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**East-West Environment and Policy Institute**

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**Research Report No. 10**

**Environmental Management  
in the South China Sea:  
Legal and Institutional Developments**

**by Douglas M. Johnston**



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**East-West Center  
Honolulu, Hawaii**

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William H. Matthews, Director  
East-West Environment and Policy Institute  
East-West Center  
1777 East-West Road  
Honolulu, Hawaii 96848

# **Environmental Management in the South China Sea: Legal and Institutional Developments**

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**Douglas M. Johnston**

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DOUGLAS M. JOHNSTON is a professor of law at Dalhousie University, Halifax, Nova Scotia, Canada. He was a research fellow at the East-West Environment and Policy Institute from January through June 1980.

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## FOREWORD

Changing national perceptions of the ocean are resulting in the unilateral extension of national claims to ownership of resources in the seabed and the watercolumn up to 200 nmi from national baselines. Nevertheless, many marine resources such as fish, oil, and environmental quality are transnational in distribution; the ocean, a continuous fluid system, transmits environmental pollutants and their impacts; and maritime activities such as scientific research, fishing, oil and gas exploration, and transportation often transcend the new national marine jurisdictional boundaries. Management policies for these national zones of extended jurisdiction may be developed and implemented with insufficient scientific and technical understanding of the transnational character of the ocean environment. Such policies may thus produce an increase in international tensions, misunderstandings, and conflicts concerning marine activities, resources, and environmental quality.

These issues form the conceptual framework for the EWEAPI Program Marine Environment and Extended Maritime Jurisdictions: Transnational Environment and Resource Management in Southeast Asian Seas. The goals of the project are to provide an independent, informal forum for the specific identification and exchange of views on evolving East-West ocean management issues and to undertake subsequent research designed to provide a knowledge base to aid in the international understanding of these issues.

In a semienclosed sea like the South China Sea, entirely encompassed by extended jurisdictional claims, some aspects of marine environmental management must be approached on an integrated, or at least a coordinated regional basis. Scientific, legal, and policy approaches to regional environmental protection have been formulated by States bordering other semienclosed seas such as the Baltic, the North Sea, and the Mediterranean.

The South China Sea region, however, differs from these other regions in its political, economic, and natural environmental characteristics. The sea is surrounded by some ten mostly small, physically adjacent national entities—two are archipelagos, two more are water-separated States and others in part comprise peninsulas. Disputed claims to islands and their attendant jurisdictional zones encompass most of the South China Sea. All the nations are developing economies with little available financial resources or inclination towards environmental protection if it means retardation of development. The entire region is tropical monsoonal with tropical organisms and ecosystems; much of the sea is underlain by a shallow continental shelf over which surface currents reverse direction twice each year, limiting their cleansing action.

Given these unique circumstances, it was considered useful to critically examine the approaches to regional environmental management used in other

regions and to suggest how these approaches might be adapted to the natural economic and political circumstances pertaining in the South China Sea. The Project was fortunate to attract Douglas Johnston, Professor of Law, School of Law, Dalhousie University, to undertake this examination.

Dr. Mark J. Valencia  
Program Coordinator

## PREFACE

This monograph begins by presenting a global context for the description and evaluation of Southeast Asian efforts to establish cooperative arrangements for the environmental management of the South China Sea. Special emphasis is given to the evolution of the Action Plan for the Protection and Development of the Marine Environment and Coastal Areas of the East Asian Region, and to the role of the five ASEAN countries in that undertaking. The legislative developments directed to these ends are identified; that is, in the areas of conservation of marine resources, prevention and control of marine pollution, and coastal zone management. Finally, a commentary is offered on the role of regional environmental arrangements in the South China Sea region.

Since I had no opportunity to conduct field research in the region for this study, I had to rely heavily on the documentation available. I am, therefore, especially indebted to those who assisted me in securing access to the information base. My first debt is to Dr. Mark J. Valencia, coordinator of the Marine Environment and Extended Maritime Jurisdictions Project, for his continuing support and encouragement. I am also grateful for the cooperation of officials in the UNEP Regional Seas Programme Activity Centre in Geneva and in the Bangkok office of the Economic and Social Commission for Asia and the Pacific. Not last, I wish to express my appreciation of the valuable contributions made by a battery of typists engaged in the preparation of this monograph, both at EAPI and at Dalhousie University's Faculty of Law. The last acknowledgment is of my indebtedness to Norma Gorst for her careful editing of this lengthy and fairly complicated manuscript.

Douglas M. Johnston

# Environmental Management in the South China Sea: Legal and Institutional Developments

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## ABSTRACT

*The problems of environmental management within the South China Sea region are complex. A semienclosed sea, the area consists of twelve island and coastal territories of varying legal and political status. Physical variations in the ocean environment complicates the task of setting priorities. An Action Plan for the region has evolved recently under the auspices of the Regional Seas Programme of the U.N. Environment Programme (UNEP) providing a framework for cooperative management of the marine region. These developments reflect a world-wide trend toward regionalism through regional agreements and regional organizations, an outgrowth of the U.N. Conference on the Human Environment held at Stockholm in 1972. The problems related to the protection of the marine environment in the South China Sea region fall into three overlapping categories: (1) the conservation of marine species; (2) the prevention and control of marine pollution; and (3) coastal zone management. National response to the first two categories in the South China Sea is outlined. The author documents in detail the origins, problems, and successes of regional marine environmental management and suggests future directions for the regional approach.*

## THE SOUTH CHINA SEA: PROBLEMS AND PRIORITIES OF ENVIRONMENTAL MANAGEMENT

### The Physical Setting

The South China Sea generally is defined as extending from a line along the 3° S parallel between Kalimantan (Indonesian Borneo) and Sumatra northeast to a line drawn from the northern tip of Taiwan to the adjacent coast of

the province of Fujian (Fukien) in China.<sup>1</sup> On the west side it is bordered by the Indo-Chinese and Malay peninsulas, the Gulf of Thailand, and the Malacca Strait, and on the east side by the Philippine Archipelago. The Java, Flores, Banda, Ceram, Molluca, Celebes, and Sulu seas, which lie to the south and southeast, normally are excluded from the definition of the South China Sea, especially in a context where the region is of potential interest as a separate spatial unit for environmental management.

As defined above, the South China Sea is a semienclosed area 3.5 million km<sup>2</sup> in extent, the circumference of which is 90 percent land.<sup>2</sup> Approximately half of the land perimeter in the eastern and southern sectors consists of islands that make up, or are part of, the island states of Indonesia, Malaysia (Eastern), the Philippines, Singapore, Taiwan, and the colony of Brunei (United Kingdom). The Asian continental landmass contributes to the other half of the perimeter of the South China Sea: the coast of China, embracing the southern coastal provinces of the People's Republic,<sup>3</sup> the colonies of Hong Kong (UK) and Macao (Portugal), and the coastal states of the Indo-Chinese and Malay peninsulas, consisting of Vietnam, Kampuchea, Thailand, and Malaysia (Western). The region consists, then, of twelve island and coastal territories of varying legal and political status. Moreover, Laos also should be regarded as belonging to the South China Sea region, especially in light of the provisions of the Third United Nations Conference on the Law of the Sea (UNCLOS III) applying to landlocked states.<sup>4</sup>

Bathymetrically, just over half of the South China Sea consists of a deep basin (the China Sea Basin) in the northeastern sector of the region. Averaging 4300 m in depth over a central abyssal plain, this basin has a maximum depth of 5016 m off Palawan (north of Indonesian Borneo). Within these deep waters lie submerged banks (eg, Macclesfield or Chungsha) and island groups (eg, the Paracels, or Hsisha, and the Dangerous Ground, including the Spratly or Nansha islands). Many of these islands are the subject of conflicting territorial claims, which complicate the task of developing a cooperative, fully regional approach to environmental management of the South China Sea.<sup>5</sup> Moreover, approaches to the control of mineral resources in the shallower waters over the continental shelves of the region (the Sunda Shelf) conflict.<sup>6</sup> These imperil the prospects of cooperative action among states with opposite or adjacent coasts.<sup>7</sup>

Other physical features of the region are even more relevant to the problems of protection and conservation of the ocean environment, that is, to the conservation of marine species and the prevention and control of marine pollution. The pattern of surface currents, for example, directly influences the circulation and disposal of pollutants. These currents vary with the two phases of the monsoonal climate, which yearly characterize the region. Between October and April a dry monsoon with northeasterly winds dominates, whereas a wet monsoon with winds from the southwest occurs from May to September.

During the southwest monsoon, northeasterly currents . . . dominate the surface flow. However, a weaker southwesterly return flow develops in the central eastern portion off Borneo, producing an anti-cyclonic circulation pattern. . . . During both monsoons, smaller amounts of water flow into the South China Sea through the Philippines from the Pacific and out to the Indian Ocean through the Malacca Straits. . . . Since the surface flow reverses direction twice each year and there is a counter current producing a circulatory gyre even at the peak of each monsoon, it is possible that flushing rates of surface layer pollutants deposited in the South China Sea are quite low.<sup>8</sup>

The circulatory system poses special pollution control difficulties in certain localities, such as the Malacca Strait,<sup>9</sup> the Gulf of Thailand,<sup>10</sup> and the archipelagic waters of Indonesia and the Philippines.<sup>11</sup>

The conservation of marine species, on the other hand, depends on an understanding of the region's ecology. For most tropical marine ecosystems the rate of environmental degeneration caused by human impacts tends to be greater than the rate of natural recovery or readjustment.<sup>12</sup> Compared with the temperate ecosystems of higher latitudes, the biological system of the South China Sea, like most tropical marine ecosystems, consists of a large number of species, each characterized by relatively few individuals with relatively short life cycles. The productivity of fish, crustaceans, and mollusks is low in the deep waters of the China Sea Basin but relatively high in shelf areas, such as the Gulf of Thailand, along the east coast of the Malay Peninsula, and between Sumatra and Borneo. Vertical mixing over the shelf, as well as river discharges and upwellings, contributes to the nutrient enrichment of the surface layers in the South China Sea region. Note that upwellings vary with the climatic phase: during the southwest monsoon upwellings occur along the edge of the shelf southeast of Vietnam, and during the northeast monsoon they occur, locally and temporarily, along the coast of China near Hong Kong and off the coast of Sarawak.

Until recently, tropical marine areas were considered low in productivity, but modern research has proved this generally false. Studies of the South China Sea in the early 1970s have produced estimates of potential yield that considerably exceed most expectations of a decade ago. One study estimates that pelagic catches in the region might be doubled over the 1970 figure of 1,989,000 metric tons (MT).<sup>13-15</sup> The projected increases in pelagic catches apply mainly to the Sunda Shelf region and to the central basin of the South China Sea, with only modest increases projected for the northwestern sector.<sup>16</sup> Another study<sup>17</sup> projects a possible increase of almost 1 million MT in the case of demersal species,<sup>18</sup> based on the 1970 catch of 2,509,900 MT.<sup>19</sup> Although caution is needed in estimating fishery productivity,<sup>20</sup> it is certainly realistic to anticipate increases in production from the South China Sea as high as 3 mil-

lion MT or more.<sup>21</sup> Much of the increase would be from the Sunda Shelf area, caught under the extended fishery jurisdiction of three states: Malaysia, Indonesia, and Vietnam. The South China Sea region is also the habitat of an extraordinary range of marine species. Few marine regions are of equal interest and importance from an ecological perspective. Hundreds of species are indigenous only to the South China Sea, and in recent years the survival of many of these has been imperilled as a direct result of human activities. The case for special protective measures is exceptionally strong in these and adjacent waters of Southeast Asia. Particular concern has been expressed for endangered marine species such as sea turtles, crocodiles, dugong, whales, and dolphins, as well as a number of marine birds and invertebrates.<sup>22</sup>

The entire area of the South China Sea now falls under coastal state jurisdiction. Almost all nations in the region have exercised their right to an exclusive economic zone of up to 200 nautical miles (nmi).<sup>23</sup> Accordingly, the environmental management of the marine region might be regarded, in part, as an opportunity to develop national coastal zone management through regional cooperation. To that extent, the coastal characteristics of the South China Sea are as important as the maritime ones.

The coastal morphology of the South China Sea region features a number of major rivers, such as the Si (China), Red and Mekong (Vietnam), Mae Klong and Chao Phraya (Thailand), and Kapuas (Indonesia), which discharge into the South China Sea (including the Gulf of Thailand), often in muddy delta areas with nutrient-rich, turbid waters. These ecologically rich areas are in special need of protection, especially in Monsoon Asian countries, where most of the protein derives from fish of the oceans, rivers, and paddy fields. Other features of the region requiring special attention under national coastal zone management are: the mangrove swamps, which are common to most coastal areas of Southeast Asia;<sup>24</sup> the many coral reefs, which are of enormous ecological importance;<sup>25</sup> and the relatively few sandy beaches, which are important for recreation and tourist development.<sup>26</sup>

## Human Impacts on the Marine Environment

Even excluding the southern provinces of China and the colonies of Hong Kong and Macao, the littoral territories of the South China Sea have a combined population of almost 250 million.<sup>27</sup> Java, with more than 80 million people, is the most densely populated area in the region.<sup>28</sup> Although too gross to be used as a measure of environmental impact, these figures serve to reflect the scale of population pressures and the magnitude of the problem of controlling the land-based sources of pollution, which threaten this semienclosed sea. If one thinks specifically of the pollutants discharged by major rivers, much of

the 30 million population of Burma might be added, since a certain proportion of the pollutants borne seaward by the great Irrawaddy River are presumed to circulate through the Straits of Malacca and Singapore into the South China Sea. Similarly, the Yangtze and Yellow rivers of North China and other major rivers outside the region contribute indirectly to the total human impact on the South China Sea. Given the enormous populations to the north, the indirect impact of these extraregional rivers is likely to be considerable.<sup>29</sup>

Human impact on an ocean environment also is reflected in the volume of shipping in or passing through the region. Whether measured by tonnage of vessels or tonnage of cargoes, the Malacca Strait area is the second busiest shipping route in the world—second only to the English Channel.<sup>30</sup> Most of the cargo carried is petroleum.<sup>31</sup> The largest of the supertankers are now diverted from this congested narrow strait to the much wider Lombok Strait off the coast of Bali,<sup>32</sup> and various efforts are being made to develop a regional regulatory system for the Malacca area,<sup>33</sup> but meanwhile the total volume of energy materials transported through the region is likely to continue increasing.<sup>34</sup>

The threat of environmental harm to the South China Sea is inherent also in the development of offshore petroleum,<sup>35</sup> in other seabed mining activities for commercial metals such as tin, arsenic, and lead, and in existing dredging activities in coastal areas.<sup>36</sup>

Despite the legitimacy of all these concerns, one need not exaggerate the risks of environmental degradation in the South China Sea. Land-based pollution, for example, is more closely associated with congested human settlement than with total population; only Java can be characterized as a severely overpopulated area in the region.<sup>37</sup> Indeed, many islands and coastal areas of the South China Sea are uninhabited, or at least devoid of congested communities. Despite the high volume of vessel traffic in the Malacca Strait, shipping casualties there have not yet reached crisis proportions.<sup>38</sup> Offshore oil production around the world has caused only a few catastrophic spillages in the last two decades.<sup>39</sup> The main challenge, in short, is to organize research and analysis designed to provide accurate assessments of the environmental dangers in the South China Sea, and thus to facilitate evaluation of the need for sensible precautions and effective remedies.

### **Policy Conflicts and Priorities**

Yet, it is evident that the problems of environmental management are as much a matter of economics and politics as of science. Each of the littoral territories of the South China Sea is bound to respond to the environmental problems of the sea they share within larger contexts, such as that of national de-

velopment, ocean use and management, or, more specifically, coastal zone management. Some of the priorities already established are apparent in the national responses described later in this report, but first, at the general level, it is worth noting the apparent or potential environmental conflicts that coastal and marine resource planning normally should attempt to avoid.

Table 1 identifies some of the more common uses of the coastal zones of Southeast Asia and suggests the degree of compatibility or incompatibility that might be expected to exist between them in normal circumstances.<sup>40</sup> In the absence of special countervailing considerations, those responsible for national development, ocean use and management, or coastal zone management, in principle, should attempt to plan coastal and marine resource development in such a way as to *maximize* combinations of uses with ratings 4 and 3 and *minimize* combinations with ratings 1 and 2. Since many countries may wish sooner or later to resort to most of these uses in their coastal zone and exclusive economic zone, they may be obliged to develop a policy of national "sea use planning" based on a zoning system for coastal and offshore areas.<sup>41</sup> Within such a zoning system each designated area could be set aside for specific priority purposes which are relatively compatible with one another. Conversely, a 3 rating on this matrix presents an apparent case for monitoring; a 2 rating suggests that the uses compared should be subject to regulation; and a 1 rating seems to justify strict regulation or outright prohibition.<sup>42</sup>

With a view to promoting the protection and conservation of the natural environment, a World Conservation Strategy recently has been recommended by a number of international agencies.<sup>43</sup> Identified in this document are several priority requirements, which are specifically applicable to the coastal and marine environment. These requirements might be addressed to those responsible for planning coastal and ocean resource development in the South China Sea region.<sup>44</sup> For example, for the maintenance of essential ecological processes and life-support systems, priority is given to the need to ensure that "the principal goal for estuaries, mangrove swamps and other coastal wetlands and shallows critical for fisheries is the maintenance of the processes on which the fisheries depend" and to the need to "control the discharge of pollutants."<sup>45</sup> To facilitate preservation of genetic diversity, a number of objectives are emphasized: to "prevent the extinction of species"; to "ensure that on-site preservation programmes protect . . . the wild relatives of economically valuable and other useful plants and animals and their habitats, the habitats of threatened and unique species, unique ecosystems, and representative samples of ecosystem types"; to "determine the size, distribution and management of protected areas on the basis of the needs of the ecosystems and the plant and animal communities they are intended to protect"; and to "coordinate national protected area programmes with international ones."<sup>46</sup>

To contribute to the sustainable utilization of species and ecosystems, priority is assigned to a range of related objectives: to "determine the productive

capacities of exploited species and ecosystems and ensure that utilization does not exceed those capacities"; to "adopt conservative management objectives for the utilization of species and ecosystems"; to "ensure that access to a resource does not exceed the resource's capacity to sustain exploitation"; to "reduce excessive yields to sustainable levels"; to "reduce incidental take as much as possible"; to "equip subsistence communities to utilize resources sustainably"; and to "maintain the habitats of resource species."<sup>47</sup>

Conservation goals such as these, focusing as they do on all living resources, cut across all sectors of natural resource management and are presumed to be of equal validity in all regions of the world. Underlying the World Conservation Strategy is the fundamental conviction that conservation and "sustainable development" are mutually dependent.<sup>48</sup> From this premise it follows that coastal development in Southeast Asia is bound to fail in the longer run unless it is environmentally sound. In view of the close relationship between land and water in the South China Sea region, it must be assumed that effective environmental management of the ocean and coastal areas is central to successful development planning.

