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Lejano

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# The design of environmental regimes: Social construction, contextuality, and improvisation

Raul P. Lejano

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**Abstract** While much of the literature on environmental regimes has focused on effectiveness, this article takes a new look at a lesser-studied topic, the evolution of regime design. Understanding how regimes differ in design, and how various factors and processes shape such design, is important if we are to more carefully craft these regimes. We should also pay close attention to the formative role of social construction and context. Focusing on transboundary marine programs, we see that their designs basically follow a common template, namely that of the UNEP (United Nations Environmental Programme) Regional Seas Programme. However, the action of context (i.e., local actors and political processes) can modify these designs away from the common template. The extent to which these programs begin to differentiate from each other may be an important sign of program maturity and responsiveness to context. In this article, we examine a set of transboundary marine programs to uncover what the important dimensions of differentiation are. Then, we focus on one specific program, the SSME (Sulu-Sulawesi Marine Ecoregion) and closely trace how its specific form and organization came about. The analysis is informed by a model of institutional coherence that portrays institutions as the product of multiple generative mechanisms (e.g., social construction, ecological fit, and others). While it is premature to make definite judgments about the relative merits of competing regime designs, the work provides us with a new mode of analysis that can provide helpful directions for institutional assessment.

**Keywords** Transboundary agreements · Environmental regimes

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R. P. Lejano (✉)  
Department of Planning, Policy, and Design, School of Social Ecology, University of California, SE-I, Room 218G, Irvine, CA 92697-7075, USA  
e-mail: rplejano@yahoo.com

## 1 Introduction

While the literature on environmental regimes has concentrated on the issue of effectiveness (e.g., Keohane, Haas, & Levy, 1993; Victor, Raustiala, & Skolnikoff, 1998; Young 1999, 2002, 2003), this article speaks to a lesser-studied aspect, the evolution of regime design. It is essential to focus on the latter since we need a deeper understanding of design elements (i.e., dimensions by which regimes differ from each other) and processes that affect this design (i.e., what causes specific designs to emerge). All this is needed if we are to better and more consciously craft these regimes.

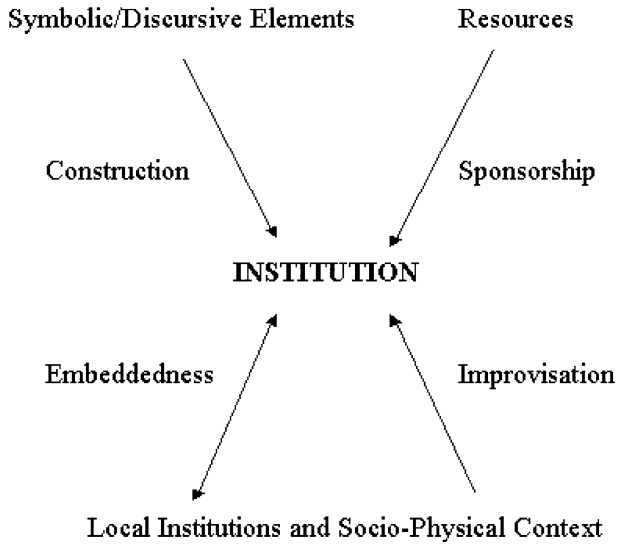
The literature on regimes, having emphasized the theme of effectiveness, has concentrated on seeking out universal features that good regimes ought to have (e.g., see Levy, 1996; Victor et al., 1998; Young, 2001). In this paper, we instead focus on elements that make each institution different, the notion being that the extent and manner by which individual programs grow into their own unique designs may spell the difference between a regime that is an active force for environmental change, or a shell of an institution. The following research questions are foremost:

- i. How and why do ostensibly similar transboundary programs differentiate?
- ii. What does such differentiation tell us in the way of lessons for regime design?

Transboundary marine programs are strongly influenced by a common template—that of the United Nations Environmental Programme (UNEP) Regional Seas model (beginning with the Barcelona Convention in 1976). This common origin, along with the overweening influence of the UNEP, creates a formal uniformity among these marine programs (Sand, 1988). This uniformity in process and structure is referred to in organizational theory as isomorphism (DiMaggio & Powell, 1991). We ask, however: what goes on in these institutions aside from mere adherence in form to the UNEP template? How do policy actors, in each case, define anew the reasons for and manner of collective action? Along what dimensions do marine programs differ, and how might these differences be significant? In asking these questions, we generate directions for inquiry into what makes a marine program function beyond mere compliance with the formal.

These institutions are social constructs, most immediately patterned after the Regional Seas model. However, if they were only so, then we would find isomorphism all throughout the field. There are other formative influences, however, including the differing effects that different sponsors will have on the program, as consistent with resource dependency theory (Pfeffer & Salancik, 1978), which may make programs differentiate away from the general template. Differentiation may also arise as policy actors utilize unique local resources and institutions in assembling the marine program—a process of improvisation. Moreover, the program may also be modified to better suit the cultural or political context—the notion of embedding (Granovetter, 1985), which corresponds to an ecological model of institutions (Hannan & Freeman, 1977). For these reasons, we should expect to find some dimensions along which marine programs differentiate. The diagram in Fig. 1 is a heuristic that serves to remind us of the manifold factors that may act in concert in the formation of the institution (Lejano, 2006).

A key aspect of marine programs, then, is the extent to which policy actors are able to transcend mere adoption of the formal (i.e., the UNEP Regional Seas



**Fig. 1** Depiction of institutional coherence

template) and inject into the institution unique agendas, local resources, and joint action. The main parts to this paper are:

- i. Comparing the design of six regional seas programs in order to uncover important dimensions of differentiation;
- ii. Focusing on one case study more closely and tracing how its particular design evolved and, in so doing, explain why its design differentiated itself from other regional seas programs;
- iii. Reflecting on how these insights into the manner and reason for differentiation provide lessons on designing programs so as to better fit local and regional conditions. We must admit, at the same time, that a focus away from the theme of regime effectiveness precludes us from making very strong comparisons of the relative merits of different regime “designs”.

