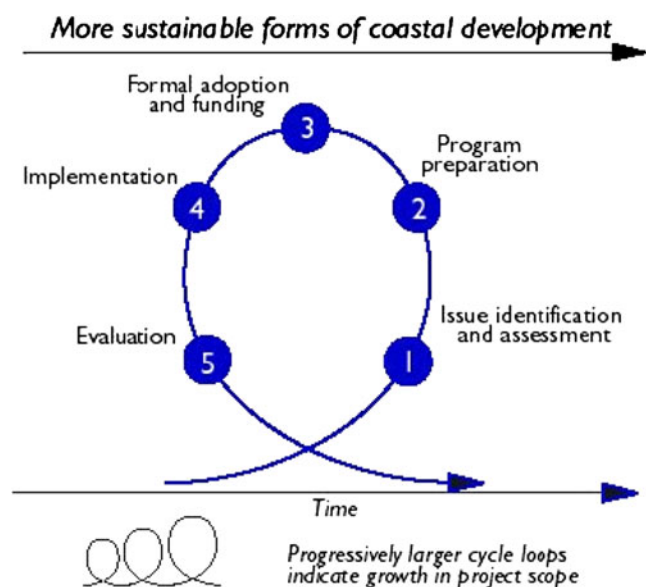
Table 1 The essential steps that trace the process of an MSP program by the policy cycle. Adapted from Olsen et al. 2009

| Step	Indicators 0 = not initiated 1 = underway 2 = completed	Progress
		0 1 2
Step 1: Issue identification and assessment	• Principal environmental, social and institutional issues and their implications assessed	
	• Major stakeholders and their interests identified	
	• Issues upon which the MSP initiative will focus its efforts are selected	
	• Goals of the MSP initiative defined	
	• Stakeholders actively involved in the assessment and goal setting process	
Step 2: Preparation of the plan	• Scientific research on selected management questions conducted	
	• Boundaries of the areas to be managed defined	
	• Baseline conditions documented	
	• Action plan and the institutional framework by which it will be implemented defined	
	• Institutional capacity for implementation developed	
	• Behavioral change strategies at pilot scales tested	
	• Stakeholders actively involved in planning and pilot project activities	
Step 3: Formal adoption and funding	• Policies/plan formally endorsed and authorities necessary for their implementation provided	
	• Funding required for program implementation obtained	
Step 4: Implementation	• Behaviors of key partners conforms to the plan	
	• Societal/ecosystem trends monitored and interpreted	
	• Investments in necessary physical infrastructure made	
	• Progress and attainment of goals documented	
	• Major stakeholder groups sustain participation	
	• Constituencies, funding and authorities sustained	
	• Program learning and adaptations documented	
Step 5: Self assessment and external evaluation	• Program outcomes documented	
	• Management issues reassessed	
	• Priorities and policies adjusted to reflect experience and changing social/environmental conditions	
	• External evaluations conducted at junctures in the program's evolution	
	• New issues or areas identified for inclusion in the program	

Part one of a governance baseline: The existing governance context

Part One of a governance baseline (Olsen et al. 2009) is the documentation and analysis of how the existing governance system has responded historically, and is currently reacting, to ecosystem change in the area of focus. This promotes an integration of the natural science elements of the planning process with the governance dimension.

Thus the first step in the preparation of a governance baseline is the documentation of long term trends in the condition of environment, the goods and services it generates, in the magnitude and impacts of important forms of human activity, and in variables that trace the associated conditions in the affected human society. Such a documentation of long term trends provides important insights into the issues that governance should address and a perspective on the long term future implications of trends in the

condition of the ecosystem and the human activities that are shaping it. Initial experience in applying these methods in a range of contexts is showing that it is useful to divide the past into a sequence of eras, each of which is characterized by prevailing ecosystem conditions, a set of issues (problems and opportunities) of concern to the governance system and patterns of behavior in the governance system. This long-term perspective on "how did we get to today's conditions?" places current issues and current priorities in perspective. Once the patterns of change for such important variables as maritime traffic, fish stocks, fishing activity, aggregate mining, bird populations and water quality the traditions and mechanisms of governance can be assessed by analyzing in greater detail how the governance system has responded—or failed to respond—to past and current expression of change in the ecosystem. This is best accomplished by the examination of case studies that apply the two conceptual frameworks to analyze both the processes and the outcomes of