## THE REGIONALIZATION OF OCEAN MANAGEMENT

### Regions and Regionalism

In its popular meaning, the term "region" is generally accepted as a convenient way of focusing on a part of the planet.<sup>49</sup> Because of the frequency of its use in diverse contexts, it is a term that simply cannot be dispensed with. Yet, to political geographers no concept is more elusive. All efforts to define it precisely are faced with the overwhelming arbitrariness of the task. Regions, like boundaries, may be characterized in many ways according to the kind of significance attributed to them. Although possessing some kind of geographical character, a region may be perceived as political, cultural, economic, or institutional. Indeed, natural features are not normally the predominant consideration in referring to a region; and it rarely, if ever, makes sense to describe a region as "natural."<sup>50</sup> Equally idle, therefore, is to try to precisely delimit regions in general.<sup>51</sup> Even when purely physical features are used for demarcation, incongruities are the rule rather than the exception. More often than not, only the core of a designated region can be defined with absolute precision, and the delineation of the periphery must often be left vague or approximate.<sup>52</sup>

For the political scientist the agony of definition and delimitation is compounded by his need to formulate hypotheses about political behavior at the regional level. Whether the focus is on regional cooperation, regional organizations, regional systems and subsystems, regionalism, or regional integration,<sup>53</sup> the diverse usage of the underlying concept of "region" limits the po-

**Table 1. Relative Compatibility of Uses of Marine and Coastal Areas**

Uses	A	B	B	B	C	C	C	C	C	D	D	D	D	D	D	E	E	E	E	E	F	F	G	G	G	G	H	H	H	H	H	H	I	I	I	I	I	J	
	1	2	3	1	2	3	4	5	1	2	3	4	1	2	3	4	5	1	2	1	2	1	2	3	4	1	2	3	4	5	(i)	(ii)	(iii)	2	3				
Scientific Research	—	4	4	4	4	4	4	4	4	1	1	1	1	1	2	2	3	3	1	2	3	3	2	2	1	1	1	1	1	1	1	2	3	1	3	2			
Aesthetic Preservation																																							
wilderness preservation	4	—	4	4	4	4	4	4	4	1	1	1	1	1	1	1	1	1	1	1	1	2	3	4	3	1	1	2	1	1	1	2	2	1	1	1			
protection of sandy beaches	4	4	—	4	4	4	4	4	4	1	2	2	1	1	1	2	2	3	2	1	2	3	4	3	1	2	2	1	1	1	1	1	2	1	2	1			
protection of sites of natural, historic, cultural value	4	4	4	—	3	4	3	4	4	1	2	1	2	2	1	1	1	3	2	2	4	3	1	2	1	2	3	1	1	1	2	3	1	3	1	3	1		
Conservation of Species																																							
protection of special (ecologically critical) areas (eg, mangroves, deltas)	4	4	4	3	—	4	4	4	4	1	2	1	2	1	1	1	1	1	2	1	1	2	3	1	1	1	1	2	1	1	1	2	2	1	1	1			
marine parks	4	4	4	4	4	—	4	4	3	1	1	1	1	1	1	1	1	3	1	1	2	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	1	
wildlife protection (marine and coastal fauna and flora)	4	4	4	3	4	4	—	4	4	1	1	1	1	1	1	2	2	1	1	3	3	2	2	2	2	2	3	2	1	1	3	3	1	3	1	5	1		
preservation of endangered species	4	4	4	4	4	4	4	—	4	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	1	1	1	2	2	1	1	1			
fishery conservation	4	4	4	4	4	3	4	4	—	2	3	3	2	3	1	2	3	3	1	2	3	3	3	3	3	2	3	2	2	1	3	3	2	2	1				
Urbanization																																							
land reclamation	1	1	1	1	1	1	1	2	—	4	4	3	4	3	3	3	2	4	3	1	1	1	3	4	3	4	3	4	4	4	4	4	4	4	4	4	4	2	
habitation	1	1	2	2	2	1	1	1	3	4	—	4	4	4	1	4	4	3	1	1	2	2	2	3	3	2	4	3	4	1	3	3	2	2	2				
construction	1	1	2	1	1	1	1	3	4	4	—	4	3	1	3	3	2	1	1	2	2	3	4	3	2	3	2	3	2	3	2	4	4	4	2	3	2		
sewage disposal	1	1	1	2	2	1	1	1	2	3	4	4	—	3	3	3	3	2	1	3	2	1	1	2	4	3	4	4	4	4	4	4	4	4	4	4	3		
Industrial and Commercial Development																																							
construction	1	1	1	2	1	1	1	1	3	4	4	3	3	—	4	4	4	2	1	2	1	1	2	4	4	2	4	4	4	4	4	4	4	4	4	4	4		
industrial waste disposal	2	1	1	1	1	1	1	1	3	1	1	3	4	—	3	4	1	1	3	2	1	1	2	4	2	4	4	4	4	4	4	4	4	4	4	4	3		
power facilities	2	1	2	1	1	1	1	2	3	4	3	3	4	3	—	3	2	2	3	2	2	1	3	4	3	4	3	3	4	4	4	4	4	4	4	4			
fishery plants	3	1	2	1	1	1	2	1	3	3	4	3	3	4	4	3	—	3	2	3	4	4	4	4	4	2	3	3	3	3	2	4	4	4	4	2			
tourist facilities	3	1	3	3	2	3	2	1	3	2	3	2	2	2	1	2	3	—	1	1	3	3	3	4	1	3	4	3	2	2	4	4	2	3	2				

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Agricultural Development	
rehabilitation of wetlands	1 1 2 2 1 1 1 1 1 4 1 1 1 1 2 2 1 — 3 1 1 1 2 1 3 4 3 4 4 4 4 4 4 3
agricultural waste disposal	2 1 1 2 1 1 1 1 2 3 1 1 3 2 3 3 3 1 3 — 3 2 2 3 4 4 4 4 4 4 4 4 4 3
Fishery Development	
artisanal (coastal)	3 2 2 4 2 2 3 1 3 1 2 2 2 1 2 2 4 3 1 3 — 3 2 2 1 3 3 1 1 3 4 3 3 4 1
aquacultural (coastal)	3 3 3 3 3 2 3 1 3 1 2 2 1 1 1 2 4 3 1 2 3 — 2 3 1 2 4 1 1 1 3 3 2 4 1
industrial (inshore)	2 4 4 1 1 1 2 1 3 1 2 3 1 2 1 1 4 3 1 2 2 2 — 2 1 3 3 1 1 2 3 4 3 4 1
industrial (offshore)	2 3 3 2 1 1 2 1 3 3 3 4 2 4 2 3 4 4 2 3 2 3 2 — 3 3 3 3 2 2 4 4 4 4 2
Extractive Activities	
coastal land mining (eg, coal tin)	1 1 1 1 1 1 2 1 3 4 3 3 4 4 4 4 2 1 1 4 1 1 1 3 — 4 4 4 3 4 4 4 4 4 4
logging, milling	1 1 2 2 1 1 2 1 2 3 2 2 3 2 2 3 3 3 3 4 3 2 3 3 4 — 4 4 4 4 4 4 4 4 4
offshore petroleum production	1 2 2 3 2 1 3 2 3 4 4 3 4 4 4 4 3 4 4 4 3 4 3 3 4 4 — 4 3 2 2 4 4 4
sand and gravel extraction	1 1 1 1 1 1 2 1 2 3 3 2 4 4 4 3 3 3 3 4 1 1 1 3 4 4 4 — 4 4 4 4 4 3
bottom mining	1 1 1 1 1 1 1 2 4 4 3 4 4 4 3 3 2 4 4 1 1 1 2 3 4 3 4 — 3 3 3 4 4 2
Shipping and Ship Building	
vessel traffic	
oiltankers, LNG carriers, (and other carriers of harmful pollutants)	1 1 1 1 1 1 1 1 1 4 1 2 4 4 4 4 2 2 4 4 3 1 2 2 4 4 2 4 3 — 3 3 4 3 2
general cargo vessels	2 2 1 2 2 1 3 2 3 4 3 4 4 4 4 4 4 4 4 4 3 3 4 4 4 2 4 3 3 — 4 4 4 4
fishing vessels	3 2 2 3 2 1 3 2 3 4 3 4 4 4 4 4 4 4 4 3 3 4 4 4 4 2 4 3 3 4 — 4 4 4
ship building	1 1 1 1 1 1 1 2 4 2 2 4 4 4 4 4 2 4 4 3 2 3 4 4 4 4 4 4 4 4 — 4 4
harbor development/maintenance	3 1 2 3 1 2 3 1 2 4 2 3 4 4 4 4 4 3 4 4 4 4 4 4 4 4 4 4 3 4 4 4 — 4
Desalination	2 1 1 1 1 1 1 1 2 2 2 3 4 3 4 2 2 3 3 1 1 1 2 4 4 4 3 2 2 4 4 4 —

Key: Potential Degree of Compatibility—4 high; 3 medium; 2 low; 1 very low.

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tential utility of such theorizing. The imprecision of the regional focus presents particularly acute problems in the theory of international relations, where serious efforts are made to acquire "insights into the process of community formation" at the international level.<sup>54</sup>

Yet, one should not exaggerate the importance of the problems inherent in the definition and delimitation of geographical regions. In looking at regionalism and its variants, political scientists normally are studying "regional approaches" to problems and issues: that is, they focus on a level of treatment intermediate between the *national* and the *global*. To that extent their immediate interest lies less in the geography of the region than in the structure and dynamics of a geographically defined "regional arrangement." Less immediate is the concern with the phenomenon of "regionalization": the trend toward a more or less localized pattern of cooperative action within the international political system, explainable in terms of an apparent perception by two or more states of links resulting from geographical proximity.<sup>55</sup> Since the perceived links may be of a limited kind, the region that is subject to cooperative action may be characterized in specific *functional* terms as a type of "institutional region," such as an "international resource region."<sup>56</sup> In such a region the importance of a precise definition of the outer limits may vary considerably with the administrative functions assigned to the institution.

### **Marine Regions and Marine Regionalism**

The problems of definition and delimitation are scarcely less complicated when applied to the ocean. Indeed, they are aggravated to some degree by a number of considerations: for example, concepts and practices of regional affiliation and alignment are essentially land oriented; there is little cultural tradition to support broad-based regional cooperation at sea; the surface waters of the ocean present relatively few natural features to assist efforts at regional definition and delimitation; ecologically sensible and administratively convenient divisions of ocean space are frequently incompatible with political preferences; and recent nationalistic and acquisitive tendencies in the law of the sea seem less than conducive to even the concept of regional sharing. But even if the "world federalist" goal of global ocean management were politically popular, few would argue for eliminating the regional level of regulation and administration. In several sectors of ocean management the national approach seems too narrow and the global approach too broad. For reasons of efficiency—even in the absence of supportive traditions of regional cooperation—it seems necessary to invent regional mechanisms as an intermediate component in what may be termed a "split-level" system of authority on the oceans.<sup>57</sup>

In the context of ocean affairs one sees two distinct approaches to the con-

cept of regionalism: that of the political geographer on the one hand, and that of the political scientist on the other. The former, it seems, is interested primarily in the conceptual significance of efforts to divide the marine environment into regions, as reflected in various kinds of regional arrangements; whereas the latter is concerned chiefly with the strategic, political, operational, or conceptual significance of regional arrangements, based as they are on various concepts of a marine region.

This difference of emphasis has led both disciplines into the art of rather subtle distinctions. One prominent political geographer, L. M. Alexander, for example, has distinguished three principal forms of marine regions: *physical regions* ("differentiated from other areas on the basis of coastal configuration"), *management regions* ("representing situations where there is a well-defined management problem, capable of being handled as a discrete issue"), and *operational regions* ("sites of one or more regional arrangements").<sup>58</sup> Physical marine regions, he suggests, can be divided in two ways: into nine *ocean basins* and, somewhat more arbitrarily, into twenty-four *semienclosed seas*.<sup>59</sup> In addition, there are various kinds of physical marine subregions, such as the Sea of Azov, the Gulfs of Bothnia, Thailand, and Aqaba, and the northwestern approaches to the Strait of Malacca. One could also include archipelagic regions, including those of Indonesia and the Philippines, which are large enough to encompass a number of partially enclosed seas (eg. Java, Flores, Banda, and Molucca), and the waters adjacent to island areas, such as the Leeward and Windward islands of the Caribbean.<sup>60</sup> Each of these types of regions or subregions could be regarded as a potential site or "unit" for certain ocean management purposes. Accordingly, some but not all of these physical regions might also qualify as a management or operational region.<sup>61</sup>

On the other hand, an equally prominent political scientist, E. L. Miles, has drawn a distinction between two approaches to the definition of "region." "The first is to use location/contiguity as the determining criterion and infer that there is a direct causal relationship between this characteristic and the pattern of activities and policy problems dealt with. . . . The second alternative is to treat location as being secondary and focus instead on the pattern of activities and perceived policy problems that should be at least analytically separable from the rest of the world."<sup>62</sup> This allows him to go further and distinguish between "fully regional" arrangements ("[i]f the countries involved are all situated around the locus of the perceived problems") and "quasi-regional" arrangements ("[i]f countries from other parts of the world are also involved").<sup>63</sup>

However one treats these terms in the abstract, the normal mode of reference in contemporary writings on marine regionalism is to two kinds of regional arrangements: *regional agreements* and *regional organizations*. Both kinds of arrangements will play an important role in the development of the law of the sea in the 1980s.

### Regional Arrangements and UNCLOS III

At the commencement of UNCLOS III it was hoped, no doubt by most delegations, that as much as possible would be provided as a global foundation for the new law of the sea. Indeed, it may have been widely assumed that one of the major purposes of such a large-scale, virtually comprehensive, law-making convention was to produce a nearly complete system of global principles and procedures for ocean management, thus minimizing the need for regional arrangements. If so, many delegates must have been dismayed to learn just how many political and institutional limitations are inherent in global arrangements for managing the world's oceans, and how much would have to be left to regional arrangements.

The significance of this is particularly striking at a law-making conference that has devoted so much effort to allocating to coastal states extensive areas of *national* authority. Despite the dramatic seaward extensions of limits of national jurisdiction around the world, the conference has created the universal need for an unprecedented range of regional arrangements, not only to implement but also to supplement these global provisions. Two principal kinds of regional arrangements will be required after the conclusion of UNCLOS III: (1) regional organizations to assist in the implementation of the final provisions and (2) regional agreements to supplement the new global principles and procedures. Even if the conference fails to produce a generally accepted final text, so that the new law of the sea lacks a universal treaty foundation, many of the UNCLOS III formulations that survived unchanged throughout the second half of the 1970s are likely to remain uncontested by most nations in the 1980s, and thus are likely to acquire some degree of juridical significance in customary international law. In such a situation implementation of these formulations by regional organizations would still be needed for interpretation, in some cases, as well as application.

Even those commentators who doubt there will be any significant trend toward regionalism in the immediate future concede that certain problems exist which coastal states probably will have to deal with through regional arrangements:<sup>64</sup> such as "the management of regional pollution problems, particularly those of enclosed or semi-enclosed seas; the management of certain regional pelagic fisheries; certain regional efforts at scientific inquiry and information gathering; possibly some attempts to establish denuclearized 'zones of peace' in certain areas; and perhaps certain regional attempts to deal with areas where jurisdiction is uncertain, such as Antarctica."<sup>65</sup>

In the view of other commentators,<sup>66</sup> there will be increasing need in the 1980s to seek regional or subregional solutions to a large number of problems left in the wake of decolonization. Some of these problems are likely to be perceived as special to a particular locality and not amenable to effective treat-

ment through global rule-making.<sup>67</sup> In particular, it has been suggested, regionalism may have to play an important role in the management of two kinds of special conflicts: those between developed and developing nations over the development and transfer of skills and technology, and those between coastal and landlocked (or otherwise geographically disadvantaged) states over special access or sharing arrangements.<sup>68</sup>

The latest text of UNCLOS III—the Draft Convention on the Law of the Sea<sup>69</sup>—contains numerous references, both explicit and implicit, to the need for regional arrangements. Of the explicit references, there are six principal kinds. First, there are numerous omnibus references to the need for states to cooperate in a particular way. “either directly or through appropriate organizations global or regional.”<sup>70</sup> Such a phrase is intended to encompass, among other things, the prospect both of regional (and presumably subregional) *agreements* and of regional (or subregional) *organizations*. Second, there are equally many references to the need for cooperation with appropriate organizations, where it has to be inferred whether global or regional organizations would be involved.<sup>71</sup> Third, there are a few cases where the specific need for “bilateral, subregional or regional agreement” is recognized expressly.<sup>72</sup> Fourth, there are several references to subregional and/or regional organizations.<sup>73</sup> Fifth, a number of draft articles envisage some kind of special arrangement without specifying the level or mode of cooperation.<sup>74</sup> Sixth, a few references apparently are limited to bilateral arrangements.<sup>75</sup>

In addition, the conference breaks new ground (in dealing with the problems of development and transfer of marine technology) by providing for the establishment of regional as well as national “marine scientific and technological centres.” Such centers would be designed “to stimulate and advance the conduct of marine scientific research by developing States and foster the transfer of technology.”<sup>76</sup>

## REGIONAL ARRANGEMENTS FOR THE PROTECTION AND CONSERVATION OF THE MARINE ENVIRONMENT

### Regional Agreements

To give a precise definition of a regional agreement has always been difficult. Part of the difficulty comes from the diversity of meanings assigned to the concept of “region” or “subregion.” Moreover, some agreements are regional not only in the sense that they focus for a particular purpose on a physically defined geographical area, but also in the sense that the parties consist of countries that belong to that area. If all the countries of a region have become parties to an agreement, then that agreement is “fully regional,” (or “fully

subregional'). If, on the other hand, some of the parties do not belong to the region that is the focus of the agreement—that is, if some of the parties are “extraregional”—then the arrangement might be described as only “quasi-regional.”

The compilation of Table 2 involves a somewhat arbitrary selection process. The difficulty of deciding what to include in a list of regional agreements for the conservation of marine species is compounded by the recent proliferation of bilateral fishery agreements, many of which are subregional, if not regional, in focus. Most of these agreements, however, are concerned chiefly with access to designated stocks in newly established fishing zones rather than with conservation proper and are therefore omitted from Table 2. Only a few bilaterals are regarded as sufficiently concerned with conservation to be included.

Two features of Table 2 are worthy of comment. First, the four marine regions that have attracted conservation agreements—the Atlantic, the Arctic, the Indo-Pacific, and the Southern Ocean—vary considerably in the number of levels of approach taken to regional arrangements. All four have been the focus of at least one regionwide (general) agreement. Of these regionwide agreements, three are concerned expressly with a single species (Atlantic tunas, Arctic polar bears, and Antarctic seals), one is devoted primarily (though nonexplicitly) to a single species (krill), and the fifth is simply the means of establishing a fisheries council for the region (Indo-Pacific). But whereas the Southern Ocean is limited to regionwide agreements, the Atlantic Ocean has attracted conservation agreements at no less than *eight* other levels within the region. Moreover, seven of these Atlantic conservation agreements are multilateral, that is, they have four or more parties. The Atlantic, in short, is seen to be the most “developed” in the range and diversity of regional arrangements for the conservation of marine species. The Indo-Pacific shows five levels of approach below the regionwide level, and only three of the Indo-Pacific conservation agreements are multilateral.

Second, eleven of the thirty-nine agreements listed in Table 2 are characterized as “fully regional” or “fully subregional,” and twelve as “quasi-regional” or “quasi-subregional.” There is no quasi-regional arrangement for the Arctic; and, for physical and legal reasons, there is no fully regional agreement for the Southern Ocean.<sup>27</sup> Both the Atlantic and Indo-Pacific regions are fairly evenly balanced between fully regional and quasi-regional arrangements; seven and six, respectively, for the former, and three and four, respectively, for the latter.

Table 3 shows that only two regions—the Atlantic and the Indo-Pacific—have attracted regional agreements for the prevention and control of marine pollution. Of the seventeen instruments listed, fourteen belong to the Atlantic, at seven levels below the regionwide level. The other three agreements belong to the Indian Ocean, at two subregional levels. Fourteen agreements are mul-

tilateral, one is trilateral, and two are bilateral. Eight are fully or almost fully regional or subregional. But the striking feature of Table 3 is the absence of any quasi-regional agreements for marine pollution prevention and control. In the case of regional conservation agreements, no less than twelve of those listed in Table 2 were quasi-regional.

Note that Tables 2 and 3, taken together, do not reflect the whole picture of emerging regional legal commitments in these areas around the world. One must take into account that regional treaty-making is virtually a continuous process. The Regional Seas Programme of the U.N. Environment Programme (UNEP) alone is generating dozens of instruments creating regional "commitments": some of these (eg, regional conventions and protocols) are legal in character, others (eg, Action Plans) are political but point to the need for legal instruments. Still others might be added that have been concluded in a form that seems to take them outside the normal definitions of regional agreements, or even regional commitments, and yet may be regarded as having significant regional implications for the protection and conservation of the marine environment.