## 2 Methodology

### 2.1 Comparative analysis

In the first part of the paper, we compare six different regional seas programs in order to uncover important dimensions along which these differ. To do this, we consulted a large number of archival records and documents, including program conventions and treaties, action plans, transboundary diagnostic analyses, project reports, and others. We supplemented this with information that we obtained through email from program officers. We also sought to discover whether these programs had important differences in practice—for this reason, we also obtained meeting minutes and transcripts for each of these programs.

The archival data were then systematically compared by contrasting similar documents in parallel (e.g., program agreements, action plans), in a method of pattern matching (Yin, 2003). We also allowed the most relevant thematic differences to emerge from the material through a type of grounded research approach (Glaser & Strauss, 1967). For example, when we found important and consistent differences in certain program elements, we highlighted these passages and, then, proceeded to categorize these themes. By comparing observations between the two researchers, we resolved the contrasting material into a number of categorical themes, as listed below (these categories will be further discussed in the analysis section).

In the above, number is simply how many states have entered into the regional seas agreement. Heterogeneity is indexed by the ratio of the standard deviation of the Gross Domestic Products (GDPs) across the group and the average GDP. Average per capita GDP is calculated as the total GDP of all states combined divided by the total combined population. For issue salience, we used content analysis (e.g., see Epstein & Segal, 2000 for similar analyses) of relevant documents (mainly, program treaties, action plans, and transboundary diagnostic analyses) to highlight the problem areas that are most frequently cited. We supplemented this with a cursory look at environmental statistics for each regional sea to verify that identified issues were indeed critical. The issues were generalized into the following categories: pollution (marine and land-based), species protection, habitat, fishing, and development (resource use and livelihood), and the most salient issues ranked for each program.

The theme of jointness emerged as an important feature of each regime. By this term, we simply mean the manner and concepts by which stakeholders understand and manifest their collective identity. The three dimensions are: *authority*, *autonomy*, and *organizational form*.

The dimension of *autonomy* is defined as the extent to which the regional institution can make decisions, policies, agreements, contracts, etc. on its own or stand on its own as a separate institution. We index each program along this dimension by seeing how many of the following elements are present:

- Secretariat
- Secretariat (with independent staff)
- Budget Provisions
- Multilateral Organization (degree of bureaucratization)
- Multilateral Organization (with independent staff)
- Ability to Contract
- Information System
- Policy-Setting (draft policies for states to consider separately)
- Independent Policy-Setting
- Formal Public Participation
- Subsidiarity (sub-state levels of governance)
- Formal Autonomy

The dimension of *authority* is defined as the extent to which the regional institution is able to take policy action that influences the functioning of the respective states. We then categorize the different types of policy actions of the institution, as follows:

- Formal Treaty/Convention
- Territorial Designation

- Capital Improvement
- Regulatory Policy
- Joint Planning
- Joint Research

Lastly, we consider collective identity as embodied in the *organizational form* of the institution itself, as follows:

- Coalitional: Forum for inter-state deliberation, but no new formal institution
- Entrepreneurial: Dependence on non-state, non-UNEP policy entrepreneur.
- Coordinative (UNEP Model): Conference of states with UNEP as Secretariat
- Coordinative (Independent): Revolves around conference of states, independent of UNEP
- Multi-Level: Hierarchical structure, encompassing different scales of governance

## 2.2 Case study analysis: the evolution of the SSME

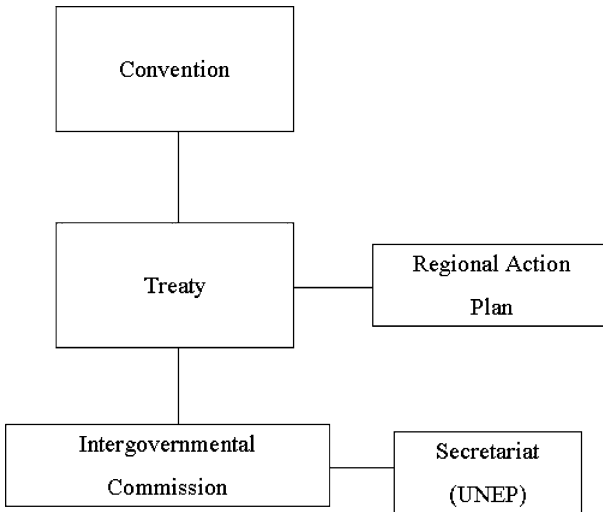
In the second part of the article, we focus on one of the regional seas programs, the SSME, more closely in order to understand how regime design evolves through the action of multiple stakeholders, political pressures, and local institutional processes. For this analysis, the primary research material consisted of interviews with primary stakeholders from each of the three countries. Each of the interviewees were involved closely with the negotiations leading up to the signing of the agreement. We ensured that at least three stakeholders from each state's contingent were included in the interviews. Twelve interviews were conducted, in all, mostly ranging from 0.5 to 1.5 h in length, all of these in English. Interviews were tape recorded and subsequently transcribed.

Much information was also obtained through direct participant-observer notes, especially as one of the co-authors attended the actual negotiation and subsequent signing of the agreement. Content analysis of these research artifacts proceeded as described above.