Fig. 4 The orders of outcome (adapted from Olsen 2003)
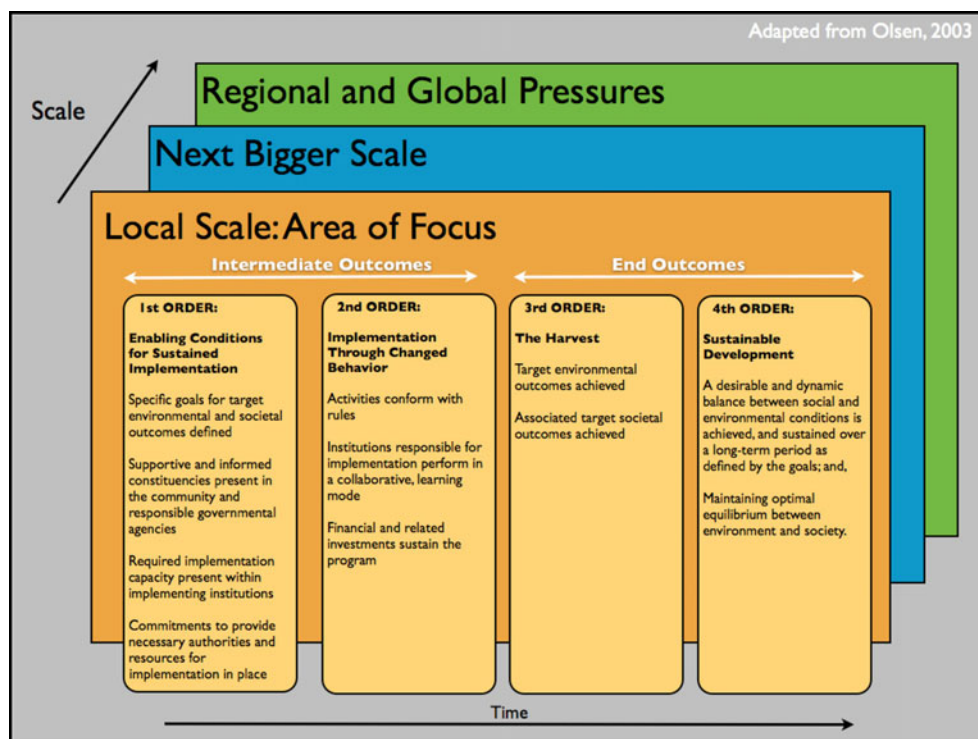
a response to a specific issue raised by change in an ecosystem. For example, the preparation of a governance baseline for the coast and marine waters off Western Region of Ghana (Olsen et al., 2010) examined the processes and the outcomes of a recent attempt to promote co-management of fisheries and a long-standing and controversial fuel subsidy program. Such case studies, when examined from the perspective of the policy cycle to the Orders of Outcomes

Table 2 Example of graduated indicators for 1st order outcomes: constituencies. From Olsen et al. 2009

Key questions	0	1	2	3	Rank time 1
Do the user groups who will be affected by the MSP's actions understand and support its goals, strategies and targets? Justification for the ranking:	many important user groups are unaware of the MSP's goals, strategies and targets	user groups are aware of MSP's goals and targets but the degree of support varies	with a few important exceptions, user groups understand and support the MSP	relevant user groups understand MSP goals and targets and actively support them	
Is there public support for the MSP?	there is little public awareness of the MSP	public awareness is incipient	public support is building up due to public education efforts, positive press coverage, endorsements from community leaders	surveys reveal that there is wide public support for the MSP and its goals and targets	
Justification for the ranking:					
Do the institutions that will assist in implementing the MSP and/or will be affected by its actions understand and support its agenda? Justification for the ranking:	there is little awareness of the MSP within institutions that will be important partners during implementation	while pertinent institutions are aware of the MSP their degree of support is unclear	with few exceptions pertinent institutions understand and support the MSP and have publicly endorsed it	MSP recognized as important and legitimate by institutions that will be involved in implementing plan of action	

Table 3 Example of graduated 2nd order indicators for changes in the behavior of institutions from Olsen et al. 2009

Key questions	0	1	2	3	Rank time 1
Are the implementing institutions collaborating effectively to implement the MSP? Justification for the ranking:	no action to date	broad issues identified by project team; some stakeholder involvement	specific issues identified with stakeholders; prioritization underway	issues have been identified and prioritized with stakeholders	
Are MSP policies, procedures and regulations being enforced? Justification for the ranking:	no goals defined	goals are being negotiated with stakeholders but have not been formalized	desired long-term goals address either societal or environmental outcomes	goals define both desired societal and environmental outcomes	
Are conflict mediation methods being effectively applied? Justification for the ranking:	no investments in conflict resolution	attempts to practice conflict resolution; the results are uneven	methods in place, usually applied effectively	conflict mediation skills are high and are consistently producing positive results	
Are private-public partnerships functional and generating desired results? Justification for the ranking:	no private-public partnerships	some partnerships exist, but not generating desired results	public and private sector partners work successfully, and often generate positive results	public-private relationships are robust and consistently generate positive results	
Is the MSP practicing adaptive management? Justification for the ranking:	adaptive management not practiced	minor attempts to practice adaptive management are being made, but with limited success	adaptive management has brought some significant adjustments to MSP	adaptive management fully institutionalized at all MSP levels	
Is support within the political structure at a national level being maintained? Justification for the ranking:	political support is weak or non-existent	political leaders recognize MSP; public statements in support are rare	political leaders occasionally speak favorably of MSP in general terms	political support is strong, well informed and frequently expressed	
Is an appropriate set of indicators being monitored to document progress toward the MSP's goals and targets? Justification for the ranking:	progress indicators have not been selected	few progress indicators identified, but monitoring is uneven	full suite of progress indicators have been selected, but monitoring is intermittent	full suite of social and environmental indicators have been selected and are being consistently monitored to assess progress	