### Regional Organizations

Unlike "regional agreement," the term "regional organization" is defined relatively narrowly for this study. In view of the proliferation of regional organizational initiatives in marine affairs—including a host of research programs or projects—it seems more useful to list only those organizational frameworks or mechanisms that are designed chiefly for making decisions or recommendations about the conservation of marine species or about the prevention or control of marine pollution. Accordingly, organizations responsible mainly for the conduct or coordination of research, or the dissemination of data, are omitted—even though this means the exclusion of long-established and respected institutions such as the International Council for the Exploration of the Sea (ICES).<sup>78</sup>

Subject to these exclusions, a comparison of Tables 4 and 5 which list regional organizations, shows a much larger number in the field of marine species conservation than in that of marine pollution prevention and control: 29 against 8. Note that this ratio reflects an even sharper disparity between regionalization trends in the two fields than the 39:15 ratio between conservation and pollution control agreements listed in Tables 2 and 3, respectively. Globalism in marine pollution prevention and control, however, seems likely to be reduced significantly as the UNEP Regional Seas Programme results in a growing number of regional arrangements in the early 1980s. Whether that expected increase will be matched by a significant increase in the number of

**Table 2. Current Regional Agreements for the Conservation of Marine Species**

Region	Agreement	Parties	Type	Citation
<i>Atlantic</i>				
General	International Convention for the Conservation of Atlantic Tunas, 1966	multilateral	quasi-regional	673 <i>UNTS</i> 63
	Agreement relating to Conservation of Atlantic Salmon, 1972	Denmark, USA	fully regional	<i>TIAS</i> 7402
Northeast	Agreement on Measures for Regulating the Catch and Conserving the Stocks of Seals in the Northeastern Part of the Atlantic Ocean, 1957	Norway, USSR	fully regional	309 <i>UNTS</i> 280
	Northeast Atlantic Fisheries Convention, 1959	multilateral	fully regional	486 <i>UNTS</i> 157
Skagerrak, Kattegat, and Sound	Agreement Concerning the Regulation of Fishing of the Atlantic Scandinavian Herring, 1973	Iceland, Norway, USSR	(sub)regional	ST/LEG/SER. B/18, p. 563
	Convention Concerning the Preservation of Plaice and Dab, 1937	Denmark, Norway, Sweden	fully (sub)regional	186 <i>UNTS</i> 419
Baltic	Agreement Concerning Measures for Protection of the Stocks of Deep-sea Prawns, European Lobsters, Lobsters, and Crabs, 1952	Denmark, Norway, Sweden	regional	175 <i>UNTS</i> 208
	Agreement Concerning the Protection of the Salmon Population in the Baltic Sea, 1962 (with Protocol, 1972)	multilateral	regional	ST/LEG/SER. B/15, p. 859 (ST/LEG/SER. B/18, p. 561)
	Agreement on Fishing and Sealing (in the Gulf of Finland), 1969	Finland, USSR	fully regional	739 <i>UNTS</i> 78
	Convention on Fishing and Conservation of the Living Resources in the Baltic Sea and Belts, 1973	multilateral	fully regional	12 <i>ILM</i> 1292 (1972)
Northwest	Agreement on Sealing and Conservation of Seal Stocks in the Northwest Atlantic, 1971	Canada, Norway	quasi-regional	870 <i>UNTS</i> 85

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	Convention on Future Multilateral Co-operation in the Northwest Atlantic Fisheries, 1978	multilateral	quasi-regional	1979 <i>CanTS</i> , No. 11
	Agreement on East Coast Fishery Resources, 1979 (unperfected)	Canada, USA	(sub)regional	9 Nordquist and Simmonds, eds., <i>New Directions in the Law of the Sea</i> (1980), p. 178
Mediterranean	Agreement for the Establishment of a General Fisheries Council for the Mediterranean, 1949 (as amended 1963)	multilateral	regional	126 <i>UNTS</i> 237; 490 <i>UNTS</i> 444
Black Sea	Convention Concerning Fish in the Black Sea, 1959	Bulgaria, Romania, USSR	fully regional	377 <i>UNTS</i> 203
Southeast	Convention on the Conservation of the Living Resources of the Southeast Atlantic, 1969	multilateral	quasi-regional	801 <i>UNTS</i> 101
Caribbean	Agreement concerning Shrimp, 1972	Brazil, Trinidad, and Tobago	(sub)regional	1 Lay, Churchill, and Nordquist, eds., <i>New Directions in the Law of the Sea</i> (1973), p. 463
Southwest	Agreement on Fishing and Conservation of Living Resources, 1968	Brazil, Uruguay	regional	ST/LEG/SER.B/16, p. 510
	Agreement concerning Shrimp, 1972	Brazil, Netherlands	quasi-(sub)regional	ST/LEG/SER.B/18/Add. 2, p. 348 (1975)
<i>Arctic</i>				
General	Agreement on Conservation of Polar Bears, 1973	multilateral	fully regional	13 <i>ILM</i> 13 (1974)
Northeast	Agreement on the Regulation of the Fishing of Northeast Arctic Cod, 1974	Norway, UK, USSR	regional	13 <i>ILM</i> 1261 (1974)
<i>Indo-Pacific</i>				
General	Agreement for the Establishment of Indo-Pacific Fisheries Council, 1948	multilateral	quasi-regional	120 <i>UNTS</i> 59

(continued)

Table 2. (Continued)

Region	Agreement	Parties	Type	Citation
North Pacific	Convention for the Preservation of the Halibut Fishery of the Northern Pacific Ocean and Bering Sea, 1953 (as amended 1979)	Canada, USA	regional	222 <i>UNTS</i> 77; 9 Nordquist and Simmonds, eds., <i>New Directions in the Law of the Sea</i> (1980), p. 233
	Interim Convention on the Conservation of North Pacific Fur Seals, 1957 (as amended and extended, 1963, 1969, and 1976)	multilateral	fully regional	314 <i>UNTS</i> 105; 719 <i>UNTS</i> 313
Northwest Pacific	Agreement Relating to Fishing for King and Tanner Crab, 1974	Japan, USA	regional	<i>TIAS</i> 7986
	Agreement Regarding the King and Tanner Crab Fisheries in the Eastern Bering Sea	USA, USSR	(sub)regional	(renegotiated annually)
	Agreement relating to the Crab Fisheries in the Northwest Pacific Ocean	Japan, USSR	regional	6 Churchill, Nordquist, and Lay, eds., <i>New Directions in the Law of the Sea</i> (1977), p. 762
	Convention concerning High Seas Fisheries of the Northwest Pacific Ocean, 1956	Japan, USSR	regional	53 <i>AJIL</i> 763
	Agreement on Fisheries, 1965	Japan, South Korea	(sub)regional	4 <i>ILM</i> 1128 (1966)
	Agreement on Fisheries, 1975	China, Japan	(sub)regional	6 Churchill, Nordquist, and Lay, eds., <i>New Directions in the Law of the Sea</i> (1977), p. 766

Northeast Pacific	Convention for the Protection, Preservation and Extension of the Sockeye Salmon Fishery of the Fraser River, 1939 (Protocol, 1956)	Canada, USA	(sub)regional	184 <i>LNTS</i> 305; 290 <i>UNTS</i> 104
	International Convention for the High Seas Fisheries of the North Pacific, 1952 (as amended 1978)	Canada, Japan, USA	quasi-regional	205 <i>UNTS</i> 67; <i>TIAS</i> 4493; <i>TIAS</i> 5385
	Agreement on Certain Fisheries Problems in Northeastern Part of the Pacific Ocean Off the U.S. Coast	USA, USSR	quasi-regional	(renegotiated annually)
	Agreement Concerning Fishing off the West Coast of Canada, 1979	Canada, USA	fully (sub)regional	9 Nordquist and Simmonds, eds., <i>New Directions in the Law of the Sea</i> (1980), p. 213
Eastern Pacific	Convention for the Establishment of an Inter-American Tropical Tuna Commission, 1949	multilateral	quasi-regional	80 <i>UNTS</i> 3 (196 <i>UNTS</i> 4)
Southeast Pacific	Agreements on the Exploitation and Conservation of Marine Resources of the South Pacific, 1952 (as amended 1954)	Chile, Ecuador, Peru	fully regional	<i>ST/LEG/SER. B/6</i> , p. 723 ( <i>ST/LEG/SER. B/6</i> , p. 729)
<i>Southern</i>				
General	Convention on the Conservation of Antarctic Seals, 1972	multilateral	quasi-regional	11 <i>ILM</i> 251 (1972)
	Convention on the Conservation of Antarctic Marine Living Resources, 1980	multilateral	quasi-regional	19 <i>ILM</i> 841 (1980)

*UNTS*: United Nations Treaty Series

*TIAS*: United States Treaties and Other International Agreements

*ILM*: International Legal Materials

*CanTS*: Canadian Treaty Series

*LNTS*: League of Nations Treaty Series

*AJIL*: American Journal of International Law

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**Table 3. Current Regional Agreements for Marine Pollution Prevention and Control**

Region	Agreement	Parties	Type	Citation	
<i>Atlantic</i>	Northeast	Convention for the Prevention of Marine Pollution by Dumping from Ships and Aircraft (Oslo), 1972	multilateral	regional	ST/LEG/SER.B/16, p. 457
		Convention for the Prevention of Marine Pollution from Land-Based Sources (Paris), 1974	multilateral	regional	13 <i>ILM</i> 352 (1974)
North Sea	Agreement for Cooperation in Dealing with Pollution of the North Sea by Oil (Bonn), 1969 (amended 1972)	multilateral	fully regional	704 <i>UNTS</i> 3	
	Convention on Civil Liability for Oil Pollution Damage Resulting from Exploring and Exploitation of Seabed Mineral Resources (London), 1976	multilateral	regional		
Sound	Agreement Concerning the Protection of the Sound (Oresund) from Pollution, 1974	Denmark, Sweden	fully (sub)regional	ST/LEG/SER.B/18/ Add. 2, p. 297	
Baltic	Agreement Concerning Cooperation in Measures to Deal with Pollution of the Sea by Oil (Nordic), 1971	multilateral	regional	822 <i>UNTS</i> 324	
	Convention on the Protection of the Marine Environment of the Baltic Sea Area (Helsinki), 1974	multilateral	fully regional	4 Churchill and Nordquist, eds., <i>New Directions in the Law of the Sea</i> (1975), p. 455	
Mediterranean	Convention for the Protection of the Mediterranean Sea against Pollution (Barcelona), 1976	multilateral	regional		
	Protocol Concerning Cooperation in Combating Pollution by Oil and Other Harmful Substances in Cases of Emergency, 1976	multilateral	regional		
	Protocol for the Prevention of Pollution by Dumping from Ships and Aircraft, 1976	multilateral	regional		
	Protocol for the Protection of the Mediterranean against Pollution from Land-Based Sources, 1980	multilateral	(almost fully regional)	19 <i>ILM</i> 869 (1980)	

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Adriatic	Agreement on Co-operation for the Protection of the Waters of the Adriatic Sea and Coastal Zones from Pollution, 1974	Italy, Yugoslavia	fully (sub)regional	6 Churchill, Nordquist, and Lay, eds. <i>New Directions in the Law of the Sea</i> (1977), p. 456
Southeast (and Eastern Central)	Convention for Co-operation in the Protection and Development of the Marine and Coastal Environment of the West and Central African Region (Abidjan), 1981	multilateral	regional	20 <i>ILM</i> 746 (1981)
	Protocol Concerning Co-operation in Combating Pollution in Cases of Emergency, 1981	multilateral	regional	20 <i>ILM</i> 256 (1981)
<i>Arctic</i>	—	—	—	
<i>Indo-Pacific</i>				
Indian	—	—	—	
Persian Arabian Gulf	Kuwait Regional Convention for Co-operation and Protection of the Marine Environment from Pollution, 1978	multilateral	fully (sub)regional	17 <i>ILM</i> 501
	Protocol Concerning Regional Co-operation in Combating Pollution by Oil and Other Harmful Substances in Cases of Emergency, 1978	multilateral	fully (sub)regional	17 <i>ILM</i>
Malacca and Singapore Straits	Tripartite Agreement on the Safety of Navigation in the Straits of Malacca and Singapore, 1977	Indonesia, Malaysia, Singapore	fully (sub)regional	IMCO Res. A375 (1977)
<i>Southern</i>	—	—	—	

UNTS: United Nations Treaty Series

TIAS: United States Treaties and Other International Agreements

ILM: International Legal Materials

CanTS: Canadian Treaty Series

LNTS: League of Nations Treaty Series

AJIL: American Journal of International Law

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regional conservation arrangements will depend on a number of imponderables, such as the probability that nation states in the early 1980s will encourage the Food and Agriculture Organization (FAO) to lead them into regional fishery conservation arrangements in the wake of worldwide acceptance of extended national jurisdiction over living marine resources.

Another striking contrast brought out in Tables 4 and 5 is in the number of quasi-regional organizations: 13 of the 29 listed in the former, none of the 8 in the latter. The ratios are to be compared with those of 12:39 and 0:15 shown in Tables 2 and 3, respectively. Some change is to be expected in the field of conservation as regional blocs attempt to reduce or even eliminate extraregional control over the management of their marine resources. In marine pollution prevention and control, on the other hand, the exclusion of extraregional influence from regional arrangements is likely to continue under the sympathetic aegis of the UNEP Regional Seas Programme.

## UNEP AND THE REGIONAL SEAS PROGRAMME

### Introduction

The U.N. Environment Programme (UNEP) has been a member of the U.N. family since 1973. The idea of an international environmental agency had been discussed widely in official and academic circles in the years of preparation leading up to the U.N. Conference on the Human Environment held at Stockholm in 1972.<sup>79-81</sup> By that time a consensus had emerged that the primary need was for a mechanism to promote environmental initiatives within the United Nations and coordinate relevant activities involving the U.N. agencies and the member states. The Stockholm conference recommended the establishment of a "permanent institutional arrangement,"<sup>82</sup> and, acting upon this, the U.N. General Assembly gave birth to UNEP on 15 December 1972.<sup>83</sup>

Since it was clearly impracticable to secure a total involvement by UNEP in all environmental issues within a single comprehensive framework it was decided at an early stage to build up programs in certain designated priority areas. By 1976, these priorities were: human settlements and human health; the management and control of terrestrial ecosystems; environment and development; oceans; energy; and natural disasters.<sup>84</sup> The decision to include oceans in its list of priorities was consistent with the oceanic emphasis provided at Stockholm,<sup>85</sup> and apparently reflected a continuing concern with the problems of marine pollution.<sup>86</sup> Even as early as the summer of 1974, as UNCLOS III began its substantive sessions in Caracas, Venezuela, it was evident that

**Table 4. Current Regional Organizations for the Conservation of Marine Species**

Region	Organization	Members (no.)	Type	Established by
<i>Atlantic</i>				
General	International Commission for the Conservation of Atlantic Tunas (ICCAT)	12	quasi-regional	ICCAT Convention, 1966
Northeast Atlantic	Sealing Commission for the Northeast Atlantic (SCNEA)	2 (Norway, USSR)	fully regional	SCNEA Convention, 1957
	North-East Atlantic Fisheries Commission (NEAFC)	14	fully regional	NEAFC Convention, 1959
Baltic	Shellfish Commission for Skagerrak and Kattegat	3 (Denmark, Norway, Sweden)	fully subregional	Agreement of 1952
	Baltic Sea Salmon Standing Committee International Baltic Sea Fishery Commission (IBSFC)		fully regional	IBSFC Convention, 1973
Northwest Atlantic	Sealing Commission for the Northwest Atlantic (SCNWA)		quasi-regional	SCNWA Convention
	Northwest Atlantic Fisheries Organization (NAFO)		quasi-regional	NAFO Convention, 1978
	U.S.-Canada East Coast Fisheries Commission (not yet in operation)	2 (Canada, USA)	fully subregional	Fisheries Convention, 1979
East Central Atlantic	Fishery Committee for the Eastern Central Atlantic (CECAF)	27	quasi-regional	FAO Council Resolution, 1967
West Central Atlantic	Western Central Atlantic Fishery Commission (WECAFC)	23	quasi-regional	FAO Conference
Mediterranean	General Fisheries Council for the Mediterranean (GFCM)	18	fully regional	GFCM Convention, 1949
Black Sea	Mixed Commission for Black Sea Fisheries (MCBSF)	3 (Bulgaria, Rumania, USSR)	fully regional	MCBSF Convention, 1959

(continued)

**Table 4. (Continued)**

Region	Organization	Members (no.)	Type	Established by
Southeast Atlantic	International Commission for Southeast Atlantic Fisheries (ICSEAF)		quasi-regional	
Southwest Atlantic	Regional Fisheries Advisory Commission for the Southwest Atlantic (CARPAS)	3 (Argentina, Brazil, Uruguay)	fully regional	FAO Conference Resolution, 1962
Caribbean	—	—	—	
<i>Arctic</i>				
<i>Indo-Pacific</i>				
General	Indo-Pacific Fisheries Council (IPFC)	18	quasi-regional	IPFC Convention, 1948
Indian	Indian Ocean Fishery Commission (IOFC)	29	quasi-regional	FAO Council Resolution, 1948
North Pacific	International Pacific Halibut Commission (IPHC)	2 (Canada, USA)	regional	IPHC Convention, 1953 (replacing 1924 and other Conventions)
	North Pacific Fur Seal Commission (NPFSC)	4 (Canada, Japan, USA, USSR)	fully regional	NPFSC Convention, 1957
Northeast Pacific	International Pacific Salmon Fisheries Commission (IPSFC)	2 (Canada, USA)	subregional	IPSFC Convention, 1930
	International North Pacific Fisheries Commission (INPFC)	3 (Canada, Japan, USA)	quasi-regional	INPFC Convention, 1952 (amended 1978)
Northwest Pacific	Japanese-Soviet Northwest Pacific Fisheries Commission (JSFC)	2 (Japan, USSR)	regional	JSFC Convention, 1956
	Commission for Fisheries Research in the Western Pacific	4 (China, North Korea, USSR, Vietnam)	quasi-regional	Convention of 1956

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	Japan–Republic of Korea Joint Fisheries Commission (JKFC)	2 (Japan, South Korea)	subregional	JKFC Convention, 1965
	Japan–China Joint Fisheries Commission (JCFC)	2 (China, Japan)	subregional	JCFC Convention, 1977
<b>Eastern Pacific</b>	Inter-American Tropical Tuna Commission (IATTC)	6	quasi-regional	IATTC Convention, 1949
<b>South Pacific</b>	—	—	—	
<b>Southeast Pacific</b>	Permanent Commission of the Conference on the Use and Conservation of the Marine Resources of the South Pacific (PCSP)	3 (Chile, Ecuador, Peru)	fully regional	Agreement of 1952
	Fisheries Council of South Pacific Forum		regional	
<b>Southwest Pacific</b>	SEAFDEC	5 (SEA countries, Japan)	quasi-regional	Agreement of 1967
<i>Southern</i>	Scientific Committee on Antarctic Research of ICSU, 1972 (Conservation of Antarctic Seals)			

**Table 5. Current Regional Organizations for Marine Pollution Prevention and Control**

Region	Agreement	Members (no.)	Type	Established by
<i>Atlantic</i>				
Northeast	(Mixed) Commission (for the Prevention of Pollution by Dumping from Ships and Aircraft), 1972	9	regional	Oslo Convention, 1972
North Sea	(Mixed) Commission (for the Prevention of Marine Pollution from Land-Based Sources), 1974	8	regional	Paris Convention, 1974
	Committee (on Civil Liability for Oil Pollution Damage Resulting from Exploration and Exploitation of Seabed Mineral Resources), 1976	6	regional	London Convention, 1976
Sound	Danish-Swedish Commission, 1974	2 (Denmark, Sweden)	fully subregional	Oresund Agreement, 1974
Baltic	Baltic Marine Environmental Protection Commission, 1974	7	fully regional	Helsinki Convention, 1974
Mediterranean	Regional Center (for Combating Pollution by Oil and Other Harmful Substances in Cases of Emergency), 1976	17	regional	Barcelona Convention, 1976
<i>Arctic</i>				
<i>Indo-Pacific</i>				
Indian	—	—	—	—
Persian Gulf	Marine Emergency Mutual Aid Centre, 1978	8	fully subregional	Kuwait Convention, 1978
Malacca and Singapore Straits	Council for the Safety of Navigation and Control of Marine Pollution, 1977	3 (Indonesia, Malaysia, Singapore)	fully subregional	Tripartite Agreement
<i>Southern</i>				
	—	—	—	—

important changes in the law of the sea concerning ship-generated pollution would require UNEP to play an important coordinative role in that area. Equally clearly, the critical problem of land-based pollution of the sea, which could not be dealt with in any detail by UNCLOS III, would be of special concern to UNEP, since land-based activities were the most important source of marine pollution and created a problem that could be treated effectively only through intergovernmental cooperation among inland as well as coastal states.