## 3 Analysis and discussion

### 3.1 The UNEP template

Figure 2 depicts the UNEP Regional Seas model (see Akiwumi & Melvasalo, 1998). The most visible elements are the founding treaty, creation of the intergovernmental body, and adoption of an action plan. The policy actors in this model are the signatory states. The intergovernmental body meets periodically and passes resolutions that are typically consensus recommendations that are subsequently ratified by individual legislatures prior to entry into force. The formation of a Secretariat is also typically adopted at the founding convention. The Secretariat may take the form of a new organization or, as a default, the UNEP office. Moreover, the content and language of the treaties and formal organization of the action plans all derive from the same model. We find that all of the regional seas agreements studied echo passages found in the very first UNDP-sponsored agreement, the Convention for the



**Fig. 2** The UNEP Regional Seas Model

Protection of the Mediterranean Sea Against Pollution (the Barcelona Convention). In most of the cases studied, large grant-funded projects (sponsored by institutions such as the European Union or World Bank) follow soon after ratification.

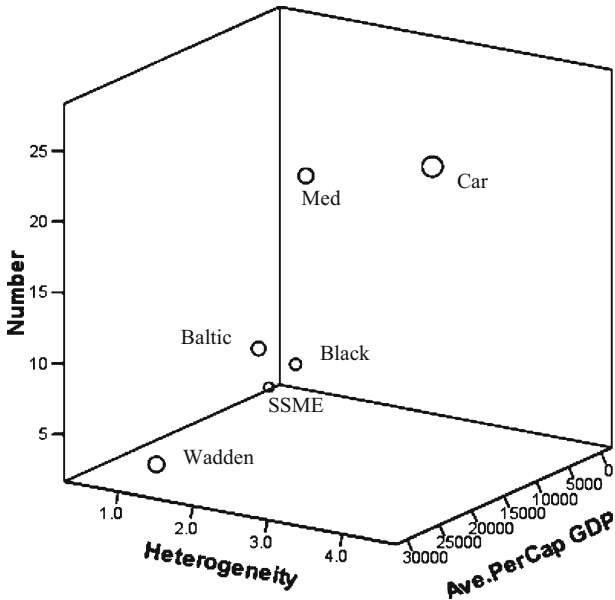
3.2 Analyzing differentiation: six transboundary marine institutions

*Differentiation: characteristics of the coalition*

We contrast six regional seas programs in order to discover the most essential dimensions of differentiation. The basic characteristics of each transnational coalition are shown in Table 1 and illustrated graphically in Fig. 3. As we can see, the size and heterogeneity of the coalition differs widely, ranging from the SSME program with only three participating states and a heterogeneity index of only 0.621 (i.e., the three states are quite similar in terms of GDP) to the Wider Caribbean with 26 states and a heterogeneity index of 4.37 (i.e., wide differences in GDP across the coalition). The range of values of the average regional per capita GDP figures is also significant, from a high of \$27,849 per capita for the Wadden Sea program to \$4,006 per capita

**Table 1** Characteristics of the transboundary coalition

	Program					
	Baltic	Black Sea	Mediterranean	Sulu-Sulawesi	Wadden Sea	Wider Caribbean
Number	9	6	21	3	3	26
Heterogeneity index	1.5	1.286	1.89	0.621	1.18	4.37
Average Per Capita GDP (\$/year)	15,710	7,512	12,919	4,006	27,849	22,031
Saliency	Pollution, Species	Pollution, Species	Pollution	Habitat, Species	Species, Pollution	Resources, Habitat



**Fig. 3** Characteristics of the transnational coalition

for the SSME. The salience of issues that concern the coalition also differs from program to program. For example, while the Mediterranean program focused, most strongly on pollution control, the SSME has its primary focus on species conservation. The Baltic Sea, characterized by shallow, brackish-water conditions and adjacency to highly industrialized areas, is particularly vulnerable to eutrophication and, so, it is not surprising that pollution control be the most salient issue (Gelpke, 1994). Somewhere in the middle of the group is the Baltic Sea program, with nine states, a heterogeneity index of 1.5, and a focus on both pollution control and protected species (especially harbor and gray seals). As we will discuss later in the paper, this may have some implications for regime design.

#### *Differentiation: jointness*

An important plane of differentiation concerns how collective identity is understood by stakeholders, and then realized in action. The link to effectiveness is direct, since, if the regional institution is to be a force for real change, then the collective needs to go beyond the formal and translate jointness into real actions and projects. We examine two aspects of jointness:

- i. Jointness in a performative sense: the evolution of activities that are done jointly by all signatory states, or if individually, occur only because of the transnational program.
- ii. Jointness in a constitutive sense: the construction and subsequent realization of a new regional identity.

Jointness in the performative sense is most distinctly realized in the Baltic Sea program—e.g., creating the Baltic Monitoring Programme (Gelpke, 1994). Though



all six programs involve the statement of collective goals and objectives, this takes on action-forcing dimensions in the Baltic where, for example, the intergovernmental agreement and subsequent conferences have not only called for harmonization but specified specific standards that are, in turn, recommended to each individual state. We see this reflected in action-forcing standards for point source control, marine pollution, and land-based nonpoint source pollution (Helcom, 2000). The Wadden Sea program is also beginning to exhibit some of these activities. Though the program stated common goals more than specific, enforceable standards, the program has developed uniform sets of criteria for issues like zone delineation (e.g., for eutrophication-vulnerable areas) and common practices for environmental impact assessment. To a lesser degree, the Caribbean Environmental Programme also has developed some common actionable standards—e.g., water quality criteria for domestic wastewater (UNEP, 1983).