is highly revealing of the current governance system as it plays out at the local, provincial and nations scales.

The application of the both process and outcomes analysis to case studies of past and current responses of governance in the MSP area provide answers to such questions as:

- To what degree are the preconditions for ecosystem-based management present; what are the barriers?
- What priorities and strategies does the governance baseline suggest when considering how to address current ecosystem management issues?
- What variables should be monitored as the basis for assessing progress and the adapting the program to further shifts in the condition and functioning of the ecosystem, changes in the governance system and the program's own learning?

Part One of a governance baseline therefore sets the stage for the strategic design of a new MSP initiative by identifying the strengths and weaknesses of the existing system and the reforms that are needed if desired future conditions are to be achieved.

Part two of a governance baselines; MSP as strategic design

Part Two of a governance baseline distils out the most fundamental features of an MSP design by providing standardized formats for the identification of the issues to be addressed by a generation of governance, the long term 3d Order goals (see Fig. 4) to which such an initiative is designed to contribute, the actions that will be taken to strength and sustain the 1st Order enabling conditions and the specific 2nd Order changes in behaviour that will signal the implementation of a plan of action. A particular emphasis is placed upon the degree to which the 1st Order enabling conditions are present. Experience in a wide diversity of settings suggests (Olsen 2003; UNEP/GPA 2006) that the transition to implementation can be antici-

pated only when all four of the following 1st Order conditions are present:

- A core group of well informed and supportive constituencies actively support the program,
- Sufficient initial capacity is present within the institutions responsible for the program to implement its policies and plan of action,
- Governmental commitment to the policies of a program has been expressed by the delegation of the necessary authorities and the allocation of the financial resources required for long-term program implementation, and
- Unambiguous goals that address both societal and the environmental conditions have been adopted against which the efforts of the program can be measured.

Part Two of a governance baselines culminates in the selection of the partners that will be play the most central role in achieving the program's objectives and the identification of the variables that will be used to monitor and assess progress.

The Intergovernmental Oceanographic Commission (IOC) recently released a handbook that describes an expanded and detailed step-by-step approach to marine spatial planning (Ehler and Douvere 2009) that expands upon the policy cycle as defined by GESAMP (1996) and describes in greater detail the planning process set forth in Part Two of a governance baseline. The IOC handbook details the actions associated with a ten step planning cycle that begins with the identification of needs and securing a mandate for an MSP process and culminates with adapting a future generation of planning to new knowledge and the experience gained in implementing an initial cycle of plan implementation. Neither the GESAMP version of the planning cycle nor the IOC version imply a cookbook approach to a complicated task. Such step-by-step guides are valuable in suggesting the sequence in which a great diversity of actions should be taken but in practice the actions associated with more than one step may unfold simultaneously. For example, a mandate for an MSP process is essential to Step 1 but the specific authorities required to implement the final version of the plan may only be negotiated and assigned as part of the formal adoption of the program that is the essence of Step 3 of the GESAMP cycle (Step 7 in the IOC version). Similarly goals may be defined in general terms in Step 1 but become adopted as specific time bounded and quantifiable targets at the time of formal adoption. There are, however, differences in emphasis in the Part Two of a baseline and the IOC planning process. The IOC guide focuses on the sequence of operational issues needed to develop an MSP (eg. mapping resources, identifying future demands for ocean space and practical actions for enforcement). A governance baseline stresses the importance of balancing the complex-

ity of the issues to be addressed against the capacity of the existing governance system. It places a major emphasis on setting 3d Order goals that address in specific terms the environmental and societal outcomes that define an advance to more sustainable forms of development and use. The baseline methodology is designed to focus strategies on building linkages between the three Orders.

A governance baseline as a foundation for adaptation and learning

Finally, a governance baseline provides a detailed and objective reference point against which the performance of a MSP program can be measured and evaluated. The formats in Part Two call for the identification of the issues that are to be addressed by an MSP initiative, an analysis of how power and responsibility are allocated among the various stakeholders within and without government, and the explicit statement of the strategies that are selected for achieving desired outcomes. Detailed sets of graduated indicators have been developed (GPA/UNEP 2006; Olsen et al. 2009) that provide an explicit reference point for a subsequent review of progress and an objective basis for discussion of how the context, the issues and the objectives may have shifted, and how the policies and procedures of an MSP program may need to be modified. For example the five step version of the governance cycle (Fig. 3) identifies what are believed to be the most essential actions associated with each phase of the planning, implementation and evaluation process. Table 1 traces how the degree to which each step and associated actions have been completed can be documented at the time of baseline preparation.