The Stockholm approach to the problems of marine pollution had emphasized the tasks of assessment and control. In developing a general strategy for its oceans program, UNEP's Governing Council, at its third session in 1975, adopted the following objectives: (1) the promotion of international and regional conventions, guidelines, and action for the control of marine pollution and for the protection and management of aquatic resources; (2) the assessment of the state of pollution and of living resources; and (3) the monitoring of marine pollution and aquatic resources.<sup>87</sup>

The identification of UNEP's objectives, in any of the designated areas, was not easy. In the first place, the arrival of a new agency within the U.N. bureaucratic system was seen by many as an additional competitive strain on scarce budgetary and other resources, and UNEP had to contend initially with defensive, even resentful, attitudes from older agencies. Second, although UNEP's mandate was described chiefly in *coordinative* terms, its field of concern was extremely broad, and it proved difficult for the agency's enthusiastic leadership to avoid giving the impression of seeking a *directive* role in U.N. affairs.<sup>88</sup> Third, in the wake of the Stockholm conference, UNEP inevitably inherited a climate of suspicion or apathy on the part of some developing countries, which still maintained that environmental concerns should have a lower priority than their developmental needs.<sup>89</sup> Fourth, UNEP's interest in promoting international environmental conventions—and, to that extent, in the development of international environmental law—was regarded by some national governments as improper, especially at a time when forums such as UNCLOS III were engaged in difficult and controversial issues of that kind.<sup>90</sup>

Despite some resistance along these lines, UNEP was able to make considerable progress in the early stages of its oceans program. This may be attributed chiefly to its decision to adopt a regional strategy.<sup>91</sup> Such a strategy was designed to deflect unnecessary criticism in a number of ways: by concentrating on selected marine regions that seemed to be significantly vulnerable to environmental dangers; by taking into account the physical, political, and economic characteristics of each of these areas of the ocean environment; by following a schedule that permitted realistic program objectives to be met within a time-frame appropriate to each region; and by recognizing the need for close and continuing participation by the countries affected at all stages of preparation and implementation of each regional plan. Given sufficient sup-

port from the participating countries, steps would be taken to implement in each region a comprehensive action plan. Each regional action plan would be followed by a general framework convention supplemented by appropriate protocols.

Subject to regional variations, each regional action plan would be designed around the Stockholm model, which consisted of three components: environmental assessment, environmental management, and supporting measures.<sup>92</sup> Of these three components the first was the most clearly envisaged. Nothing, it was agreed generally, could be accomplished or even understood without amassing the relevant data for assessment in the service of environmental management. Data would be needed on such matters as "the sources, amounts, behavior, and effects of pollutants in the sea water, sediments, and biota; effects of these pollutants on human health and coastal ecosystems; status and trends of exploitation of living and nonliving resources; ongoing socio-economic development practices which have direct or indirect effects on the environment; and the status and proficiency of local institutions and experts available for participation in the action plan."<sup>93</sup> Unfortunately, effective environmental assessment is an expensive undertaking, and this area of UNEP activities, dependent as it is on the work of other agencies, has been slow in developing.<sup>94</sup>

The concept of "environmental management," on the other hand, is more difficult to articulate. Most theorists would argue, for example, that it consists of several functions, including assessment.<sup>95</sup> Even if the latter is treated separately as a premanagerial activity, the need for assessment does not cease after the introduction of a management system; on the contrary, it might be asserted, assessment becomes more specific once administrative opportunities and requirements have been clarified. Management continues, moreover, after the need for supporting measures has arisen.

Yet, whatever one's views on the theory of environmental management, it is in this area—the *planning* of environmental management systems—that UNEP's practical success has been most conspicuous.<sup>96</sup> Arguably, the most significant test of the success of UNEP's regional seas strategy is its acceptability by the governments with which UNEP has had to consult. With this consideration in mind, as well as the "framework for environmental action" inherited from Stockholm, UNEP no doubt had to adopt a practical approach even to the theory of its strategy.

Further refinement of the Stockholm conceptual model has resulted in a four-element framework that seems generally acceptable for all regional action plans of the UNEP Regional Seas Programme:

- (1) assessment of sources of pollution and of their effects;
- (2) management of natural resources on a sustainable basis in accordance with environmentally sound principles;

- (3) formulation and adoption of legal instruments (regional conventions and protocols); and
- (4) institutional and financial arrangements to implement the Action Plan.<sup>97</sup>

All plans list a large number and variety of current and projected activities aimed at assessing and evaluating the causes, magnitude, and consequences of pollution and related problems in the marine region. Each plan also authorizes a wide range of management activities such as: cooperative regional projects on rational exploitation of marine living resources; utilization of renewable sources of energy; management of freshwater resources; protection of soil from erosion and desertification; development of tourism without ecological harm; mitigation of environmental damage associated with human settlements; and so forth. In most cases a legal framework for cooperative action is also adopted, consisting of a broadly conceived but legally binding regional convention (a "parent" or "framework" treaty) accompanied or followed by more specific, more technical protocols. In some regions the first of these legal instruments are adopted simultaneously with the Action Plan; in other cases they have been adopted later as part of the process of implementation of the plan. Typically, the institutional and financial arrangements required for the implementation of the plan are first set out in informal documents at the conference where the plan is formally adopted.<sup>98</sup>

Initially, it was decided to concentrate on four regions: the Mediterranean, the Persian-Arabian Gulf, the Caribbean, and West Africa (the Gulf of Guinea). By the late 1970s, however, it had been agreed to add four more regions to the program: the East Asian Seas (including the Malacca Strait), the Red Sea and Gulf of Aden, the Southeast Pacific, and the Southwest Pacific. In 1980, two more regions were added, East Africa and the Southwest Atlantic, bringing the total number of designated "regional seas" to ten.

At first impression, the ten ocean regions are strikingly dissimilar in size and in the diversity and scale of their environmental problems. The Red Sea and the Persian-Arabian Gulf are only a fraction of the size of the Southwest Pacific and Southeast Pacific. The Mediterranean is one of the more researched marine regions in the world,<sup>99</sup> and the South Pacific regions are certainly among the least researched. Moreover, great disparities seem to exist in the potentials for cooperative action in the ten regions. It must be hoped, however, that no region is so conflict prone as to place the objectives of cooperative environmental management beyond reach.<sup>100</sup> Any attempt to make a fair evaluation of the choice of regions, however, must recognize that preconceptions of what constitutes a suitable "unit" of management are bound to yield to practical considerations of administrative feasibility and political acceptability, and that if they did not the best efforts at cooperative management would be destined to fail.

## The Mediterranean

Almost from the time the Regional Seas Programme was first conceived, it seemed obvious that UNEP initially should turn its attention to the Mediterranean Sea. None of the other regions under consideration had such a well-documented history of abuse. Along with the Baltic and Black seas, the Mediterranean is one of the world's most seriously polluted semienclosed seas.<sup>101</sup> It has had virtually no tradition of cooperative action as a whole;<sup>102</sup> and yet, since all coastal states contribute to the land-based sources of marine pollution in the region,<sup>103</sup> evidently nothing less than a total collective effort by all the Mediterranean states would be sufficient to deal effectively with the problem. Moreover, all coastal states have much to gain from the introduction of higher environmental standards in the Mediterranean basin: improved water and sanitation for their coastal communities; healthier and more productive fishery stocks; and cleaner, more attractive beaches and scenic areas important for tourist development. Despite disparities in living standards among the Mediterranean states, it seemed feasible politically to launch a pan-regional environmental initiative, provided the UNEP proposals were sound and the coastal countries of the region properly consulted. In short, of all the designated regional seas, the Mediterranean seemed to offer by far the best prospect of success as a regional "laboratory" in the development of marine and environmental management.

The Mediterranean initiative was apparently set in motion as early as December 1969, when the General Fisheries Council for the Mediterranean (GFCM), a regional fishery commission of FAO, initiated a study on the state of pollution in the sea. This study was submitted to the FAO Technical Conference on Marine Pollution and its Effects on Living Resources and Fishing, which advocated a regional approach to marine pollution control in enclosed and semienclosed seas. A revised version of this study was examined by the GFCM in 1972, and two years later a proposal for a convention for the control of pollution affecting the living resources of the Mediterranean was submitted to a formal consultative meeting of the GFCM member states at FAO headquarters in Rome. After discussion of a suggested set of principles, these states agreed to call for the adoption of a comprehensive framework convention, which would be supplemented by several protocols on dumping, pollution emergencies, pollution from ships, land-based sources of pollution, and pollution from seabed exploration and exploitation. To these ends it was agreed to prepare a set of guidelines.<sup>104</sup>

At this stage, the primary promotional effort fell to UNEP, which had taken over the coordinative work assigned to it after the Stockholm conference. The next phase in the process of regional organization consisted of two intergovernmental conferences: the Intergovernmental Meeting on the Protection of

the Mediterranean, held at Barcelona in February 1975; and the Conference of Plenipotentiaries of the Coastal States of the Mediterranean Region, also held at Barcelona, in February 1976.<sup>105</sup> The 1975 conference adopted the proposed Action Plan,<sup>106</sup> and discussed a draft framework convention,<sup>107</sup> and two draft protocols.<sup>108</sup> The 1976 Plenipotentiary Conference adopted and opened for signature the final versions of these three agreements: the (Barcelona) Convention for the Protection of the Mediterranean Sea against Pollution;<sup>109</sup> the Protocol for the Prevention of Pollution of the Mediterranean Sea by Dumping from Ships and Aircrafts,<sup>110</sup> and the Protocol Concerning Co-operation in Combating Pollution of the Mediterranean Sea by Oil and Other Harmful Substances in Cases of Emergency.<sup>111</sup> A number of resolutions were also approved, including one which accepted the proposal for the establishment in Malta of a "regional oil-combating centre" for the Mediterranean staffed by the International Maritime Consultative Organization (IMCO).<sup>112</sup> These instruments went into force in February 1978.

A third protocol, the Protocol for the Protection of the Mediterranean Sea against Pollution from Land-Based Sources, was signed by twelve Mediterranean states and the European Economic Communities (EEC) in May 1980.<sup>113</sup> A fourth protocol on marine parks and protected areas is expected to be submitted for intergovernmental approval in 1982. Some progress has also been made in drafting a fifth protocol on pollution associated with seabed exploration and exploitation. In effect, then, the Mediterranean states will soon have completed most of the legal work envisaged by the GFCM ten years earlier.

Despite the progress achieved in this legal work it may be too early to assess UNEP's initiative in the Mediterranean. As a prototype it has to be evaluated not only with a view to its *acceptability* and *efficacy* in the region,<sup>114,115</sup> but also with a view to its value as a *model* to be followed,<sup>116</sup> subject to appropriate adjustments, in other regions. It may be very nearly impossible to satisfy everyone under each of these widely different criteria. Indeed, success under one criterion may almost guarantee something less than success under one of the others.<sup>117</sup>

The acceptability of the Mediterranean initiative is the least in question. The first Intergovernmental Review Meeting of Mediterranean Coastal States, convened at Monaco in January 1973 to discuss the various components of the 1975 Action Plan, was attended by seventeen of the eighteen Mediterranean countries.<sup>118</sup> At the second meeting of the contracting parties, held at Cannes in March 1981, sixteen of the Mediterranean coastal states and the EEC agreed on a broad, three-year program to "Save their Sea".<sup>119</sup> In 1981, Turkey ratified the Barcelona Convention and two related protocols, bringing to seventeen the total number of contracting parties.<sup>120</sup> The 1980 Land-Based Protocol was signed immediately by twelve countries despite its considerable cost implications.<sup>121</sup> This record of acceptance of legal commitments is impres-

sive in a region where political antagonisms normally block cooperative undertakings.

The efficacy of the UNEP initiative in the Mediterranean is not, of course, so easily assessed in the short term. Perhaps the only reasonable test in the early years of the Action Plan is the number and diversity of studies, assessments, and monitoring exercises initiated by the states under the plan, or, more exactly, the number and diversity of such projects that would not have been initiated in the absence of an Action Plan for the region.<sup>122</sup> Since the latter can never be quantified with certainty, it may be necessary to judge the plan's efficacy solely by reference to the total number and nature of research projects generated, until such time as the findings of these projects can be evaluated and later actions, based on the findings, can be assessed. The best hope so far springs from the acceptance of the Land-Based Protocol. This agreement commits the contracting states to undertake massive long-term measures, which are likely to cost more than US\$15 billion.<sup>123</sup> UNEP believes that a commitment on this scale will have a significant remedial effect in the near future.<sup>124</sup>

It is also premature to judge the success of UNEP's Mediterranean initiative by the third criterion: as a model for initiatives in other regions. The other nine designated regions under the Regional Seas Programme are still at an earlier stage in formulating and implementing their Action Plans. In most of these regions questions have been raised about the comparability of the problems encountered and, thus, about the utility of a single model.<sup>125</sup> On the other hand, it generally is conceded to be scientifically unnecessary and economically wasteful to insist on approaching each region anew, as if it were totally unique in every respect. In practice, considerations of institutional convenience and good sense are likely to prevail over reservations based on scientific exactitude and political pride. Although there will be many regional variations of approach, and occasional important deviations from the Mediterranean Action Plan elsewhere, the original model is unlikely to be abandoned.

At the time of writing (1981), the most important test of the Mediterranean initiative lay in the financial arrangements for implementation. UNEP has always intended that the financial burden assumed by it in the early stages of formulation should be passed over, soon after adoption of the Action Plan, to the countries of the region.<sup>126</sup> At the Second Intergovernmental Review Meeting, held at Geneva in February 1979, the Mediterranean states agreed on establishing a US\$3.28 million trust fund, which would provide the major financial support for the regional program.<sup>127</sup> But this represented only half of the total operational budget for the program in 1979 and 1980, and since the Mediterranean is one of the more affluent of the ten designated regions, continuing reluctance there to accept full financial responsibility for its environmental program may bode ill for UNEP in its efforts elsewhere.<sup>128</sup>

## Red Sea and the Gulf of Aden

This region was the second of the designated ten regions to adopt an Action Plan, at Jeddah in January 1976, one year after the Mediterranean Action Plan received approval.<sup>129</sup> Coordination of the program has been entrusted to the Arab League Educational, Cultural and Scientific Organisation (ALESCO), and the cooperation of teaching and research institutions at Amman, Aden, Port Sudan, and Ghardaga has been secured.<sup>130</sup>

The relatively high degree of cultural and scientific homogeneity within this region, and its special vulnerability to pollution,<sup>131</sup> may explain its fairly rapid acceptance of the Action Plan. This plan has remained experimental and relatively undeveloped for several years, but a remodeled and more comprehensive Action Plan was submitted for approval to an ALESCO-sponsored conference of plenipotentiaries at Jeddah in November 1981, along with a regional convention and a protocol for cooperation in marine pollution emergencies.<sup>132</sup>

The potential effectiveness of the Action Plan will be clarified in the years ahead, after the findings of current environmental research have become available as the basis for future management in the region.<sup>133</sup> Special attention has been given to the problems of oil pollution and the need for training courses in Red Sea ecology. Because of its small size and the relatively high degree of ecological and hydrographic homogeneity, the Red Sea and Gulf of Aden region is an obvious candidate for a transnational approach to coastal zone management. In this sense, the Red Sea and Gulf of Aden might be regarded as a special opportunity—a model for inclusion—outside as well as inside the framework of UNEP's Regional Seas Programme.<sup>134</sup>

## Kuwait Action Plan Region (The Arabian-Persian Gulf)

This region, consisting of eight of the world's richest oil-producing countries,<sup>135</sup> adopted its Action Plan in April 1978, at a regional conference of plenipotentiaries held at Kuwait.<sup>136</sup> Since then the region has been referred to officially, within the framework of UNEP's Regional Seas Programme, as the Kuwait Action Plan Region. At the same conference the eight countries of the region also adopted two antipollution agreements,<sup>137</sup> set up a regional trust fund,<sup>138</sup> established a marine emergency mutual aid center to coordinate action by the coastal states against oil spills in the region,<sup>139</sup> and approved the proposal for establishing their own Regional Organization for the Protection of the Marine Environment (ROPME) to manage the Action Plan.<sup>140</sup> By the end of June 1979, both the Kuwait convention and the accompanying protocol had entered into force,<sup>141</sup> and the Council of ROPME held its first meeting in April 1981,<sup>142</sup> despite hostilities and other political upheavals in the region,

which might be expected to reduce the prospect of rapid progress in implementation of the plan.

As the wealthiest of the ten designated regions, the Kuwait Action Plan Region has perhaps the best opportunity to finance the implementation of the Action Plan on its own, independently of UNEP, and thus to secure a high degree of regional autonomy in the environmental management of the region. By the same token, it may be the least likely to serve as a model for other less affluent regions. Presumably, spin-off benefits are most likely to accrue in the neighboring region of the Red Sea and Gulf of Aden. As a region undergoing extraordinarily rapid industrialization,<sup>143</sup> the Kuwait Action Plan Region may also have some influence on, and be influenced by, similar Action Plan programming in the Mediterranean and East Asian seas.

### West Africa

After a number of preparatory activities between 1976 and 1978, a draft Action Plan for the West African region<sup>144</sup> was sent to the appropriate governments in October 1978, and a UNEP mission visited most of these governments early in 1979.<sup>145</sup> Consultations and negotiations culminated in the convening of a conference of plenipotentiaries in March 1981, at Abidjan in the Republic of the Ivory Coast. Invitations were sent to twenty coastal and island states of the region, which was described officially as West and Central Africa. The sixteen states attending adopted three documents: the Action Plan for the Protection and Development of the Marine Environment and Coastal Areas of the West and Central African Region; the Convention for Co-operation in the Protection and Development of the Marine and Coastal Environment of the West and Central African Region; and the Protocol Concerning Co-operation in Combating Pollution in Cases of Emergency. In many respects the Abidjan convention is the most highly developed of these regional conventions for the protection of the marine environment, having benefited from the experience gained in drafting the earlier Barcelona and Kuwait conventions.<sup>146</sup>

Despite a moderately high degree of ecological and hydrographic homogeneity off the northern two-thirds of the west coast of Africa, regional cooperation in the implementation of an Action Plan may prove to be difficult until the ferociously difficult boundary delimitation issues in the Gulf of Guinea have been dealt with.<sup>147</sup> This may be accomplished either through their resolution by means of a regional network of interrelated bilateral boundary agreements, or through a regional administrative arrangement to set these legal and political issues aside, at least temporarily, and to pool resources for more effective environmental management. In a congested marine region such as the

Gulf of Guinea, where the various zones of national jurisdiction have much in common with one another, ecologically and hydrographically, the expedient of setting aside their boundary problems may prove tempting to the coastal states.<sup>148</sup>

## Caribbean

Like the Red Sea and Gulf of Aden, the Caribbean is a tropical environment comprised of small countries with serious problems of resource deficiency.<sup>149</sup> Like the Gulf of Guinea, it is confronted by special difficulties in regional cooperation because of sensitive and difficult boundary delimitation issues in a congested area. Like the Mediterranean, it is a semienclosed sea apparently tailor-made for a holistic, single-unit approach to environmental management.<sup>150</sup> But more than any of these other regions, the Caribbean is an intricate network of fragile and distinctive but interlocking ecosystems. Moreover, the future management of the marine environment there has a particularly intimate relationship with the planning of national economies, and the islands of the region "dare not risk following patterns of development created for continental land masses."<sup>151</sup>

The scientific and institutional complexity of environmental management in the Caribbean has attracted a considerable amount of governmental and nongovernmental attention since 1976.<sup>152</sup> Extensive consultations between UNEP, the Economic Commission for Latin America (ECLA), other agencies, and the governments of the region, led to the formulation in 1979 of a Draft Action Plan.<sup>153</sup> At the same time a large number of supporting studies were undertaken and completed in time for submission to the Meeting of Government Nominated Experts to Review the Draft Action Plan for the Wider Caribbean Region, held at Caracas, Venezuela, early in 1980.<sup>154</sup> A revised Action Plan received intergovernmental approval in April 1981. A regional convention and protocol are expected to be adopted by the governments in 1982.

With so many countries belonging to the Caribbean region,<sup>155</sup> it is urgent to utilize all existing infrastructures and to follow initiatives proved successful elsewhere. For example, the Regional Seas Programme Activity Centre has been given responsibility for coordinating marine pollution prevention activities under this Action Plan, but the Secretariat of the Intergovernmental Oceanographic Commission Association for the Caribbean and Adjacent Regions (IOCARIBE) has already assisted in the preparation of a directory of marine research centers,<sup>156</sup> on the model of the Mediterranean prototype.<sup>157</sup> Like the Red Sea and Gulf of Aden, the Caribbean is a region threatened by oil spills, and this problem has received particular attention since 1978.<sup>158</sup> The

Action Plan, now adopted, is one of the most comprehensive and best prepared of all plans under the UNEP Regional Seas Programme. Much is expected of it, since it deals with a truly regional semienclosed sea like the Mediterranean.

### East Asian Seas

No marine region in the world presents more diverse problems of environmental management than East Asia.<sup>159</sup> Gulfs and peninsulas, sluggish estuaries, narrow straits, indented landmasses, and clusters of islands large and small—all contribute to a physical configuration of unequalled complexity, peopled by teeming populations of widely varying cultures, ideologies, and socioeconomic systems. In short, this region offers a formidable challenge to resource diplomacy and the making of environmental policy. Few, perhaps, would deny that East Asia is the most audacious of UNEP's designations under its Regional Seas Programme.