Another joint action is the generation of new scientific collaboration and new institutions for cooperative research. The Baltic and Black Sea programs are most distinctive in this regard. In the Baltic, we find a significant effort made in creating a new data clearinghouse (the COMBINE database, which is managed by a new regional scientific research entity, MONAS, running a data center, ICES). With the Black Sea program, the scientific component is institutionalized in marine research centers located in the Ukraine and Romania, along with the initiation of a Central Meta Directory, essentially forming a regional scientific community.

The Mediterranean program (or Med Plan) also envisioned the harmonization of water quality and emission standards, though the type of pollution control program and level of implementation varies widely across the signatory countries (UNEP, 1975). The most visible sign of joint action has been the control of ocean dumping and construction of some wastewater treatment plants (Haas, 1990). To a limited extent, the Med Plan manifests jointness through collaborative and comprehensive planning—e.g., the so-called Blue Plan for the Mediterranean involved evaluating competing scenarios regarding development in the region. In fact, the Blue Plan is not just a visioning plan but an actual organizational entity. In contrast, the Caribbean and SSME programs are relatively new and, so, probably have not had enough time to evolve some of these distinguishing elements.

Jointness, in a constitutive sense, is most distinctively realized in the SSME in that, along with the new institution, a completely new regional entity was constructed. The area has two geographically distinct marine areas—the Sulu and Sulawesi Seas, but the transboundary cooperative resulted in a new unitary concept, symbolized by the name, Sulu-Sulawesi. To some extent, the Baltic Sea region was also an outcome of efforts at regionalism (e.g., see Engelen, 2004; Gelpke, 1994; Neumann, 1994) that reached a crescendo after the dissolution of the Soviet Union.

Jointness can be described more explicitly, as Tables 2 and 3 and Fig. 4 summarize the comparison of the six programs along three aspects of jointness (authority, autonomy, and organizational form).

The programs span a wide range, from the Baltic Sea program, which receives a high index on both autonomy and authority, to the SSME, which registers low indices for both. As shown in Table 2, the SSME and Wadden Sea programs differ in that the policy instruments used were a Memorandum of Understanding (MOU) and Joint Declaration, respectively, versus a more legally binding Treaty or Convention. There are legal implications to this—e.g., an MOU need not be ratified by the state legislatures. The low indices of autonomy and authority of the SSME may be, in

**Table 2** Authority index

	Program					
	Baltic	Black Sea	Mediterranean	Sulu-Sulawesi	Wadden Sea	Wider Caribbean
Treaty/Convention	●	●	●			●
Territory			●	●	●	
Capital Improvement Regulation	●					
Planning	●	●	●	●	●	●
Research	●	●	●		●	●
Index	0.67	0.50	0.67	0.33	0.50	0.50

Sources: HELCOM (2000), IRWSC (1997), Lääne (2001), Gelpke (1994), HELCOM (2001), UNEP (1975, 1983), BSEP (1996), SSME (2004)

Conventions/Treaties: See list of conventions/treaties in the Literature Cited Section

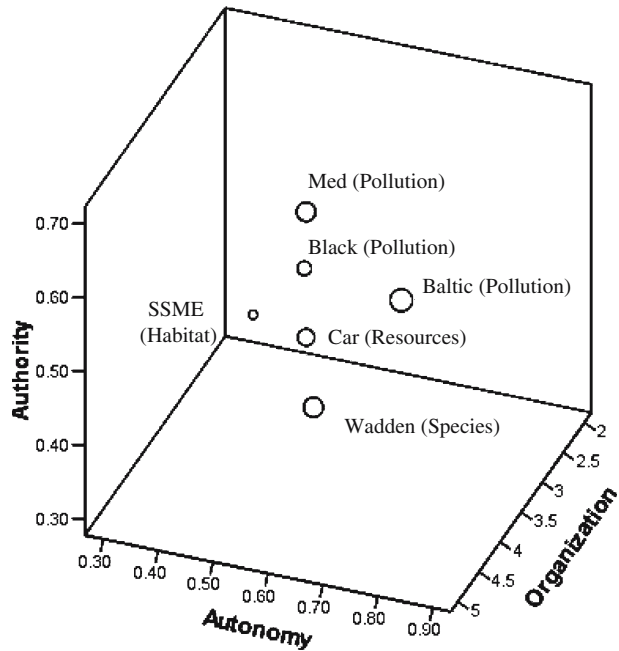
**Table 3** Autonomy index

	Program					
	Baltic	Black Sea	Mediterranean	Sulu-Sulawesi	Wadden Sea	Wider Caribbean
1. Secretariat	●		●	●	●	●
2. Secretariat (stand-alone)	●		●		●	●
3. Formal Budget Provisions	●		●		●	●
4. Multilateral Body	●	●	●	●	●	●
5. Multilateral Body (including non-state)	●	●		●		
6. Ability to Contract	●	●			●	
7. Information System	●	●	●		●	
8. Policymaking (advisory)	●	●	●	●	●	●
9. Policymaking (independent)	●					
10. Public Participation Provisions	●	●	●			●
11. Subsidiarity		●			●	●
12. Formal Autonomy INDEX	0.83	0.58	0.58	0.33	0.67	0.50

Sources: HELCOM (2000), Laane (2001), Gelpke (1994), HELCOM (2001), UNEP (1975, 1981, 1983), BSEP (1996), SSME (2004)

Conventions/Treaties: see list of conventions/treaties in the Literature Cited Section

**Fig. 4** Institutional characteristics



part, due to the relative youth of the SSME program. However, as we will discuss in the second part of the paper, it is also due to the formative influences of the ecological context in which the SSME evolves. Note the gray areas not reflected in Tables 2 and 3. For example, though we do not credit the Black Sea program as having a full-fledged Secretariat (see Sampson, 1999), it did have a Program Coordinating Unit administering a multi-million dollar GEF grant. Moreover, while we do not classify the Black Sea Program as a UNEP initiative, the latter organization played a strong, though informal, role in directing its evolution (Acherson, 1995; Hobson & Mee, 1998).