The policy cycle suggests that the United Kingdom has completed at least one generation of MSP as this applies to the siting and operation of windfarms for specific, relatively small areas. Norway has completed two first generation regional MSP plans for the Norwegian EEZs in the Barents sea (Olsen et al. 2007) and Norwegian sea. The Barents Sea plan will be revised in 2010 and then starts on a second generation of the governance cycle while the Norwegian sea plan will be a first-generation plan through 2014 when it is due for review. The more detailed expansion of the governance cycle set forth by the IOC could be readily organized into a format similar to the one presented in Table 1 to ease the visualization of progress and identify differences in the sequencing of actions and the emphasis placed on different element when comparing one MSP program to another.

Graduated markers have also been developed for each of the four essential outcomes associated with the 1st Order and the three categories of 2nd Order behaviour change that may be required to achieve full implementation of an MSP

program. For example, the hypothesis of the 1st Order is that a threshold of supportive constituencies, institutional capacity, governmental commitment and unambiguous goals are all required as essential preconditions for successful implementation of an MSP program. Table 2 illustrates graduated markers associated with three questions that probe the degree to which constituencies are present at the time of baseline preparation and at subsequent assessments.

It is important to underscore that the rating awarded to an indicator is less important than the justification that is given for each rating. As experience accumulates and an MSP program is periodically evaluated, such notes often demonstrate that the criteria or evidence used to make a judgement on an indicator will appear ill founded at a later date. Such realization spur the learning process when the differences in perceptions and new sources of evidence are selected as a program matures. Here again, the standardized formats call for documenting such reasoning and judgements in a manner that prevailing approaches to program evaluation seldom display.

As an MSP program transitions from planning into implementation the careful documentation of changes in the behaviour of the governmental institutions, the business and user groups that are active within the boundaries of the program and the NGOs that have an interest in the condition and use of the area becomes critically important. Here 2nd Order graduated markers provide methods for assessing the degree to which the objectives of the MSP program are being achieved. Table 3 offers seven graduated indicators for assessing the degree to which the behaviour of institutions is conforming to the outcomes that define the implementation of an MSP program. Such indicators can and should be tailored to the specific features and needs of individual programs.

However, the conceptual framework suggests strongly that the "big picture" of ecosystem governance and ecosystem change as suggested by Fig. 4 (the Orders) should not be lost when such adjustments are made.

When the frameworks and indicators discussed above are applied to an MSP program a detailed benchmark is created against which future change to both the condition and uses of a maritime area and the design and functioning of the governance system can be assessed. This provides an objective basis for the practice of adaptive governance that responds thoughtfully and deliberately to new issues, new knowledge and the experience gained from the practice of the ecosystem approach in an MSP. When governance baselines are assembled following common conceptual frameworks, use key terms in a consistent manner, apply the same or similar formats to those illustrated by Tables 1, 2 and 3, then the process of comparing across different applications of marine spatial planning and management is greatly enhanced. This encourages collective learning and the dissemination of good practices.

Central to the assembly of governance baselines is the recognition that the design and functioning of governance systems are shaped by the context of the issues and the traditions of planning, decision making in that place. A governance baseline identifies the salient characteristics of the existing governance system and suggests how the principles of the ecosystem approach should be adapted to those realities in a forward looking MSP.

Conclusions

We contend that MSP is an expression of ecosystem governance when it defines the environmental conditions that are to be restored or maintained in a specific geography, the goods and services to be reaped from the ecosystem to benefit human society, the intensities of human activity that will be permitted and the rules by which it's both environmental and societal goals are to be achieved. Governance baselines are designed to recognise that the success of a MSP effort should be judged by the outcomes of its implementation and the degree to which the long-term desired societal and environmental conditions within the targeted ecosystem are achieved. MSP covers a range of sectors and establishing the authority and the institutional capacity to plan and implement an MSP is a crucial topic for a governance baseline at the start of an MSP process. Without a clear mandate and the necessary authority and resources to both develop and implement an MSP an initiative will likely fail. A governance baseline sees as critically important the transition from issue analysis and planning to the effective implementation of a plan of action. It views planning as the means by which desired outcomes are achieved. Governance baselines therefore provide a tool and a method designed to make ecosystem governance an operational reality. The methods encourage a long-term perspective, an appreciation of the roles played by civil society, markets and government and a holistic, ecosystem-based, approach to coastal stewardship.

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