To reduce the problem to manageable size, it was recommended at an early stage that the region should be divided into a number of subregions: the Bay of Bengal, the Strait of Malacca, the Gulf of Thailand, the South China Sea, the Sea of Japan, the Yellow and East China seas, and the seas of the eastern archipelago.<sup>160</sup> Since then developments have been swiftest in the Southeast Asian sector (the South China Sea and adjacent waters), where the Association of South-East Asian Nations (ASEAN) joined with UNEP in a number of meetings designed to result in the approval by the five member states<sup>161</sup> of an Action Plan for the Southeast Asian region.<sup>162</sup> The rate of preparations in the South China Sea (ASEAN) subregion accelerated throughout 1980. In June 1980, UNEP organized at Baguio in the Philippines a Meeting of Experts to Review the Draft Action Plan for the East Asian Seas.<sup>163</sup> As in the Caribbean, this review meeting had the benefit of numerous supporting studies. As outlined in the following section, these and other preparations finally resulted in the official adoption of an Action Plan at an intergovernmental meeting of the five ASEAN states held at Manila in April 1981.<sup>164</sup> At the same time, voices are heard for a continuation of the effort to involve a larger number of East Asian countries in UNEP's Regional Seas Programme,<sup>165</sup> and outside the UNEP framework the energies of the Economic and Social Commission for Asia and the Pacific (ESCAP) and other agencies are also directed to that end.<sup>166,167</sup>

As in the Caribbean and the Red Sea and Gulf of Aden, a special interest has been taken in combating the dangers of oil pollution in general, as well as the special threat to the fragile mangrove ecosystems of the region.<sup>168</sup> As early as April 1976, at the Penang International Workshop on Marine Pollution in

East Asian Waters held under the joint auspices of IOC, FAO, and UNEP, oil pollution was identified as a first priority concern in the ship-congested area of the Straits of Malacca and Singapore.<sup>169</sup> Since then the three straits states of Indonesia, Malaysia, and Singapore have received the approval of IMCO for a vessel-traffic separation scheme in the area.<sup>170</sup>

### Southwest Pacific

As recently as 1977 it was UNEP's intention to treat the South Pacific as a single designated region under the Regional Seas Programme, an area even more extensive than the East Asian Seas.<sup>171</sup> But taking advantage of the intergovernmental infrastructure of the South Pacific Commission (SPC) in the southwestern sector,<sup>172</sup> stretching from Australia as far east as the Tuamotu Archipelago, UNEP has separated this sector from its southeastern counterpart and treated them as two distinct regional seas.<sup>173</sup>

Discussions on the need for an environmental policy for the Southwest Pacific were begun as early as 1974 by the SPC. Despite extreme difficulties in cultivating intergovernmental cooperation in such a widely diffused region, a steady effort has been made to prepare working papers for a high governmental level Regional Conference on the Human Environment in the Southwest Pacific Region, planned for March 1982. In June 1981 a Meeting of Technical Experts from twelve South Pacific states and territories reviewed reports submitted by eighteen countries of the region. They also studied thirteen topic reviews and a number of documents to be submitted to the Regional Conference, including a draft action plan for managing the natural resources and environment of the region and a draft declaration.<sup>174</sup> This effort, the South Pacific Regional Environment Programme (SPREP), is being undertaken under the joint auspices of four agencies: UNEP, ESCAP, SPC, and the South Pacific Bureau for Economic Cooperation (SPEC).<sup>175</sup>

### Southeast Pacific

This region encompasses the waters adjacent to the western coast of South America, stretching from Panama in the North to the southern tip of Chile. Since this area covers the entire spectrum of hydrographic conditions—from tropical, through subtropical and temperate, to subantarctic—it may be questioned whether it lends itself to a single systematic approach for environmental management.<sup>176</sup> Nevertheless, the prospect of a regional action plan has proved attractive to the five governments of the Southeast Pacific (Chile, Co-

lombia, Ecuador, Panama, and Peru), and an existing organization in the region, the Permanent Commission for the South Pacific (CPPS), has been ready and willing to play a central role in developing a program of research and regional agreements.<sup>127</sup> At a workshop held in Santiago, Chile, in November 1978, governmental representatives recommended that a number of measures be adopted. Since then a number of preparatory workshops have been held,<sup>128</sup> and an Action Plan for the Southeast Pacific was adopted late in 1981. This plan seems to be less influenced by the UNEP basic model than those envisaged for most of the other designated regions.

### **Southwest Atlantic**

Since this region was added to the Regional Seas Programme as recently as 1980, it is too early to trace any legal or institutional developments. A scientific workshop on the ocean environment of the region has been organized by the IOC as the first step toward providing a foundation for a plan.

### **East Africa**

This region is also too new a designation to have produced, at the time of writing, any concerted response to the problems of conservation of the ocean environment under UNEP auspices.<sup>129</sup> The fact that UNEP's head office is located in Nairobi may give a special prominence to action plan developments in East Africa and adjacent areas of the Indian Ocean.

### **Conclusions**

It seems to be five or even ten years too early to evaluate UNEP's Regional Seas Programme from an operational standpoint—politically, administratively, or environmentally. It may be appropriate, however, to comment on the program as a concept and as a framework for action.

Like so many other undertakings of the United Nations' bureaucracy, the Regional Seas Programme purports to be a "comprehensive" working out of a "systematic" approach to a many-faceted (meta-) problem. Such an effort is a familiar phenomenon in the recent history of public administration, both at national and international levels. Conceptually, the program could be viewed as an audacious combination of four ambitious institutional innovations—

1. A novel, maritime approach to *regional integration*;
2. A selective effort to decentralize what is essentially a global undertaking to protect and conserve the *human environment*;
3. An experiment in the promotion of *coastal zone management* through international cooperation; and
4. A brave attempt to combat the potential dangers of excessive nationalism inherent in *economic zone management*.

Each of these four modes of thinking about the Regional Seas Programme is capable of raising excited hopes, at least on the part of the conceptually inclined. But this may be the place to note the reservations of those who refuse to surrender uncritically to the prevailing fashion of mounting comprehensive, systematic, integrated responses to the immensely complex problems of policymaking, government, and administration which characterize the modern world. Some theorists in public administration, such as Charles Lindblom, are prepared to make the case for *incrementalism*, even for "muddling through," as a generally more effective approach to institutional problems of arduous complexity.<sup>180</sup> One might wish to preserve a degree of skepticism about the "human cost-effectiveness" of elaborate undertakings such as the Regional Seas Programme, even while acknowledging the existence of some degree of "regional incrementalism" through the negotiation of protocols designed to supply specific operational detail to the emerging system of official commitments. Putting this reservation aside, how should we assess the program's significance in the 1980s?

From the viewpoint of the regional integrationist, the excitement of the program lies in the hope that, focusing as it does on ocean areas of common interest, it represents a new and potentially successful approach to the building of regional communities. After all, it might not be unduly fanciful to suppose that the future of ocean-oriented regionalism has more to show, in terms of human cooperation, than the history of land-bound regionalism. If so, an environmental framework such as UNEP's may be appropriate to the prosecution of such an effort.<sup>181</sup>

As a matter of intention, of course, the Regional Seas Programme is an attempt to implement the Stockholm Action Plan for the protection and conservation of the human environment. Adopted by the U.N. Conference on the Human Environment at Stockholm in 1972, that plan and the accompanying documents provided the original guidance for UNEP.<sup>182, 183</sup> Yet, although the plan made frequent references to the role of regional arrangements in international environmental affairs, none of the Stockholm documents attempted to prescribe a regional strategy for UNEP. Indeed, UNEP—or more properly its Governing Council<sup>184</sup>—seems to have been given a free hand in determining

the need for decentralization in its programming. Given UNEP's characterization of its role as "catalytic," it should be interesting to compare the Regional Seas Programme with the projects of other coordinating bodies within the U.N. family, and even with those bodies entrusted with a more "directive" mandate. If this effort to regionalize the Stockholm movement is generally successful, it may have a significant impact on the development of international environmental law and on the formation of international environmental organizations.

Around the time of the Stockholm experiment in global environmentalism, a comparably integrative approach was being adapted at the national level to complex problems of *coastal zone management*.<sup>185</sup> But, for some coastal problems, the only feasible national approach may be something less than holistic, "comprehensive," or "systematic." An integrative approach to some of these problems may be possible or desirable only at the international level, especially in the case of small countries located in a congested region whose marine environment is characterized by intricate ecological interdependencies, such as the Mediterranean, the Caribbean, the Gulf of Guinea, and other partially enclosed seas. Even though the Regional Seas Programme is not officially presented as a response to this kind of problem, it overlaps sufficiently with the environmental problems special to the land-sea interface to be judged, at least partially, from this vantage point. In most regions it is now recognized that the treatment of marine pollution depends above all on achieving effective control over the land-based sources of the problem, and that progress in this sector at home may depend on the existence of a well-conceived, regionally appropriate framework of ideas and intentions.

Furthermore, it should be kept in mind that the years of evolution for UNEP's Regional Seas Programme will also be the years of national efforts to develop ocean management programs within extended limits of coastal jurisdiction in the wake of UNCLOS III.<sup>186</sup> A legitimate concern exists that many coastal states will be unable to mount effective national programs on their own initiative, that their best efforts to discharge their environmental responsibilities within their exclusive economic zone will be defeated by the very extensiveness of these new jurisdictional limits. These concerns are matched by fears that some coastal states may be moved by nationalist sentiment to use boundary and other resource issues to obstruct efforts to produce environmental cooperation in the region. But the Regional Seas Programme itself may be the best evidence in support of the more optimistic view that the possession of a 200-mi economic zone will, sooner or later, force most coastal states to develop environmental management measures, and that the best way of doing so will be found in regional consultation and cooperation, especially for states sharing a semienclosed sea or a similar geographical configuration.

Finally, how should we interpret the significance of the designations applied within the program? Of the ten designated regional seas, none is a natural ocean basin, but two (the Southwest and Southeast Pacific regions) together are approximately coextensive with an ocean basin (the South Pacific).<sup>187</sup> Five of the remaining six are either semienclosed seas (the Mediterranean and the Arabian-Persian Gulf) or consist mostly of a semienclosed sea (West African region, including the Gulf of Guinea), or consist of two neighboring semienclosed seas (the Caribbean and the Red Sea and Gulf of Aden).<sup>188</sup> What, one might ask, is a sensible "unit" for managing the ocean environment? The tentative answer might be put in negative terms—

1. an area that is not too extensive;
2. an area that is not too ecologically heterogeneous; and
3. an area that is not too politically inactive, competitive, or conflict prone to discharge its environmental responsibilities effectively on a collective and cooperative basis.

Judged by these three criteria (given equal weighting), the Mediterranean seems the "safest" designation, and despite continuing difficulties and frustrations commensurate with the scale of the undertaking, the Mediterranean Action Plan must already be regarded as a relatively impressive experiment in regional cooperation. Each of the other nine designated regions seems to present an even more formidable set of obstacles to overcome before any fair judgment can be passed on the utility of the relevant legal and institutional developments. "Success" is not, of course, achieved by the mere approval of an Action Plan, or even by the adoption of a legally binding, but generally worded, convention. Management of the ocean environment, despite its appearance as a context of common interest or mutual convenience, may prove another forum for symbolic diplomacy. Cosmetics and substance will have to be distinguished with care in the 1980s, as regional responses to the program unfold.

## **THE SOUTH CHINA SEA: EVOLUTION OF THE UNEP ACTION PLAN**

### **The Background**

Even with the scaling down of the East Asian Seas to a more manageable subregion, the South China Sea, the Action Plan must fit the requirements of a large and busy area with special, if not unique, ecological characteristics.

The South China Sea is fairly actively researched nowadays—more so than most other marine regions—though not as much as the Mediterranean.<sup>189</sup> For scientists an Action Plan represents, above all, a challenge and opportunity for regional cooperation in *research*. But in this study, focusing on legal and institutional developments, special attention should be given to the history of consultations and negotiations leading up to the adoption of the Action Plan by the five ASEAN countries in 1981.

It is not possible, or perhaps necessary, for this author to study this history in great detail. It may be enough for present purposes to identify the most important inputs and to review the critical developments of the Action Plan in the final year of preparation, from June 1980 to December 1981.

As to the range of inputs, one has to recall that although UNEP inherited the coordinative role in these preparations, many agencies shared in the development of the foundations of regional cooperation in the protection of the marine environment in this region. Some of these important inputs arose from regional activities by global organizations, such as UNESCO, IOC, FAO, IMCO, and the World Health Organization (WHO); others came from organizations that are regional in scope but with responsibilities and capabilities that extend far beyond the South China Sea, such as the Indo-Pacific Fisheries Council (IPFC), ESCAP, and the Committee for Co-ordination of Joint Prospecting for Mineral Resources in Asian Offshore Areas (CCORP); and others were, of course, derived from ASEAN bodies (such as the Meetings of the ASEAN Experts on the Environment), whose concerns are those of its five member states, which make up some but not all of the littoral states of the South China Sea.

The diversity of inputs is seen from the following list of preparatory work and activities:

1. IOC/FAO(IPFC)/UNEP International Workshop on Marine Pollution in East Asian Waters, Universiti Sains Malaysia, Penang, 7-13 April 1976;
2. Indo-Pacific Fisheries Council (IPFC): Third Session of the IPFC Working Party on Aquaculture and Environment, Bangkok, 31 August-3 September 1976;
3. IMCO/UNEP Oil Pollution Contingency Planning for the Straits of Malacca and Singapore Region—Preparatory Stage, November 1976;
4. ASEAN Council on Petroleum (ASCOPE): First Petroleum Conference and Exhibition, Jakarta, 11-13 October 1977;
5. ESCAP/UNEP Intergovernmental Meeting on Environmental Protection Legislation, Bangkok, 4-8 July 1978;

6. Committee for Co-ordination of Joint Prospecting for Mineral Resources in Asian Offshore Areas (CCOP); Fifteenth Session, Singapore, 24 October-6 November 1978;
7. UNESCO Regional Seminar on Human Uses of the Mangrove Environment and Management Implications, Dacca, Bangladesh, 4-10 December 1978;
8. ASEAN Expert Meeting on the Environment, Jakarta, 18-20 December 1978;
9. Fifth Meeting of the ASEAN Experts Group on Marine Pollution, Manila, 7-9 February 1979;
10. UNESCO/IOC Workshop on the Western Pacific (WESTPAC), Tokyo, 19-20 February 1979;
11. UNEP Mission to the East Asian seas region to enquire about the feasibility of an Action Plan, March 1979;
12. Second Meeting of the ASEAN Experts on the Environment, Penang, 17-20 September 1979;
13. WHO/UNEP Regional Seminar on Environmental Health Impact Assessment, New Delhi, 8-12 October 1979;
14. Directory of Indian Ocean Marine Research Centres, National Institute of Oceanography, India, and UNEP, 1979;
15. UN/UNEP Workshop on Coastal Area Development and Management, Manila, 3-13 December 1979;
16. FAO/UNEP Expert Consultation on Impact of Pollution on the Mangrove Ecosystem and its Productivity in South East Asia, Manila, 4-8 February 1980;
17. FAO/UNEP Expert Consultation on Assessment of Oil Pollution and its Impact on Living Aquatic Resources in South East Asia, Manila, 11-15 February 1980;
18. ESCAP/(ECU)/UNEP Comparative Study on National Legislation for Protection of the Marine Environment in the ASEAN Subregion, January-March 1980;
19. ESCAP(CCOP)/UNEP Ad Hoc Group Meeting on the Marine Environment, Bangkok, 20-25 March 1980;
20. IOC (UNESCO)/WESTPAC Workshop on Coastal Transport of Pollutants, Tokyo, 27-31 March 1980;
21. Third Meeting of the ASEAN Experts on the Environment, Manila, 19-23 May 1980;
22. UNESCO/UNEP Expert Consultation on River Inputs to Southeast Asian Seas, Jakarta, 2-4 June 1980;
23. ASEAN Workshop on Nature Conservation of the ASEAN Experts on the Environment, Denpasar, 15-19 September 1980;

24. IMCO/UNEP International Workshop on the Prevention, Abatement and Combating of Pollution from Ships in East Asian Waters, Manila, 3-8 November 1980;
25. First Meeting of UNESCO/IOC (WESTPAC) Task Team on Marine Pollution Monitoring Using Commercially Exploited Shellfish as Determinants, Manila, 26-30 January 1981;
26. UNESCO/IOC (WESTPAC) Workshop on Marine Biological Methodology, Tokyo, 9-13 February 1981;
27. Fourth Meeting of the ASEAN Experts on the Environment, Singapore, 8-10 April 1981; and
28. additional studies, suggestions and proposals received from the United Nations system.<sup>190</sup>

Although item 28 may represent a considerable volume of extraregional inputs, it is evident that the preponderant weight has been given to research and experience that has developed within the East Asian region. These inputs are acknowledged to be the "basis" for the Action Plan.<sup>191</sup>

### **The First UNEP Meeting of Experts**

In June 1980, several years of study and discussion in these various forums led to the first formal meeting of the mechanism established by the five ASEAN countries to assess the preparatory work: the Meeting of Experts to Review the Draft Action Plan for the East Asian Seas held at Baguio in the Philippines between 17 and 21 June 1980.<sup>192</sup> By this stage the now-standard UNEP four-component model had been incorporated into the draft: environmental assessment, environmental management, legal component, and institutional and financial arrangements. Special reference is made here to the third and fourth components.

The section on legal requirements has three different purposes:

- (1) it expresses the government's agreement on the need for an East Asian Regional Convention for the Protection of the Marine Environment from Pollution, and for various protocols "from a specific source, such as land-based pollution and pollution from exploration and exploitation of the seabed, for the establishment of specially protected areas and for cooperation in combating pollution in cases of emergency";<sup>193</sup>
- (2) it appeals to the governments to ratify and implement a number of relevant international conventions

- (a) the 1954 International Convention for the Prevention of Pollution of the Sea by Oil, and its amendments;
  - (b) the 1969 International Convention on Civil Liability for Oil Pollution Damage;
  - (c) the 1971 International Convention on the Establishment of an International Fund for Compensation of Oil Pollution Damage;
  - (d) the 1972 Convention on Prevention of Marine Pollution by Dumping of Wastes and Other Matters; and
  - (e) the 1973 International Convention for the Prevention of Pollution from Ships (as modified by Protocol of 1978); and
- (3) it advocates the maintenance of an up-to-date compilation of the national laws of all states concerned, that are relevant to the protection of the marine environment and emphasizes the need for technical assistance and advice in drafting appropriate national legislation for the effective implementation of the regional convention and other relevant international and regional agreements.

The section on institutional and financial arrangements underlines the need to use national capabilities to the greatest possible extent, and to strengthen the relevant national institutions where necessary to facilitate their effective participation in the various programs envisaged in the Action Plan. A central coordination unit is seen as necessary to oversee the implementation of the Action Plan. It is made explicit that the financial contribution by the U.N. system will decrease progressively as the governments of the region assume financial responsibility for the program, which is intended ultimately to become self-supporting after the appropriate training, equipment, and other forms of assistance have been provided.<sup>194</sup>

Several important decisions and recommendations were made at Baguio.