The last element of differentiation that stands out is that of organizational form, as summarized in Fig. 4. The Wadden Sea program is characterized by a multi-layered type of hierarchical organization. The Trilateral Working Group and Secretariat are new, stand-alone institutions that employ at least some professional staff dedicated solely to the new program. The Wadden Sea program also employs a notion of subsidiarity, and we see a nested institutional layer at the regional level (the Inter-regional Wadden Sea Conference) composed of stakeholders from counties, provinces, and lower levels of governance. Similarly the Baltic Sea program also displays a high degree of institutionalization. The SSME, on the other hand, lies in the other direction, where institutionalization is in a more primal stage (discussed below, in Sect. 3.3).

As suggested in Table 3, the Secretariat to the intergovernmental body is itself a site of differentiation. In some cases, there is no permanent Secretariat, and the UNEP acts as the regional coordinator (as with the Caribbean program and, at least in the beginning, the Mediterranean program). The most developed organizational form would be a stand-alone Secretariat, staffed by career professionals dedicated only to the organization. Examples of the latter are found in the Baltic and Wadden

Sea Secretariats. These two bodies also differ from others in terms of authority—as the Secretariat functions not only to maintain the agenda of the multilateral coalition, but also runs projects, conducts studies, and performs program assessment. On the other end of the spectrum is the SSME, which does not have an independently staffed and funded coordinating unit and, to date, relies on an NGO to take on the duties of a Secretariat.

### *Linkages to institutional design*

At this point, we can draw some lessons from the above, comparative analysis for institutional design. We should keep in mind, however, that “design” in this sense is something that evolves as an outcome of manifold institutional processes, not “design” as a deliberate formulation by a central agent. Because of this and our decision not to focus on regime effectiveness directly, we cannot make very strong propositions about the relative merits of different elements of regime design. However, our analysis still affords us some general insights, as described below.

*The size and heterogeneity of the transnational coalition can require stronger institutional structures.* One reasonable proposition is that the larger and more diverse the coalition is, the greater the need for structure, rules, and formal elements—i.e., institutionalization. This is complemented by the supposition (in the international relations literature) that programs with relatively large, hegemonic players will actually be a stronger, more stable institution (Keohane, 1984). This is certainly seen in the high degree of institutionalization of the Mediterranean Sea program (with 21 states) and only weakly so for the Caribbean. Moreover, we might suppose that, the higher the average per capita GDP across the coalition, the greater its capacity for institutionalization. This might explain why the Caribbean program, with its very low average per capita GDP, chose to turn to the UNEP as its foundation rather than create its own institution. It also helps explain why the Wadden Sea program has created a high degree of institutional complexity. All of these suppositions certainly ring true for the SSME, with its small number of participating states, homogenous mix, and low per capita GDP. These observations will be studied in more detail with regard to the SSME in the next section.

Moreover, we can suppose similar linkages to other elements of regime design, namely relative authority and autonomy. As consistent with insights from the field of international relations, weaker states may choose to join a coalition with a strong state only if the institution has strongly formal elements that protect their interests. In other words, more heterogeneous coalitions may require more formal institutionalization. This may help us understand why the Mediterranean program (with a high heterogeneity index) has a highly developed institutional design. On the other hand, in the case of the Caribbean (with an even higher heterogeneity index), the best option may have been to turn to the UNEP as its base and use the latter’s institutional mechanisms in lieu of a new regional system. Undoubtedly, some of these differences are partly temporal—the SSME, being much newer than all the others, has not had enough time to mature. However, time to maturity does not explain much concerning the older programs, as seen in the differences in institutional complexity between the Baltic and Mediterranean programs, both of which were conceived in the 1970s.

*Stronger institutional structures can lead to more active, project-oriented programs*

As mentioned above, of all the programs studied, the Baltic and Wadden regional seas programs have the greatest degree of institutionalization—as manifested in the independence and formal autonomy of the Secretariat, the degree of organizational complexity, subsidiarity, etc. At the same time, we also observed that these two programs are among the most visibly active, engaging in the most policy initiatives (e.g., wastewater treatment standards) and projects. In contrast, a weak institutional structure, e.g., an ad hoc or temporary Secretariat, may recede into a mere token existence. As discussed in Section C, this is a concern for the SSME, which displays lesser degrees of institutionalization.

*The considerable differentiation found among even formally similar programs suggests the powerful action of context*

The fact that, even among programs that all pursue the UNEP model, we found considerable diversity suggests that the influence of context (i.e., local policy actors, local resources, political dynamic) is considerable.

*Stakeholders have great latitude in designing regimes*

This research gives us a glimpse of how much latitude there exists for consciously designing regimes. A good example of how rich the options are for design is the Wadden Sea program, where the principle of subsidiarity has created a design wherein decisions are not simply made in the interface between the transboundary institution and the States, but in a more complex network of sub-state level interactions. We see this in the numerous agreements and projects worked out between states and provinces.

*Contextuality is itself an important variable*

In a sense, the degree to which the form and function of a regime is sensitive to elements of context is itself a strong determining factor. To some degree, this depends on the strength of influence of external, international institutions and norms over the regime, relative to more local actors. A simple example of this is seen in the differing degrees of influence of the UNDP over the various marine programs.

To fully understand the powerful action of context, we need to enter into a case study in some depth and see exactly how context acts on the institution to produce these profound changes. We do this in the next section.

### 3.3 Case study: how regime design evolves in the SSME program

In the previous section, we uncovered important elements of differentiation. Here, we analyze the actual process by which these elements differentiate. We do this in order to gain lessons into ways by which policy actors effect change, both beneficial and adverse, and how such processes might be used to strengthen these programs instead of weaken them. We closely trace the evolution of the SSME program and attempt to explain why certain aspects of the regime design evolved the way they did. The legal instrument used was a Memorandum of Understanding (why this is so will be discussed below) and was signed by Indonesia, Malaysia, and the Philippines as a keynote event at the Conference of Parties to the Convention on Biological Diversity (CBD COP7) held in Kuala Lumpur, Malaysia in February 2004. The

parties also simultaneously adopted the Ecoregion Conservation Plan (SSME, 2004), which was a product of twelve regional workshops, drawing as much as 460 participants in all, that led up to the signing.

Being the newest addition to the universe of regional seas agreements, the SSME exhibited some unique features from the start. By a number of accounts (e.g., WWF 1998), this region is the site of one the greatest collections of marine biodiversity in the world. There is a relative parity in economic strength among the three signatory countries—Indonesia, Malaysia, and the Philippines have GDPs of \$758B, \$207B, and \$391B, respectively. Thus, we would not expect cooperation to result from the influence of a hegemonic power (e.g., as in Gilpin, 1987; Keohane, 1984). We now examine, using Fig. 1 as a guide, how the different formative elements acted to shape the regime.

### *The effect of international norms*

International norms can be important factors in the social construction of the institution. To date, the SSME Program fits well within the mold of the UNEP template. Its founding agreement is modeled after Regional Seas agreements that preceded it, both in form and in the very language used. The most basic organizational structure also follows the norm set by earlier marine programs, i.e., a convention of national ministers, a secretariat assisting the main body, and primary representation from key ministry or department heads from each participating state. The primary international treaty that influenced the proceedings was the Convention on Biological Diversity (CBD), which is, in fact, mentioned in the MOU.

The larger, international sphere also encroaches upon the substance of the agreement. The prominence of habitat conservation in the SSME agreement is a reflection of these external influences (e.g., the CBD). At various points during the drafting of the founding agreement, the drafters brought up the question of what necessary elements of the treaty would international funding agencies need to see. This also emerged from analyzing the interview texts.

### *The effect of policy entrepreneurs and the social construction of the SSME*

The program is also shaped by the nature and actions of policy entrepreneurs, which figured centrally in all of the programs studied. The SSME is distinctive, however, in that it is the only one where the NGO assumes a formal role in the organizational structure of the transnational program. The Worldwide Fund for Nature (WWF), an international NGO, presently functions as the Secretariat of the preparatory committee (and, by extension, the Trinational Committee). There is a possibility that the WWF may be eventually replaced by a trinational secretariat in the future, but the most likely outcome is that WWF would still retain some formal place in the organizational structure.

As the secretariat for the process of drafting the agreement (the Preparatory Committee) and, by extension (based on this author's interpretation), the ad hoc secretariat for the Trinational Committee, WWF influences the process and design of the SSME agreement. To some extent, the form and function of the trinational program mirrors that of WWF's Southeast Asian operations. Each country's conservation activities, which are managed by the national environmental agency, are coordinated by the intergovernmental Trinational Committee. In parallel fashion,

the country WWF offices, which work closely with each of the national agencies, are steered by a central WWF-SSME Unit (based in Manila). In fact, the very first draft of the agreement was produced by the WWF-SSME Unit.

Moreover, the concept of the SSME is partly a construct engineered by the WWF. The idea of an ecoregion was proposed by WWF in the late 1990s as a manner of integrating conservation agendas across a region, as well as a logical response to the extensive physical range of some species, particularly pelagic fish (Miclait & Trono, 2002). The resulting portrayal of the regional ecosystem, which eventually became the SSME, is shown in Fig. 5, a map that grew out of the early workshops leading up to the SSME Agreement.

The use of the ecoregion concept was an ingenious one. The map depicts a “marine-state,” in which the land masses of the nation-states recede into the background, as the outlines of what might seem like a “republic of SSME” are brought to the foreground. The boundaries are not that of the nation-states, but of the ecoregion. Marine territorial boundaries are not shown, which is significant given the history of territorial disputes over islands in the SSME and China Sea. The construct led to the conception of an area to be known as the Sulu-Sulawesi, whereas previously, the Sulu and Sulawesi Seas were recognized as distinct bodies. In this



**Fig. 5** Mapping the SSME ecoregion

instance, the effect of the local actor (WWF) on regime design was most obvious in linking two separate bodies of water into one ecoregion. This is because the WWF chose to define boundaries not in terms of political demarcations or geographic features, but in ecological terms—interviews revealed that a large reason for a tri-national entity is the migratory nature of protected species (e.g., sea turtles).

The history of the SSME is consistent with descriptions of the construction process in the literature on regionalism, which posits some basic stages: (i) visioning/construction, (ii) institutionalization, and (iii) internalization (Neumann, 1994). The first of these stages occurred during the ecoregion planning workshops that were held in each of the three countries, an important part of which was creating a process in which an epistemic community might congeal (Miclait & Trono, 2002). By ‘epistemic community’ we mean a group of “networked professionals with recognized expertise and competence in a particular domain and an authoritative claim to policy-relevant knowledge within that domain or issue-area” (Haas, 1992).