### *Environmental Assessment*

It was felt that priority should be given to environmental assessment activities in the Action Plan, in view of the lack of adequate and comparable data in the region. Objection was raised by some delegations to the existing program priorities on the ground that "assessment should not be oriented toward pure research objectives but rather should generate results and recommendations that would lead to immediate, concrete management activities."<sup>195</sup> After different views were expressed on assessment program priorities, it was decided to set priorities only after the operational details had been developed.<sup>196</sup> Also, studies of "oceanographic phenomena" were included as a new component in the initial phase of the Action Plan.<sup>197</sup>

### *Environmental Management*

Special importance was attached to *training* for achieving more effective management and pollution control in coastal areas.<sup>198</sup> In view of the work being done by IPFC and the South China Sea Fisheries Programme (SCSP), no specific cooperative project related to fishery management or aquaculture was included in the Action Plan.<sup>199</sup> Importance was attached to designating specially protected coastal areas and to protecting endangered species of regional significance; also agreed on was a project on the dumping of hazardous wastes, although it was conceded that more information from IMCO was required on the status of global developments in this context.<sup>200</sup>

### *Legal Component*

The meeting agreed it was not feasible to adopt concurrently with the Action Plan a regional convention and the accompanying protocols. Rather, it was recommended that the plan should be adopted formally as soon as practicable and that the negotiation of a convention should be taken up after further consideration at the expert level. With reference to the draft protocol prepared by IMCO, it was recommended that further thought should be given to the feasibility of developing an "independent regional agreement that would address the issues related to co-operation in cases of pollution emergency, taking into consideration the existing ASEAN contingency plan."<sup>201</sup> The legal component, it was agreed, should be the subject of a consultant's study.<sup>202</sup>

### *Institutional and Financial Arrangements*

UNEP was encouraged to continue exercising its coordinating role for the completion of the Draft Action Plan "until such time as the Governments took a final decision on the required institutional arrangements and a central coordinating unit was designated."<sup>203</sup> It was felt that further action was necessary to identify and explore sources for funding the plan.<sup>204</sup>

More generally, note two other decisions of importance. First, in light of the desire to extend the Action Plan at a later stage to other states of the East Asian Seas region, it was agreed that the term "East Asian Region" should be retained in the title of the Action Plan, and that "a reference to the option of extending in the future the geographic scope of the region should be reflected in the introduction of the action plan."<sup>205</sup> Second, it was agreed that immediately after the Baguio meeting the Draft Action Plan should be submitted by UNEP to the five participating governments "for their consideration and necessary action, including the designation of a national focal point at the government level to co-ordinate all national activities related to the action plan."<sup>206</sup>

## The ESCAP Regional Meeting on the Protection of the Marine Environment and Related Ecosystems

The Economic and Social Commission for Asia and the Pacific (ESCAP), at its thirty-fifth session held at Manila in March 1979, recommended that protection of the marine environment and related ecosystems should constitute a priority area on which ESCAP should concentrate its efforts. With that in view ESCAP, in cooperation with the Swedish government, through the Swedish Environmental Protection Service (SEPS), undertook a series of preparatory missions and national seminars in thirteen countries of the region during the period 1979–1980, as a part of the regional project on the protection of the marine environment and related ecosystems in Asia and the Pacific. Following the preparatory missions and national seminars, a Regional Meeting on the Protection of the Marine Environment and Related Ecosystems in Asia and the Pacific was held at Bangkok from 4 to 8 August 1980.<sup>207</sup>

All five of the ASEAN countries attended along with representatives of ten other countries belonging to the ESCAP region: Bangladesh, China, Hong Kong, Japan, Pakistan, Papua New Guinea, the Republic of Korea, Sri Lanka, the Soviet Union, and Vietnam. Representatives of UNEP, FAO, and IMCO, as well as of several nongovernmental organizations, also attended.

This exercise was quite separate from the UNEP/ASEAN effort to develop an Action Plan for the East Asian Seas—or more properly the South China Sea. Many obvious factors prevent such a group from advancing rapidly toward any collective regional effort at the management of the marine environment: the enormous size of the macroregion represented (much too large, presumably, to represent a “unit” of environmental management); the number, diffuseness, and political diversity of the countries participating; and the great disparities among them in managerial capabilities. Yet, for the ASEAN participants this regional meeting represented an alternative perspective on the problems of ocean management and conservation, as well as an alternative forum with a different set of dynamics. The results of a meeting at this macroregional level might be expected to influence both ASEAN and non-ASEAN views on the feasibility of extending the UNEP Action Plan beyond the South China Sea to other sectors of the East Asian Seas.

More specifically, the purpose of the ESCAP regional meeting was to pool the results of three very useful comparative studies which had been carried out by the commission,<sup>208</sup> so as to provide a broad foundation for recommendations on a number of “action-oriented programmes at the national as well as at the subregional and regional levels.”<sup>209</sup> But, inevitably, a meeting of this size and nature was primarily an exchange of information. Much of the information obtained was of fundamental importance for determining appropriate action at any level. Not the least of the benefits of this exercise was that it rep-

resented for some participating countries their initiation into some of the possibilities of regional cooperation, if not at the ESCAP macroregional level, then at a lower regional or subregional level.

### **The Second UNEP Meeting of Experts**

At the time of the ESCAP regional meeting held at Bangkok in August 1980, several members of the ASEAN/UNEP Meeting of Experts met separately to consult on future planning by the ASEAN countries. As a result a revised assessment and management program was drafted.<sup>210</sup> This created the need for a Second Meeting of Experts to Review the Draft Action Plan for the East Asian Seas, which met at Bangkok 8-12 December 1980. Meanwhile, a legal consultant, in cooperation with the UNEP secretariat, had prepared a study on the legal aspects of the Draft Action Plan, as requested at the first meeting,<sup>211</sup> and on suggested institutional-financial arrangements.<sup>212</sup> Among the other documents provided was a workshop report on the problem of ship-generated pollution in East Asian waters.<sup>213</sup>

At this meeting efforts were directed at the final preparation of the Draft Action Plan in a form likely to be acceptable to all five governments.

#### *Environmental Assessment*

On the basis of national priorities indicated by each delegation, the meeting agreed on an abridged list of regional priority projects under three broad headings: oceanography, pollutants (oil and nonoil), and ecosystems (mangroves and corals).<sup>214</sup>

#### *Environmental Management*

Similarly, this component of the Action Plan was limited to three key issues: oil pollution control, waste management, and information exchange. Two other elements, environmental impact assessment and nature conservation, were excluded from the plan, since they were already included in the ASEAN Environment Programme (ASEP).<sup>215</sup>

#### *Legal Component*

Participants agreed that the executive director of UNEP should be requested to convene a regional intergovernmental conference, before the Ninth Ses-

sion of the UNEP Governing Council in May 1981, to review and adopt the Action Plan. There was consensus the Final Act should incorporate, as appendices, the plan and any resolutions adopted. Three draft resolutions on the need to initiate negotiations—for a regional convention, interim institutional arrangements, and financial arrangements—were prepared. The language addressed to the legal component in the Action Plan was revised slightly in a way to suggest that the regional convention negotiated would be accompanied or followed by a number of protocols, not only for cooperating in combating pollution in emergencies and for controlling pollution from specific sources (eg, land based and seabed related), but also for establishing and managing specially protected areas.

#### *Institutional and Financial Arrangements*

No significant change was made in this section of the Action Plan. The meeting recommended that UNEP be entrusted with the interim arrangements for the implementation of the Action Plan. In response, the UNEP secretariat proposed that these arrangements should be managed by a program coordinator working from the UNEP Regional Office for Asia and the Pacific in Bangkok under the direct supervision and with the cooperation of UNEP's Regional Seas Programme Activity Centre in Geneva.<sup>216</sup>

### **The Intergovernmental Meetings**

Finally, the five ASEAN governments came together formally at Manila between 27 and 30 April 1981 and adopted the revised Action Plan.<sup>217</sup>

In the final version of the Action Plan, the five ASEAN states agreed to participate in a coordinated environmental assessment program that will have the following priorities:

1. Assessment of the oceanographic phenomena with particular reference to hydrography, water masses, and water circulation, and their effects on pollution dispersion patterns, including detailed oceanographic surveys with special emphasis on
  - observation of maritime meteorological phenomena and their influence on water movements;
  - study of oceanographic features with emphasis on hydrography, water masses, water circulation, and their effects on pollution dispersion patterns, and
  - establishment of oceanographic reference stations.

2. Assessment of oil pollution and its impact on living aquatic resources, including
  - surveys of oil pollution sources and monitoring of oil pollution in the marine and coastal environment; and
  - cooperative research on oil and oil dispersant toxicity.
3. Assessment of nonoil pollutants, especially metals, organics, nutrients, and sediments, and their environmental impacts, including
  - surveys of rivers and of land-based sources of pollution;
  - study of concentration levels and trends; and
  - study of pollution effects on the marine environment.
4. Assessment of the impact of pollution on and habitat degradation of mangrove and coral ecosystems, including
  - surveys of the state of mangrove and coral reserves; and
  - study of the effects of pollutants and destructive factors on mangrove and coral communities and related fisheries.

It was also agreed that, in "the possible future expansion" of the environmental assessment program, the following components "may be considered," at a lower level of priority:

1. Assessment of the environmental impact of offshore seabed exploration and exploitation, including petroleum, mining, and dredging.
2. Assessment of thermal pollution in coastal waters and its impact on marine biota.
3. Assessment of the nature and magnitude of pollution reaching the marine environment through the atmosphere.<sup>218</sup>

Agreement on priorities proved to be difficult throughout the negotiations, partly because of the relevance of these issues to the question of how the costs of implementation would be shared among the five participating countries. It did prove impossible in Manila to reach consensus on certain institutional and financial arrangements, such as the allocation of funds. Accordingly, a second intergovernmental meeting was held at Bangkok in December 1981.

The Bangkok meeting addressed itself mainly to the various options for institutional and financial arrangements required for the implementation of the East Asian Seas Action Plan. Continuing difficulty was experienced in extracting sufficient monetary commitments from the participating governments to permit the initiation of the Action Plan at the beginning of 1982. As of that date, it seemed likely that the interim period prior to the actual implementation of the plan would have to be prolonged for several months until sufficient funds could be raised to permit the establishment of the East Asian Regional Trust Fund.<sup>219</sup>

## OTHER RELEVANT REGIONAL DEVELOPMENTS

The problems related to the protection of the marine environment in the South China Sea region fall into three overlapping but distinct categories: (1) the conservation of marine species (ie, the management and conservation of commercial fishery resources, wildlife, and their habitats and breeding grounds); (2) the prevention and control of marine pollution (caused chiefly by vessels, offshore platforms, and land-based activities); and (3) coastal zone management. Each of these approaches has its own features. Each represents a distinct point of departure, a definable framework of objectives, suggesting a certain kind of emphasis and a particular range of legal and institutional techniques that might be available. At the regional level, however, legal and institutional responses can be described sufficiently within the first two of these categories.

### Conservation of Marine Species

#### *FAO and IPFC*

The Food and Agriculture Organization (FAO) was the first specialized agency to be established under the United Nations. Since the beginning its Fisheries Division has operated under unusually difficult constraints. Invariably, the Fisheries Division has been regarded as lower in priority and status than the other divisions of the organization. Although the problem of funding FAO-sponsored fishery development projects has eased somewhat in recent years due to the cooperation of United Nations Development Programme (UNDP) and other sources, the story of the FAO Fisheries Division has very largely been one of inadequate resources in relation to its mandate.<sup>220</sup> The frustrations of the division have been especially severe in conservation, management, and research areas, regarded as its basic and long-range responsibilities, because it has been obliged as a matter of priority to spend most of its inadequate resources on helping national governments with their immediate problems of fishery development. For more than thirty years these same frustrations have been reflected in regional fishery bodies sponsored by FAO.

In August 1947, at its third session, the FAO conference recommended that FAO establish regional bodies for scientific exploration of fishery resources. Of seven marine regions put forward as candidates for such bodies, one was the Southwest Pacific and Indian Ocean.<sup>221</sup> The boundaries of this region, like the others, were to be defined by the governments that chose to respond to this recommendation. Within a few months, eight countries—Burma, China, France, India, the Netherlands, the Philippines, the United Kingdom, and

the United States—had responded by becoming parties to the Agreement for the Establishment of the Indo-Pacific Fisheries Council (IPFC).<sup>222</sup> Before the end of 1948, the IPFC was in operation, the first regional undertaking of FAO.

The founding members of IPFC chose to define its area broadly, extending from Easter Island in the east to the African coast in the west, and from the Asian mainland in the north to south of New Zealand and Australia and slightly south of the Tropic of Capricorn in the coast of East Africa. By mid-1980, only nineteen countries had become members of IPFC,<sup>223</sup> although it served a region consisting of more than fifty coastal or island territories—and two-thirds of the world's population. The relatively small membership of IPFC should be compared with the much larger membership (thirty-nine) of its sister organization, the Indian Ocean Fisheries Commission (IOFC), despite the fact it serves a less extensive geographical area.<sup>224</sup>

The main objective of IPFC is to assist its member countries in the "development and proper utilization of living aquatic resources."<sup>225</sup> Its functions are:

- (1) to identify problems;
- (2) to recommend research and development projects;
- (3) to encourage and coordinate;
- (4) to effect standardization;
- (5) to undertake research and development projects;
- (6) to assist in the procurement of essential materials;
- (7) to publish;
- (8) to report on particular problems; and
- (9) to report to FAO.<sup>226</sup>

It is an advisory body lacking any powers of regulation—unlike some regional fishery bodies, such as the Inter-American Tropical Tuna Commission (IATTC); and it is entirely dependent on the financial support of FAO.

In its first five years IPFC was concerned mainly with fact-finding and appraisal, but in the following years a number of development programs were formulated. In the present context, the most relevant of these was the South China Sea Fisheries Development and Coordinating Programme (SCSP), conceived by the IPFC at its thirteenth session in 1968. Sponsored by Indonesia, the Khmer Republic, Malaysia, the Philippines, Singapore, Thailand, Hong Kong (U.K.), and the Republic of Vietnam, and executed by FAO with UNDP financial support, this program was begun in 1974, in part to "encourage rational stock management policies,"<sup>227</sup> but also to facilitate establishing a suitable subregional coordinating mechanism for the South China Sea states.

With this aim in mind, the IPFC decided in 1979 to establish a Committee for the Development and Management of Fisheries in the South China Sea.<sup>228</sup> This has been promoted as an innovation which is "in accordance with the decentralization policies laid down recently by the governing bodies of FAO."<sup>229</sup> Intended to be of much wider scope than the SCSP, this committee is modelled rather on subregional committees established by the IOFC.<sup>230</sup> Envisaged as "the fisheries management and development arm" of the IPFC, it could be "the instrument for cooperative action by all the nations of the South China Sea area, in all aspects of fisheries."<sup>231</sup> On the face of things, this committee could do much to advance the status of concerted fishery conservation policies in the South China Sea.<sup>232</sup>

This is, however, a minor development in a much more ambitious, global effort by FAO to effect a radical restructuring of regional fishery commissions around the world.<sup>233</sup> This restructuring strategy is, of course, a response to the questions that have been raised about the future role of such commissions in the new era, dominated by the emergence of 200-mi exclusive economic zones or exclusive fishing zones in all regions.<sup>234</sup> "What IPFC needs now," it has been suggested, "is a strengthening of its presence throughout the area it is serving."<sup>235</sup> Strengthening may depend not only on the creation of new subregional mechanisms, such as the committee for the South China Sea, but also on the restructuring of the overall institutional framework for such mechanisms. With this in mind the South China Sea countries may wish to weigh the advantages and disadvantages of having their own subregional fishery conservation body as part of a larger framework than IPFC, such as an amalgamation of IPFC and IOFC.<sup>236</sup>

### *SEAFDEC*

At the Third Ministerial Conference for the Economic Development of Southeast Asia (MEDSEA), held at Singapore in April 1968, ten nations agreed on establishing the Southeast Asian Fisheries Development Centre (SEAFDEC).<sup>237</sup> Shortly afterward a secretariat, headed by a director-general, was based in Bangkok to coordinate the functions and programs of the center. Today, the center has three departments: the Marine Fisheries Training Department in Bangkok, the Marine Biology Department in Singapore, and the Aquaculture Department at Tigbanan, Iloilo, on the island of Panay in central Philippines.<sup>238</sup>

As its name suggests, SEAFDEC is interested in fishery development rather than conservation. Indeed, its approach to fishery management is almost anti-conservationist. But SEAFDEC carries out fishery-related research that has conservation as well as development implications.<sup>239</sup>

## Prevention and Control of Marine Pollution

### *IMCO*

The Intergovernmental Maritime Consultative Organization has been concerned actively with marine pollution since the 1950s,<sup>240</sup> but this concern has been limited to vessel-source pollution. Moreover, as a global agency concerned with the environmental impact of the entire world shipping industry, its regional activities have been modest. But in recent years there has developed a trend toward the establishment of regional centers for monitoring ship-generated hazards to the marine environment. The first such center, established in Malta under the Mediterranean Action Plan, is operated by IMCO personnel in cooperation with UNEP. Similar centers are likely to be established in other regions in the 1980s, perhaps as part of a system of multipurpose regional research and training centers envisaged at UNCLOS III.<sup>241</sup> Already, a reasonable prospect exists that such a regional center may be established under joint ESCAP/UNEP/IMCO auspices for Southeast Asia.<sup>242</sup>

IMCO also seems to be acquiring a regional role in the prevention and control of marine pollution through its authority to grant approval to proposals for vessel-traffic control systems put forward by its members.<sup>243</sup> A traffic separation scheme for the Malacca Strait and adjacent waters received approval in 1980 after a number of lighthouses and other necessary facilities had been installed in the region.<sup>244</sup> Still another regional role for IMCO may evolve as a result of the provision at UNCLOS III for designated "special areas."<sup>245</sup> Much will depend on the kind of relationship that can be cultivated between IMCO and environmentally vulnerable coastal states.<sup>246</sup>

### *ASEAN*

As noted above, UNEP's efforts to promote an Action Plan for national and regional action under its Regional Seas Programme have focused, in the current phase, on the ASEAN countries.<sup>247</sup> These five nations have already taken a lead in regional consultation and coordination, especially in the effort to combat the threat of ship-generated oil pollution in the Malacca Strait and adjacent waters.<sup>248</sup>

The first effort to respond internationally to the marine pollution problem in the region was the International Workshop on Marine Pollution in East Asian Waters, organized jointly by UNEP, FAO, and UNESCO in April 1976. Among the major projects discussed, three were singled out by the ASEAN countries as having special priority: (1) assessment of oil pollution and its impact on living resources; (2) effects of agro-industrial wastes on the coastal ecosystem; and (3) the impact of pollution in the mangrove ecosystem

and its productivity.<sup>249</sup> Since then the ASEAN countries have been particularly active, both with and without UNEP collaboration, in attempting to deal regionally with the first of these problems.

For example, the ASEAN Experts Group on Marine Pollution has produced an ASEAN Contingency Plan for the Control and Mitigation of Marine Pollution.<sup>250-251</sup> Indonesia, Malaysia, and the Philippines have gone further, with the assistance of IMCO and UNEP, and developed an Action Plan for the Celebes Sea, which is intended to reflect the underlying philosophy of the ASEAN Contingency Plan.<sup>252</sup> In June 1979, the First ASEAN Working Group Meeting on Marine Sciences identified marine pollution problem areas requiring strong scientific inputs through regional cooperation.<sup>253</sup>

In recent years much hope has been invested in the prospect of collaboration between UNEP and ASEAN as a mode of regional cooperation for the prevention and control of marine pollution. This effort has not been without difficulty. The First Meeting of the ASEAN Experts on the Environment, held in December 1978, recommended the creation of a Sub-Committee on the Environment under the ASEAN Committee in Science and Technology. This recommendation failed to win approval at the Fifth Meeting of the ASEAN Standing Committee held at Bali in June 1979, but the Standing Committee did approve, in principle, of ASEAN-UNEP cooperation in the areas identified by the ASEAN Experts on the Environment. At its Second Meeting, held at Penang in September 1979, the ASEAN Experts on the Environment reviewed UNEP activities in the region and included the ASEAN Regional Seas Programme among its four "urgent priority areas."<sup>254</sup> As a result, the UNEP-ASEAN nexus was assured, and, as seen above, this mode of cooperation resulted in the adoption in 1981 of the UNEP Action Plan for the East Asian region by the five ASEAN governments.<sup>255</sup>

### *ESCAP*

The importance of incorporating environmental factors into development planning has been emphasized repeatedly by the UNEP Governing Council.<sup>256</sup> With the support of the U.N. Economic and Social Council (ECOSOC), the Economic and Social Commission for Asia and the Pacific has recently begun to accentuate the development-and-environment theme in its development strategy for the 1980s.<sup>257</sup> In particular, ESCAP's Environmental Co-ordinating Unit (ECU) in Bangkok has been cultivating a collaborative relationship with UNEP in the ESCAP region.<sup>258</sup> Collaboration between the two agencies has concentrated, in part, on efforts to promote the Action Plan for the Protection and Development of the Marine Environment and Coastal Areas of the Southeast Asian Region initiated under the UNEP Regional Seas Programme. ESCAP's marine-related environmental work gives special at-

tention, therefore, to the five ASEAN countries, since they are the initial sponsors of that plan; and, to that extent, the problems of marine pollution prevention and control, which are the special concern of ASEAN, tend to be given priority by ESCAP also.<sup>259</sup>

As a regional organization with a large and diverse membership,<sup>260</sup> ESCAP has geographical responsibilities for environmental protection that go far beyond the South China Sea, but since 1978 it has been possible for ESCAP to develop a special interest in the protection of the marine environment and related ecosystems through a project funded by the Swedish International Development Agency (SIDA) and supported by the Swedish Environmental Protection Service (SEPS) and other departments. The immediate objectives of this project were: (1) to organize a series of national seminars in the developing countries of the ESCAP region having significant problems of marine pollution; (2) to convene a regional seminar to examine in depth the emerging technologies and legislative measures; and (3) to organize a study tour in Sweden with a view to familiarizing the participants with the technology and practical approaches adopted in that country for combating marine pollution.<sup>261</sup> A second phase of the project, comprising long-term follow-up activities, may include the establishment of a regional training center for marine pollution control and related skills.<sup>262</sup>

### *IOC*

The Intergovernmental Oceanographic Commission of UNESCO conducts a number of regional research programs around the world.<sup>263</sup> One of these is executed by the Working Group for the Western Pacific (WESTPAC). WESTPAC's main activities fall into three categories, including Marine Biology and Pollution.<sup>264</sup> It is hoped that FAO (and the IPFC) and the UNEP Regional Seas Programme will cooperate in this work.<sup>265</sup>

## NATIONAL RESPONSES

### **Introduction**

At the national level, some legal and institutional initiatives for the protection of the marine environment tend to be taken within an integrated framework of developmental and environmental considerations related to the use and management of the coastal zone.<sup>266</sup> In the South China Sea region the coastal zone management approach to the protection of the marine environment is just beginning to be implemented by a few of the coastal states. Most

of the existing national responses, however, can still be described within the other two categories: the conservation of marine species and the prevention and control of marine pollution. The first of these two categories should be divided into two subcategories: the conservation of commercial fisheries and the conservation of nature (ie, the protection of marine wildlife and related ecosystems).