The nature of what we might identify as the epistemic community in the SSME is shown in Table 4, which lists the groups, agencies, and other parties represented in the original visioning workshops leading up to the SSME convention. In this case,

**Table 4** Epistemic community and the SSME visioning workshops

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*Indonesia*

CRMPEast Kalimantan  
 Din as Perkanan Kab. Berau, Kaitim (NGO)  
 Indonesian Yayasan Kehati Biodiversity Foundation  
 Indonesia, Ministry of Marine Affairs and Fisheries.  
 Indonesian Bio diversity Foundation (NGO)  
 Indonesian Institute of Science-North Sulawesi  
 Indonesian Mangrove Foundation (NGO)  
 The Nature Conservancy  
 Universiti Sam Ratulangi, Fisheries and Marine Sciences  
 WWF Indonesia

*Malaysia*

Sabah Parks, Sea Turtle Research Unit Sabah Fisheries Department  
 Sustainable Environmental Management (NGO).  
 Universiti Malaysia Sabah; Borneo Marine Research-Institute  
 University College Terangganu, Forestry Science and Technology WWF Malaysia

*Philippines*

Ateneo de Davao University, Natural Science Research Laboratory  
 Center for Integrated Ecosystem Management and Biodiversity Conservation and Development  
 Conservation International Philippines, (NGO)  
 Mindanao State University, Center for Oceanographic Studies  
 Philippine Council for Aquatic and Marine Resource Research and Development  
 Philippines, Department of Agriculture, Bureau of Fisheries and Aquatic Resources  
 Philippines, Department of Environment and Natural Resources  
 Philippines, Department of Interior and Local Government  
 Philippines National Mapping and Resource Information Authority  
 Philippines, Presidential Commission for the Integrated Conservation and Development of Sulu-Celebes Seas  
 Silliman University, Department of Resource and Environmental Management  
 Angelo King Coastal Environmental Management Project University of San Carlos, Biology Department  
 University of the Philippines Mindanao  
 University of the Philippines: Los Baños, Institute of Biological Sciences  
 University of the Philippines, Marine Science Institute  
 WWF Philippines

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the epistemic community was composed of WWF, other NGOs, government agencies, and academics from all three countries, including a group of policy actors that had earlier forged an agreement around turtle habitat management in the Turtle Islands, which straddle the Malaysian-Philippine boundary. The group consisted largely of scientists from marine biology, which helps explain the dominance of habitat conservation as the most salient issue in the SSME negotiation. Absent from this group, for example, are persons from fields like pollution control, chemical engineering, or even fisheries, unlike other regional seas programs.

Integration of the three member states has partly occurred through the integration of WWF's three country offices under the WWF-SSME Unit's umbrella. In some sense, this is efficient in the sense that communication, joint decision-making, and consensus are aided by having the same organizational machinery (the WWF-SSME Unit) and culture behind the process in all three countries.

### *The effect of improvisation*

Improvisation is another important element that, for better or worse, shapes the SSME program (refer to Fig. 1). We see this in the use of elements of the local context to patch together the larger entity. In terms of organizational form, improvisation is seen in the creation of a trilateral committee that is more of a forum than a stand-alone institution and, moreover, having an NGO stand in as the ad hoc Secretariat. The reasons are plain, as one respondent put it: "In the initial negotiations, we thought that it [the trilateral committee] should really be a separate group with its own Secretariat... but that would entail more resources." Another said: "It won't be a body-like committee, to me... It will only be a coming together of principally the Chair of the three National Committees. And its functions will just be steering, broad policy direction, information-exchange updating—just basically a meeting of the three Chairs. And it won't probably have a budget by itself..." We see elements of improvisation, too, in the suggestions that some of the parties are making to fold the entire SSME institution inside the Marine Unit of the ASEAN (Association of Southeast Asian Nations) and, so, to make use of resources of the larger ASEAN. Lastly, improvisation is seen in the Ecoregion Conservation Plan or ECP, which is simply the three national conservation plans bound together into a single volume (SSME, 2004).

### *The effect of embeddedness and political context*

As a political action, the evolution of the SSME is wrought from the same political processes taking place in each of the member states. For example, there was equivocation on the part of two of the signatory states about having the agreement course through their respective legislative processes. There was the prospect of impasse in these legislatures or, at the very least, indefinite delay. Moreover, respondents recounted how Malaysia began lobbying for a quicker process, inasmuch as it was to be hosting the CBD COP7 in February 2004. Their hope was to showcase progress in conservation with the formal signing of the SSME agreement at the convention. The result of this push and pull was the decision to call the instrument a Memorandum of Understanding (MOU) instead of a treaty or convention. This meant that the MOU could be simply ratified (subsequent to the initial signing) by the executive branch in each country. With a treaty or convention, on the other

hand, the document would have had to be ratified by the legislative body of the state prior to entry into force (UN, 2001).

Both interview transcripts and notes from the MOU negotiations also reveal how the pall of budget constraints in at least two of the signatory states exerted a significant influence on the structure of the agreement and, presumably, will do so on the implementation from this point onwards. This led to the deletion of language in the agreement providing for a dedicated budget for the SSME program. Along with this was the choice not to create a new organization or new bureaucratic structure. As international agreements go, the strength of the language quickly degenerates with any contention whatsoever, and it was the same with the drafting of the SSME agreement. As one delegate suggested, the SSME program might be more of a forum, not a new institution. As of this writing, the SSME has no Secretariat, and the WWF has filled this void, by default. Another instance of this type of diluting effect was seen in the disagreement among drafters over certain issues in the agreement (such as intellectual property rights), which eventually caused some text to be deleted from the final document.

In the above discussion, we have studied how various formative elements act to shape the SSME program. The hope is that, knowing how the process of differentiation works, we can better steer its evolution towards stronger, more responsive institutions.

#### *Linkages to institutional design*

The preceding analysis of institution-formation processes in the SSME helps us understand how differentiation occurs and how context brings these changes about. This provides lessons on how such processes might be better managed to as to bring about constructive change, as discussed below.