## Conservation of Marine Species

### *Fishery Conservation*

Conservation trends in the South China Sea countries should be evaluated by reference to the emerging pattern of environmental legislation in the region.<sup>267</sup> In the case of fisheries, conservation constraints can be imposed as conditions warrant through a variety of regulatory techniques. Typically, fishery regulations provide for licensing, control of capture methods, prescribe seasons for protected species, limit mesh sizes, determine minimum weights and sizes of fish to be landed, and identify areas for protection, such as spawning grounds or areas where overfishing has occurred.<sup>268</sup> Licensing is at the heart of most modern systems of fishery regulation and provides the most convenient means of limiting entry to stocks subject to conservation controls. The normal regulatory system, then, is amenable in theory to scientific influence and is potentially of almost unlimited administrative flexibility.

The efficiency of this system *in practice* depends, of course, on a host of variables within the context of development planning, not the least of which are prevailing political attitudes. Moreover, even the best intentioned fishery conservationists usually are frustrated by the lack of adequate scientific information about the stocks; and, even when appropriate conservation regulations are enacted, the problems of enforcement tend to be formidable.<sup>269</sup>

In recent years most of the South China Sea countries have extended their fishery jurisdictions in accordance with the evolving regime of a 200-mi exclusive economic zone,<sup>270</sup> but like many other countries elsewhere they scarcely have begun to develop elaborate fishery conservation programs commensurate with expanded opportunities for exploitation of offshore stocks. Indeed, some of them may be further removed than ever, proportionately, from the goal of self-sufficiency in scientific research and enforcement for the extensive areas now under their national jurisdiction. Much of the current emphasis still is on the development of small-scale, inshore fisheries, which have always been under national jurisdiction, rather than on the management of more distant, offshore stocks, which have just been brought under coastal state jurisdiction.<sup>271</sup>

For illustrative purposes it is worth noting some of the features of four na-

tional systems of fishery regulation in the South China Sea region: Indonesia, Malaysia, the Philippines, and Thailand.

Indonesia. By virtue of three enactments between 1957 and 1962, Indonesia claims not only a 12-mi territorial sea but also extensive "internal waters" between and among the thousands of islands that constitute this widely scattered nation state.<sup>272</sup> The delineation of "archipelagic baselines" had the purpose of enclosing thousands of square miles of ocean under the sovereignty of the claimant state.<sup>273</sup> Despite the protests of other countries, notably Japan, whose nationals have exercised "traditional fishing rights" within these lines,<sup>274</sup> efforts have been made since then to enforce this jurisdictional claim against foreign fishermen. In March 1980, Indonesian jurisdiction was further extended by a declaration claiming a 200-mi exclusive economic zone. Couched in the language of the most recent UNCLOS III texts, the declaration claims "sovereign rights for the purpose of exploring and exploiting, managing and conserving living and non-living natural resources" in the area.<sup>275</sup>

Recent Indonesian fishery regulations cover a wide range: optimal utilization of shrimp products;<sup>276</sup> seasonal or areal closure of fishing grounds for designated species;<sup>277</sup> limitation of size and number of specified types of vessels, nets, and other equipment;<sup>278</sup> trawler prohibitions in certain areas;<sup>279</sup> gear prohibitions;<sup>280</sup> and so forth. Certain Indonesian coastal waters are divided into four "fishing belts"; and in each belt, measured from the shore, designated types of vessels are prohibited.<sup>281</sup> In a recent regulation,<sup>282</sup> offshore demersal fishing areas are divided into four zones, and each Indonesian trawler is permitted to operate only within the zone assigned to it.<sup>283</sup> Under an Interim Agreement signed in 1968,<sup>284</sup> Japanese fishermen were permitted to fish in Indonesian waters on payment of a prescribed fee, but in 1975 this provision was replaced by a profit sharing arrangement.<sup>285</sup> Because of enforcement and other difficulties, the future of this arrangement is now in doubt, and Indonesia may have to develop a new strategy for fishery cooperation with Japan, as well as with other fishing states in the region, such as Malaysia, South Korea, Singapore, and Thailand.

Malaysia. The Fisheries Act of 1963 is the principal statutory framework for fishery conservation in Malaysia.<sup>286</sup> The licensing system gives almost unlimited discretionary authority to the director general and officers of the Fisheries Department.<sup>287</sup> Provision is made for arrest, search, seizure, and forfeiture by "[a]ny fishery officer and any police not below the rank of corporal."<sup>288</sup> The minister is authorized to make regulations in a wide range of matters pertaining to maritime and estuarine fisheries;<sup>289</sup> note that "maritime waters" means "that part of the seas adjacent to Malaysia, both within and outside territorial waters, *whether or not citizens have by international law the exclusive right of fishing*" [emphasis added].<sup>290</sup>

Since 1963, only a limited number of regulations occurred under the Fisheries Act. One set of regulations deals specifically with the protection of cockles;<sup>291</sup> another with the licensing of fishing stakes and appliances, and with the terms and conditions of license for trawl fishing;<sup>292</sup> and still another with a prohibited method of artisanal fishing.<sup>293</sup> In 1976, separate regulations for Sarawak in Eastern Malaysia were promulgated.<sup>294</sup>

The Philippines. Like Indonesia, the Philippines has in recent years made extremely extensive jurisdictional claims to its neighboring and circumjacent waters.<sup>295</sup> Both in its territorial and archipelagic waters, the Philippines claims full sovereignty for all purposes, including fishery exploitation and conservation. Moreover, like Indonesia, the Philippines has also laid claim to a 200-mi exclusive economic zone within which it would have "sovereign rights" to fishery and all other resources in accordance with the terms of the emerging UNCLOS III Convention.<sup>296</sup> Most of the principal fishing grounds are located in shallow archipelagic waters. Offshore and oceanic waters beyond the 200-mi isobath are not exploited by Philippine fishermen, except for tuna, which in the last five years has become the single most important fishery for that country.<sup>297</sup>

The regulatory structure for the Philippine fishing industry is defined in Presidential Decree No. 74 of 16 May 1975. Locally, institutions are in place for management of the fishery resources: the Fishery Industry Development Council (FIDC) to plan and coordinate fishery development and management and to provide overall policy guidelines; and the Bureau of Fisheries and Aquatic Resources (BFAR) to implement the FIDC's plans and to enforce fishery regulations in conjunction with the Philippine Coast Guard.<sup>298</sup> In practice, fishery management in the Philippines, as in the other South China Sea states,<sup>299</sup> is still narrowly based on a limited range of conservation measures. This is reflected in legislation which is concerned mainly with prohibiting fishing with explosives and electricity, with the closing of fishing areas, and with the banning of certain types of trawling gears.<sup>300</sup>

Thailand. Fishery conservation and management in Thailand rests legally on two enactments: Fisheries Act, B.E. 2490, and Fisheries Act (No. 2), B.E. 2496. The first of these is a lengthy statute, which consolidates nine earlier statutes.<sup>301</sup> All fisheries belong to one of four categories: preservation fisheries, leasable fisheries, reserved fisheries, and public fisheries.<sup>302</sup> Any fishery that is not assigned to one of the first three categories is deemed a public fishery.<sup>303</sup> Conservation regulations seem designed chiefly for leasable and reserved fisheries, but theoretically all rights of fishing—even in public fisheries—apparently are subject to conditions which may be imposed by the minister of Agriculture, the director-general of the Department of Fisheries, or other officials. The minister has the authority to require some or all fishermen and their gear

to be registered and to pay a prescribed license fee.<sup>304</sup> The amendments in the second statute do not significantly change the overall system of regulation.<sup>305</sup>

### *Protection of Marine Wildlife and Related Ecosystems*

Still relatively little systematic legislation of this kind exists in the South China Sea region, but in a number of countries legislative measures of a limited nature in related problem areas now are being considered.<sup>306</sup> These problem areas are the protection of mangrove areas, the preservation of coral reefs, and the development of aquaculture.

**Mangrove forests.** Common throughout much of the South China Sea, mangrove forests are important in the preservation of coastal and estuarine ecosystems. The governments of the region now are aware of the dangers threatening these coastal forests and related marshlands,<sup>307</sup> and have responded by participating in joint workshops.<sup>308</sup> Mangrove forest conservation normally has come under general Forest Acts, but these statutes traditionally have emphasized the collection of revenues rather than conservation.<sup>309</sup> Awareness has grown, however, of the need to enact special ad hoc measures for the preservation of mangroves. In the Philippines a National Mangrove Committee has been established to consider, among other things, what legal and institutional arrangements would be appropriate.<sup>310</sup>

**Coral reefs.** Like the mangrove swamp, the coral reef is a highly productive community in the coastal zone. It is habitat for a wide variety of marine organisms and contributes significantly to the production of plankton.<sup>311</sup> Widespread throughout the South China Sea and subject to sundry, indiscriminate uses and abuses,<sup>312</sup> coral reefs have received the attention of three international scientific congresses.<sup>313</sup> Workshops and conferences have helped promote the need for legislative protection. In the Philippines a number of decrees have already been issued for this purpose: for example, the Coral Resources Development and Conservation Decree of 1977, which prohibits the gathering, harvesting, and exporting of ordinary coral but allows exemptions under special permit for educational and scientific purposes.<sup>314</sup>

**Aquaculture.** The process of aquacultural development involves introducing or augmenting in coastal or fresh water areas species that are amenable to the techniques of farming or husbandry.<sup>315</sup> In theory, almost any species may be a candidate for aquaculture,<sup>316</sup> and therefore most developing countries with serious problems of protein deficiency place a priority on aquaculture within the context of fishery development. This approach to fishery development, however, requires a sophisticated understanding of the variables affecting the

ecological balance among existing species in a chosen area. Some believe, for example, that fish farming can help conserve mangroves.<sup>317</sup>

Approximately 70 percent of the world's aquacultural output is produced in Asia. With this in mind, the Fourth MEDSEA Conference, held at Bangkok in April 1969, accepted a proposal to establish an Aquaculture Department as part of SEAFDEC, and this department was established formally in the Philippines in July 1973. At the same time an Asian Institute of Aquaculture with a wider multinational scope than that of SEAFDEC was established, and in 1978 the *Asian Aquaculture* newsletter was inaugurated. Since 1973, the aquacultural activities of the SEAFDEC member states have been coordinated and developed in large part by the intergovernmental Aquaculture Department.<sup>318</sup> As long as this trend continues, regional initiative seems likely to play an important role in aquacultural development and management in Southeast Asia.<sup>319</sup>

### Prevention and Control of Marine Pollution

ESCAP has carried out two surveys of recent legal developments related to the protection of the environment. The first covered environmental protection legislation for the ESCAP region in general.<sup>320</sup> The other dealt with legislation and other legal instruments for the protection of the marine environment in Southeast Asia only.<sup>321</sup> The first study was prepared for the Intergovernmental Meeting on Environmental Protection Legislation, held at Bangkok in July 1978 under the joint auspices of ESCAP and UNEP. The second was prepared for the regional meeting convened by ESCAP and SIDA in Bangkok in August 1980.

Some general conclusions reached by the studies should be noted. First, the ASEAN countries share genuine concern about the threat of marine pollution in the region, especially the threat of oil pollution by vessels and offshore drilling installations. Other sources of marine pollution have a lower priority.<sup>322</sup> Second, concern about oil pollution is not always matched by appropriate preventive and remedial legislation and related measures. In most of the South China Sea countries a great deal of legal and institutional development is necessary before a response is achieved equal to the perceived threat. Most of the existing legislation designed to prevent and control oil pollution is restricted to territorial waters, and even there the enforcement system leaves much to be desired.<sup>323</sup> Third, many of the international conventions on the prevention and control of marine pollution have yet to be signed, ratified, or acceded to by the ASEAN countries.<sup>324</sup> This seems due partly to a desire to wait until the outcome of UNCLOS III is known and partly to a degree of skepticism about the efficiency of some existing conventions.<sup>325</sup> Fourth, interest is apparent in

various modes of regional cooperation for marine pollution prevention and control<sup>326</sup>—perhaps even in the idea of an appropriate subregional convention<sup>327</sup>—but, in general, a disposition exists against the notion of a model statute or model regulations for environmental purposes.<sup>328</sup> The diversity of the region limits the feasibility and desirability of bringing the national legal systems into accord. If this is not a major objective of regional treaty-making, then this raises questions about the kind of regional treaty-making that should be pursued under the UNEP Regional Seas Programme.

To illustrate the diversity of existing national legislation dealing with marine pollution problems in the South China Sea, it may be enough to look briefly at the existing statutory approaches in the ASEAN countries.

### *Indonesia*

As the major offshore oil producer in the South China Sea, Indonesia, appropriately, has the most detailed legislative and regulatory provisions dealing with this source of oil pollution.<sup>329</sup> This legislation stresses repeatedly the obligation of the enterprise to “prevent the occurrence of pollution and to control any that occurs.”<sup>330</sup> Such provisions are not always limited to oil pollution.<sup>331</sup> The enterprise is required to have an approved contingency plan and to keep all necessary equipment readily available.<sup>332</sup> The penalty for violations can be as high as one million rupiahs (Rp) (US \$100,000). But there is still no provision for mandatory environmental impact assessments for offshore activities, and on the remedial side little has been done to develop a system of civil law liability for oil pollution damage resulting from such activities.<sup>333</sup>

Indonesia has adopted or implemented a few of the international conventions dealing with vessel-source pollution;<sup>334</sup> its own legislation<sup>335</sup> has been updated and supplemented in various ad hoc enactments;<sup>336</sup> and a national oil spill contingency plan recently has been developed.<sup>337</sup> Yet, a great deal of legislative development is still needed to give Indonesia a full-scale system of preventive and remedial measures to deal effectively with the various forms of ship-generated pollution threatening its national waters and adjacent areas, in accordance with the principles and procedures envisaged at UNCLOS III and in existing international conventions.<sup>338</sup> Even less has been accomplished in the control of land-based pollution hazards.

### *Malaysia*

The main legislative vehicle for the prevention and control of vessel-source pollution in Malaysia is the Environmental Quality Act of 1974. This statute purports to be applicable to foreign as well as domestic vessels, outside as well as inside territorial waters, and to that extent it may be invalid and unenforceable under international law, especially as Malaysia has not adopted any of the

relevant international conventions. Moreover, its provision dealing with marine pollution is limited to oil.<sup>339</sup> Inconsistencies and limitations elsewhere in the text suggest the need for new legislation.<sup>340</sup> But oil spills resulting from vessels are now dealt with under an impressive national contingency plan, which involves an efficient system of communication among the three major ports, the Marine Department, and the Division of Environment.<sup>341</sup>

The Environmental Quality Act has no direct provision for the protection of the marine environment from offshore installations. Offshore activities are covered by the Continental Shelf Act of 1966 (as amended) and the Petroleum Mining Act, also of 1966, but neither lists environmental protection among the purposes for which regulations may be issued. As to discharges from land-based sources and pollution originating in inland waters and the atmosphere, these indirect forms of marine pollution are subject to regulations promulgated under the Environmental Quality Act; but as the government moves toward the development of a more comprehensive national environmental policy these regulations will have to be tightened and expanded.

### *The Philippines*

In the Philippines Presidential Decree No. 984 authorizes the National Pollution Control Commission (NPCC) to prevent and control water, air, and land pollution throughout the country. In consonance with the Philippine Environment Code, the NPCC developed various measures specifically for marine pollution control purposes, but the scope of its rule-making authority is uncertain because it is shared with the Philippine Coast Guard (PCG).<sup>342</sup> In recent years the PCG has issued detailed Rules and Regulations for Prevention, Containment, Abatement and Control of Marine Pollution.<sup>343</sup> These measures regulate the discharge of oil, oily mixtures, noxious substances, and "refuse matter" into the sea, bays and other shoreline areas, rivers, and lakes.<sup>344</sup> But these and all other marine pollution regulations promulgated by the Philippines are limited to "territorial waters," "inland navigable waters," and tributaries thereof. Presidential Decree No. 602 has created a National Operation Centre for Oil Pollution under the PCG, and a National Oil Spill Contingency Plan has been developed. Note also that the Philippines is one of the few countries in Southeast Asia to have ratified and implemented the 1954 IMCO Oil Pollution Convention.

The Philippines has a rapidly developing interest in offshore oil production.<sup>345</sup> Relevant regulations are evolving, but environmental precautions and controls are not yet specifically spelled out.<sup>346</sup> The government has acknowledged the equal, or even greater, importance of controlling land-based marine pollution and suggested that a baseline study be undertaken to identify the pollutants of utmost significance to the marine ecosystems surrounding the Philippines.<sup>347</sup> Systematic protective legislation is not yet a prospect, however.

### *Singapore*

Singapore's response to the dangers of ship-generated pollution is perhaps the most comprehensive of all the ASEAN countries. Like the Philippines, it has ratified and implemented the 1954 Oil Pollution Convention in its Prevention of Pollution of the Sea Act (1971). Moreover, it has added strict measures of its own for prevention of discharges of oil and oily mixtures into Singapore waters. Amendments have been effected by the 1973 Civil Liability (Oil Pollution) Act and the 1976 Prevention of Pollution of the Sea (Amendment) Act, and regulations thereunder. The liability standard in the 1973 statute is higher than that imposed under the 1969 International Convention on Civil Liability for Oil Pollution Damage. This may give rise to difficulties since Singapore is not a party to that convention and yet seems anxious to apply its 1973 act extraterritorially.<sup>348</sup> The regulations under the 1976 Act provide for storage of oil dispersants by petroleum companies for use in contingencies. Note that, since 1971, a national oil spill contingency plan has existed in the form of a "marine emergency action procedure,"<sup>349</sup> but no provision has been made for liaison with neighboring states.

Singapore also has imposed restrictions on the marine transportation of radioactive materials under its Radiation Protection Act of 1973 and has developed a considerable body of water quality regulations for the treatment of sewage and for the control of industrial emissions. Since it is not yet involved in offshore petroleum production or related activities, it has had no occasion to develop environmental safeguards for that purpose.<sup>350</sup>

### *Thailand*

Of the five ASEAN countries, Thailand has the least legislation governing marine pollution. Almost none of the existing marine pollution conventions has been ratified or otherwise implemented by Thailand, and the formulation of a legislative strategy is just beginning. The existing water laws, for example, are aimed only against nuisance or disturbance, and the Navigation Act, which empowers the harbor master to control oil pollution, is not regarded as a sufficiently vigorous mechanism. But the need to remedy these deficiencies has been acknowledged by the Thai government<sup>351</sup> and a step in this direction was taken in June 1979, when the National Seminar on the Protection of the Marine Environment and Related Ecosystems was held under ESCAP auspices in Bangkok.<sup>352</sup>

This seminar, which provided an excellent overview of the marine pollution problems in Thailand, seems likely to have an important influence on the future development of an effective legal and institutional response to these problems, even if only a fraction of the participants' recommendations are acted

on. Although "the major pollution loads come from the large cities and from waste-producing industries," it was pointed out that shipping and harbors "must be considered in any control program": "no control program can be implemented without control of all the pollution sources."<sup>353</sup> The merits of United States and Australian legal approaches to environmental protection were compared,<sup>354,355</sup> and recommendations for a legal strategy were advanced and discussed.<sup>356,357</sup> Considerable attention was devoted to the techniques of oil-spill control and a new administrative framework was proposed by the chief of the Environmental Impact Evaluation Division of the National Environment Board (NEB).<sup>358</sup> These and other proposals for a national plan of action have been approved by the NEB, under the Improvement and Conservation of National Environmental Quality Act of 1975, and prepared for submission to the cabinet. From these proposals it is intended to develop a National Contingency Plan, establish a Marine Oil Pollution Control Board, and coordinate the work of various government agencies and the private sector for more effective prevention and abatement of oil pollution.