*The issue of regime design needs to be explicitly built into the program* In our interviews with the SSME stakeholders, it became clear that at no point in the negotiations did ‘design’ of the new institution become an explicit focus of the discussions. These stakeholders did not realize the rich options they had vis-a-vis different program elements, nor did they consciously reflect on the impact their actions (e.g., eschewing the option of having a formal provision for an annual budget) might have on the long-term viability of the program.

*The action of context can introduce a shorter-term outlook into the program, which can require counteracting measures* We saw this in the SSME, as stakeholders began to weaken the institution due to short-term situations such as budgetary constraints, unwieldy legislative processes, etc. The lesson is that we need to balance these short-term concerns with a longer-term vision for the institution. Indeed, there needs to be initiatives toward a stronger institutional model for the SSME (e.g., creation of a strong, stand-alone Secretariat) despite present-day political agendas.

*The presence and action of policy entrepreneurs can be necessary, especially in the formative stages. The regime formation process can explicitly seek such entrepre-*

*neurs* The SSME case emphasizes the need for policy entrepreneurs to carry the initiative beyond any inertia on the part of the participating states. For a period of time, the idea of an SSME collaborative languished, partly because of inattention from and also because of friction between the Estrada and Mahathir regimes in the Philippines and Malaysia, respectively. During this time, it was left to the policy entrepreneur, WWF, to sustain the agenda even during this period. This suggests that policymakers might consciously search for policy entrepreneurs (even among non-state actors) during the early stages of regime formation.

*The action of context can increase the sustainability of the program* On the other hand, contextual forces can also act as to better the fit between the program and local and regional needs and conditions, thus increasing the likelihood of its sustainability. We see this in proposals to merge the SSME into the longer-lived, more stable structure of the ASEAN. Such tendencies need to be harnessed and channeled to constructive actions. We also note that the action of improvisation, e.g., the role of an NGO in furthering the institution, can lead to sustainability—in the case of the SSME, we observe that their continued vigilance in sponsoring the regional initiative allowed the SSME idea to outlive changes in regimes in all three countries (e.g., overthrow of the Estrada regime in the Philippines).

*The program, to be sustainable, needs an ongoing process of visioning and definition, which need to be built into the design of the institution* The act of visioning is a process that needs to continue throughout the life of the program. This entails considering the long-term needs of the region and how the program might transcend transient politics. In the case of the SSME, we observe that visioning, which was a great part of planning/mapping workshops in the early years of the initiative, essentially ceased upon signing of the MOU. The active construction of joint identities and visionary goals, which had been key in creating the SSME concept in the first place, needs to be renewed and channeled into ways to strengthen the institution. Moreover, these processes need to be built into the design of the regime.

These insights echo some findings in the literature on regime formation, which point to the crucial role that policy entrepreneurs play in the evolution of the regime (e.g., Andresen & Agrawala, 2002; Engelen, 2004; Stokke, 2001; Young, 1991, 1999). The specific role played by epistemic communities in knowledge construction has also been discussed in the literature (e.g., Dimitrov, 2003). Some also point to the need for specific institutional mechanisms for coalition formation and other aspects of regime design (e.g., Ecchia & Mariotti, 1997).

#### **4 Conclusion: summary findings and lessons learned**

In this paper, we developed a new analytic that can be used to more deeply study regime design. Through a comparative analysis of six transboundary marine programs, we uncovered several important dimensions along which these formally similar institutions differentiate. We then utilized a case study, the SSME program, to study how differentiation occurs through the action of elements of context.

Through this type of analysis, we gain insight into what elements of institutionalization are subject to design (see Schneider & Ingram, 1996). These are the ‘design variables’ that policy actors can deliberately influence so as to strengthen a program. Moreover, we discover how formative agents (e.g., norms, entrepreneurs, and political context) act on these variables and move them along certain directions. This is important because it provides us insights into how we can deliberately influence the evolution of a regime, again to create stronger, more sustainable programs.

In the above discussion, we drew some lessons for regime design from these observations. We end the article with a few, final lessons that emerge from this analysis and encompass the finer points discussed earlier.

1. Important lessons for regime design can be discovered by studying how different programs, even those patterned after the same mold, differentiate. First of all, this shows us how much latitude stakeholders have in designing the institution. Secondly, it suggests what ‘design variables’ can be subject to conscious design.
2. Within each of the design variables we uncovered, we see that it is possible to steer these elements so as to strengthen the institution or, alternatively, to weaken it. This means that policy actors need to be more aware of the effect of changes in each of these design variables on the ultimate viability of the institution (e.g., the longer-term effect of not creating a formal, stand-alone Secretariat).
3. We found that the action of elements of context on the form and function of the institution is considerable. This means that attention must be paid not only to the social construction of a program according to overall, international norms, but also the regional and local processes that further define and reinvent it. This means that policy actors need to deliberately influence these local and regional processes so as to steer the program towards a more sustainable, effective design. In the case of the SSME, the need for the transboundary program to outlast the exigencies of local political turbulence suggests measures to embed the program in a more stable framework. The use of an NGO to carry the agenda through the formative years is one option, as is the more permanent measure of embedding the program within the more stable structure of the ASEAN.
4. Most importantly, the research suggests that the theme of regime design needs to be explicitly built into the program. The absence of this, in the SSME case, has allowed stakeholders to take actions that, unwittingly, contribute to a weakening of the transboundary institution. Stakeholders need to consciously deliberate the rich set of options they have for fitting the program to the needs and challenges of their context.

In a modest way, this research lays some conceptual foundation for further research along these lines, which is to more deeply understand the nature and process of regime design.

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