In February 1981 a Ministerial Resolution was promulgated to stop dredging near Phuket. It appears that this legislation, which delays new dredging until 1983, is due less to environmental considerations than to the conflict between mining and tourism in the coastal zone. Preparations are also under way for developing measures to curb land-based pollution of the sea. The statutory basis for environmental precautions against offshore petroleum production and related activities already exists and awaits the development of regulations.<sup>359</sup>

### Coastal Zone Management

"Coastal zone management," "coastal resources development and management," and similar phrases have been coined in an effort to articulate an integrated approach to the development, regulation, and management of resources and activities of special importance in coastal areas, at the environmentally critical interface between the land and the sea.<sup>360</sup> Coastal zone management has not yet become the focus of systematic programming by international agencies, since its integrated, multipurpose orientation cuts across the traditional activities of functional agencies such as the FAO, IMCO, IOC, and WHO.<sup>361</sup> At the national level, moreover, few if any of the South China Sea countries can be said to have responded to the growing need to enact legislation that deals with coastal zone management problems in an integrated and systematic manner.<sup>362</sup> Yet, such an approach could conceivably cost less than a variety of scattered ad hoc approaches reflected in separate and often inconsistent bits and pieces of legislation. Most developing countries cannot afford

to dispense with planning, and coastal zone management is intended essentially to be the product of planning at its best.<sup>363</sup> Moreover, a system of coastal zone management would accommodate many of the priorities already identified by the South China Sea countries: aquacultural development; community involvement in integrated fishery development; shoreline siting of mining, industrial, and energy-producing facilities; protection of mangrove areas; preservation of coral reefs; water quality control in estuaries and rivers; harbor development and management; beach protection; and other coast-related problems.

## CONCLUSIONS

### The Regional Level of Treatment

Regionalism is, above all, a level of treatment intermediate between the national and the global at which appropriate cooperative action can be taken by national and international agencies to deal effectively with such problems as the protection and conservation of a shared ocean environment. The feasibility of such cooperative action depends chiefly upon the perception of the nations in question that they do in fact have a "shared" or "common interest" in the ocean areas of their neighborhood, whatever the legal status of the various areas. In an age of extended national jurisdiction in the ocean, the concept of common interest is losing much of its traditional association with that of inclusiveness and with the principle of reciprocity. Rather, it is becoming a more complex combination of elements, such as interdependence, mutual benefit, complementarity, and joint responsibility, as well as inclusiveness and reciprocity. At a time when the common heritage of humanity is beginning to assume an institutional significance at the global level, it would be perverse if the parent concept of common interest did not also acquire institutional significance at the regional level.

Regional arrangements, through which cooperative action can be taken in the common interest, have been referred to in this paper as taking the form of regional agreements or regional organizations. But for purposes of analysis and advocacy alike, it should be recognized that regional arrangements take more than these two forms. As a matter of principle as well as convenience, they may be classified according to the nature, degree, and duration of *commitment* involved, for cooperative action lacking any commitment by the nations in question lacks any real significance. Accordingly, four kinds of regional arrangements may be distinguished: minimal commitments, special commitments, formal commitments, and organizational commitments.

*Minimal* regional commitments are those accepted as routine matters of

courtesy and as low-cost investments in neighborly goodwill. They are reflected in informal and occasional exchanges of information and in official but occasional notification and consultation outside any agreed upon framework of cooperative behavior. Regional arrangements of this sort are everyday occurrences around the world and generally pass unnoticed outside the world of staff-level communications in diplomatic and other sectors of bureaucracy.

*Special* regional commitments are those accepted as significant but finite, specific medium-cost investments in collaboration with neighboring nations to secure a narrowly defined objective of joint interest. They may be limited joint projects; more ambitious, medium-term programs; or joint development or planning exercises that have more intimate, longer lasting implications, though outside any framework of indefinitely continuing commitments.

*Formal* regional commitments are those accepted in a publicized, legally significant form in the name of the state, often with long-term or indefinite consequences for the nations accepting them. Generally, these are treaty arrangements of one kind or another: bilateral or plurilateral neighborhood agreements or regional agreements. Sometimes, however, they may be issued as joint communiqués or declarations that lack full treaty character but are, nonetheless, public and formal expressions of policy commitment with some juridical significance. Normally, questions arising out of formal commitments are dealt with in accordance with the principles, if not always the procedures, of international law.

*Organizational* regional commitments are those accepted by the creation of, and participation in, joint institutional mechanisms. Most international institutions—whether global, regional, or subregional—belong to a *circuit* of organizations. Accordingly, many new organizational regional commitments are additions to the appropriate circuit, designed to serve a supplementary or developmental function of a fairly specific kind. Such initiatives might be described as “link arrangements,” since their purpose can be understood and evaluated only by reference to the appropriate circuit. Some link arrangements are created primarily to enable existing organizations to focus more sharply and work more efficiently within a more limited regional setting, as when a regional commission creates a subregional committee within its membership. A higher level of regional organization is represented by regulatory commissions with some degree of autonomy or discretionary authority, independent of the governments of the member states. The most highly developed mode of organizational regional commitment is the permanent, collective or quasi-communal organization. This category ranges from communal, multi-functional entities—such as the European communities—through regularly convened, multiple-purpose, continental or semicontinental forums, such as the Organization of American States, the Organization of African Unity, and the League of Arab States, to more loosely conceived mechanisms for consul-

tation, coordination, and the occasional joint initiative, such as the Nordic Council.<sup>364</sup>

### **The Role of Regional Cooperation in the Protection and Conservation of the Marine Environment**

In any given context, one must not exaggerate the virtue or importance of regional cooperation. International lawyers are not alone in being susceptible to this kind of ideal, particularly in an age when so many nations seem to be turning away from the ideal of global cooperation. But a degree of caution or skepticism about the desirable scale of regional cooperation should be entertained, even by the advocate for such initiatives.

Like it or not, we live in a world of nation states. In varying degrees, all national governments pay lip service to the principle of international cooperation, both global and regional, but most recognize such utterances as obligatory rhetoric in international politics and diplomacy. Few, if any, regard international cooperation as an end in itself.<sup>365</sup> Cooperative initiatives are seen rather as means to other ends, and these ends almost always are conceived and defined in national terms. Regional cooperation for the protection and conservation of the marine environment will be construed by national governments as a *possible*, rather than a preferred, approach to a variety of national, ocean- and coast-related purposes. This attitude may be mistaken or short-sighted, but it is the predominant official attitude with which advocates for marine regionalism will have to contend, especially in an age of extended national jurisdiction. The expectations of national enrichment engendered by this trend may be illusory in many cases, but proposals for marine regional arrangements in the 1980s are likely to be evaluated primarily by the extent to which they seem conducive to these ends.

But skepticism also can be carried too far. Most coastal states probably will suffer frustrations in the 1980s as they try to take advantage of extended zones of national jurisdiction, not least in the difficult process of integrating conservation and other environmental considerations with development planning. Sooner or later, regional conservation arrangements of one kind or another are likely to be accepted by most coastal states as an important contribution to developmental objectives conceived in the national interest. Regional cooperation will be perceived as an opportunity to strengthen national capabilities rather than as a constraint upon national will. As national caution dissipates in the longer run, many coastal states might advance from minimal and special regional commitments to a wider range of regional agreements and regional organizations.

## The Role of Regional Arrangements in the Protection and Conservation of the South China Sea

Most nations are somewhat reluctant to enter into regional arrangements—that is, formal or organizational commitments—except in unusually auspicious or desperate circumstances. Regional arrangements of both kinds generally are avoided unless a clear prospect exists for deriving national benefits or confronting a common danger. Such commitments tend to be long-term—indeed, they are often of indefinite duration; in the long-term unexpected difficulties may arise; and such commitments usually are conspicuous undertakings for which leaders and officials may be accountable. Given a real choice, governments prefer minimal and special commitments as modes of regional cooperation.

Government reluctance to resort to regional agreements and regional organizations is quite evident in Southeast Asia, especially in the context of environmental protection, which has to fight for recognition and support against other allegedly higher priorities. In such a context, the reluctant states, like those of the South China Sea region, may be won over only after a watering-down of proposed treaty commitments to general, vague, or nonmandatory language, or after an assurance that membership in a proposed organization will not result in onerous costs. Any recommendations for environmental cooperation among the governments of a region must recognize these realities.<sup>366</sup>

### *Regional Agreements*

International lawyers, bureaucrats, and diplomats perhaps are inclined to overrate the value of international treaty arrangements as a mode of regional cooperation. In normal, nonregional relationships between two or more states, many important reasons exist, of course, for treaty-making in its broadest sense; and in regional settings treaty-making may be necessary to create certain kinds of organizational commitments between neighboring states. But in the specific context of *regional cooperation*, treaty-making should be viewed, typically, as a means to an end, rather than an end in itself; and sometimes the end can be served better without a formal, binding treaty.

Almost every kind of international agreement belongs—and belongs exclusively—to one of four categories: administrative, distributive, resolute, or demonstrative. The ends of regional cooperation in ocean affairs might be served, in theory, by all four categories of agreements. An *administrative* agreement—designed primarily to create and maintain interstate services—might be negotiated regionally to produce a joint shipping service, a cooperative en-

forcement arrangement between the coast guards of neighboring states, or a joint fishery management system. A *distributive* agreement—designed primarily to distribute, redistribute, or exchange people, money, skills, data, commodities, or wealth-creating entitlements—might be negotiated regionally to allocate fishing rights, authorize a joint venture, sell marine products, exchange scientific information, inculcate management skills, or transfer technology. A *resolutive* agreement—designed primarily to resolve an outstanding issue—might be negotiated regionally to settle a maritime boundary dispute or some other kind of jurisdictional quarrel. And a *demonstrative* agreement—designed primarily to dramatize good intentions—might be negotiated regionally to pledge good faith and cooperative action in the search for solutions to problems.

Applied to the context of the protection and conservation of the ocean environment, all four types of regional agreements might conceivably be entered into, but at least in the South China Sea region the prospects seem to vary appreciably from category to category. The Southeast Asian countries, like most other states, appear reluctant at present to enter into formal treaty commitments of any administrative character, and the ideal of environmental cooperation seems unlikely to overcome this aversion. Again, in common with other nations elsewhere, they seem unlikely to resort to a treaty settlement of an environmental dispute solely for resolutive purposes, especially in an age when most coastal states are apt to make a liberal, discretionary interpretation of their resource-related rights within their exclusive economic zone. Certain kinds of distributive agreements are more conceivable, but matters such as research, training, and exchange of data usually can be carried out regionally without a treaty. The primary purpose of regional treaty-making in the South China Sea region, at least in the short term, may be symbolic or demonstrative.

If a case is to be made, then, for a regional or subregional treaty for the protection and conservation of the South China Sea environment, perhaps it should be justified less by short-term national interests than by long-term common interests. All that should be expected is a parent convention, a framework of good intentions, couched in general language that looks to the development of more specific commitments in the future. A framework convention, being essentially demonstrative or symbolic in purpose, should *not* be expected to resolve outstanding issues or to make a significant contribution to resource production or distribution, much less to forge an organic link between existing state services. It should be enough that such a convention between neighboring states serves to promote the *idea* of regional cooperation in the protection and conservation of their shared ocean environment. Less intangible, short-term benefits are more likely to accrue from special and organizational commitments designed for purposes set out in the framework convention.

To bind the parties together in a specific and operationally significant way, so as to create the prospect of effective cooperative action, it is necessary to gain their consent as early as possible to a carefully detailed Action Plan, which can endure as an official statement of their common intentions without being couched in a formal and legally binding instrument.

Judged in the light of this theory of commitment, the sequence of negotiations normally attempted under the UNEP Regional Seas Programme seems the most appropriate for producing cooperative regional management of the marine environment: from Action Plan to general convention to particular protocols. What needs to be stressed is the importance of concurrent efforts to secure appropriate *special* and *organizational* commitments, which fall within the framework of the officially approved Action Plan but need not be incorporated in formal, binding legal instruments.

### Regional Organizations

During the 1960s, regional organizations in Asia increased at a rate faster than anywhere else, but today only about one-tenth of the world's regional intergovernmental organizations are found in Asia.<sup>367</sup> Asian countries, like most others, invoke the principle of regional cooperation, but they are "cautious about schemes for new intergovernmental organizations."<sup>368</sup>

After an uncertain beginning,<sup>369</sup> ESCAP has undergone a thorough-going process of Asianization and today is the only organization that can be said to represent Asia as a whole.<sup>370</sup> But the region of Asia is too diverse geographically, economically, politically, and culturally to acquire a truly continental identity in the manner of Africa or Latin America. Indeed ESCAP "it is said, now devotes about 95 percent of its work to subregional efforts."<sup>371</sup> Yet, subregional organizations are slow in developing in Asia. The truth may be that neither subregionalism nor pan-Asianism enjoys widespread support in the region as a whole, and that neither trend can be said to be dominant.<sup>372</sup> What this means, at least for purposes of social and economic development, is that ESCAP has developed "a basically pan-Asian perspective. . . , coupled with a selective approach to subregional cooperation."<sup>373</sup>

Whether environmental cooperation in the South China Sea should be assigned chiefly to regional or subregional organizations is not necessarily determined simply by looking at emerging patterns of cooperation for developmental or other nonenvironmental purposes. A "region" for one purpose may not be a "region" for another.<sup>374</sup> Significantly, UNEP was exempted from the amalgamations pursuant to the recent restructuring of the economic and social sectors of the U.N. system.<sup>375</sup> But UNEP is unlikely to ignore the significance of the decision to give the U.N. regional economic commissions, such as

ESCAP, an expanded mandate under General Assembly and ECOSOC policy guidelines.<sup>376</sup> Indeed, while careful not to lose its own operational independence, UNEP is almost bound, by reason of its development-and-environment ("ecodevelopmental") philosophy, not to seem to be avoiding links between the regional components of its Regional Seas Programme and the U.N. regional economic commissions.

Of the other U.N. agencies, FAO and IMCO are the two most likely to play an important role, along with UNEP and ESCAP, in the protection and conservation of the South China Sea. FAO's role could be truly central, through both its new Programme of Assistance to developing coastal states and the new subregional committee under IPFC.<sup>377-378</sup> IMCO's contribution will be mostly through operation of a regional oil-combating center.

As to regional intergovernmental organizations outside the U.N. system, ASEAN and SEAFDEC seem to exhibit the most potential for cooperative action in the protection and conservation of the South China Sea. But ASEAN's mode of operation is somewhat cumbersome,<sup>379</sup> and SEAFDEC tends to be inhibited by its dependency on the leadership of Japan, an extraregional power. Moreover, both organizations have a limited membership and lean toward developmental objectives that have precedence over conservation.<sup>380</sup>

Finally, note the nonmatching memberships of those organizations. To take advantage of existing organizational commitments to develop "link arrangements" for the protection and conservation of the South China Sea, the memberships of these commissions, councils, and agencies should be expanded. Moreover, better liaison should be effected with nongovernmental bodies, such as the International Center for Living Aquatic Resources Management (ICLARM).<sup>381</sup>

## Final Considerations

Ideally, of course, the South China Sea should be brought under a single, comprehensive system of environmental protection and conservation. As a semienclosed sea, it is a potential unit of management. Indeed, it already has been designated a "natural management area" for fishery development and conservation by FAO, and a committee for the South China Sea has been formed within the IPFC.

Such a system of comprehensive unit management would not be effective in practice, however, unless all or at least most of the littoral states of the region were prepared to participate and contribute to the management of their shared marine environment in accordance with their capabilities. At present, only the five ASEAN countries have shown any interest in cooperative action, and even their interest is limited to a few priority concerns, such as establishing a

cooperative contingency plan for combating oil pollution. Support for regional cooperation in other matters—such as mangrove protection, coral reef preservation, and aquaculture—is even more spotty. Yet, if any real advance is to be made in the direction of the ideal, it is important to look beyond the “political realities” of the day and start working toward a collective commitment by all the non-ASEAN as well as the ASEAN countries in the region.

Particularly important is the imaginative use of diplomatic persuasion with a view to bringing China and Vietnam into such discussions at an early stage. Both have lengthy coastlines in the northern sector of the South China Sea and have made extensive jurisdictional and territorial claims in the region. But the Chinese have never regarded themselves as belonging geographically to Southeast Asia, in any context of political significance, and the Vietnamese in turn are unlikely in the short term to form any close cooperative relationship with the ASEAN countries. If these seven countries—with or without Taiwan, Kampuchea, and the colonies of Hong Kong, Macao, and Brunei—can be brought together, it may be possible only within the U.N. system under the joint auspices of UNEP and ESCAP. Such an initiative would require striking a delicate balance between conservation and development, consistent with the emerging world conservation strategy for “ecodevelopment.”

UNEP's Action Plan for East Asia concentrates initially on the five ASEAN countries. If this document is conceived solely in promotional terms—as a highly public, demonstrative instrument designed to dramatize the parties' good intentions for future ocean-related environmental cooperation in the region—then much would be gained by seeking *approval in principle* from all or at least most of the South China Sea countries.

If several of the South China Sea states are reluctant to accept the UNEP Action Plan in its present form, it may be their perception that the plan “threatens” to impose more costly commitments than they are prepared to accept. Emasculation of the plan is too high an environmental price to pay to persuade a larger number of countries to approve this framework of intentions, but the possibility of moderate revision might be kept open in the years to come. Negotiations with the non-ASEAN countries is almost certain to result in at least a slight shift in priorities.

The next priority—after approval of a formal Action Plan by the non-ASEAN South China Sea countries—is *not* their adoption of a framework convention, but rather a series of interlocked collective initiatives by the Action Plan countries, in a variety of forums, with a view to implementing the various components of the Action Plan. Some of these initiatives might be taken by all the Action Plan adherents together within U.N. organizations to which they all belong (eg, UNEP, ESCAP, FAO, IMCO); others would be taken by a smaller number of interested states within regional organizations which the interested states can be induced to join; still others would be taken, in the form

of special commitments, on a bilateral or neighborhood basis, outside any existing organizational framework.

To the extent that government reluctance to take initiatives in this context is due to scarce resources and capabilities for the protection and conservation of the ocean environment, maximum advantage should be taken of any prospective opportunity to establish a regional marine center for scientific and technological research and training, as envisaged for all regions at UNCLOS III. Such a proposal has been discussed within ESCAP. If the South China Sea states could come together and respond collectively to this proposal, then it might be feasible to plan a division of the proposed center that would concentrate specifically on the research and training requirements of Southeast Asia.

Consonant with these general considerations, a number of more specific suggestions might be made under the three main headings—conservation of marine species, prevention and control of marine pollution, and coastal zone management.

## **Conservation of Marine Species**

### *Fishery Conservation*

It is important to distinguish four fishery situations in the South China Sea:

1. where the species in question occur mainly in coastal stocks that fall within legally permissible limits of national jurisdiction;
2. where the species in question occur mainly in stocks shared across national jurisdictional boundary lines by two or more neighboring states;
3. where the species in question occur mainly in stocks that straddle the line between the area of national jurisdiction of a coastal state and the high seas beyond; and
4. where highly migratory species are found widely distributed around the world.

(The situations of commercially significant anadromous and catadromous species do not exist in the South China Sea.)

Regional cooperation may be useful in all four situations, but in varying modes. The first, embracing both mobile and sedentary coastal stocks, is one where special commitments might be entered into from time to time (eg, projects and programs for research and training purposes), but where formal and organizational cooperative arrangements may be unnecessary. Even in circumstances where outside assistance is sought in establishing an effective na-

tional conservation and management system, it may not be necessary to resort to regional agreements or regional organizations.

The second situation, by contrast, is one in which the neighboring states have an interest—short-term rather than long-term—in negotiating a formal agreement for cooperative management of the shared stocks, or at least for regular consultations and joint research to ensure that the neighboring management systems are compatible and conducive to effective conservation. Ideally, the neighboring states should enter into an organizational commitment, preferably a joint regulatory commission or at least a joint advisory mechanism that is authorized to make appropriate conservation or management recommendations to the governments.

The third situation is one in which the coastal state should make an organizational arrangement for research and regulatory purposes within the framework of the neighboring regional commission (eg, IPFC). This may result in the occasional special project or program in response to problems as they arise.

The fourth situation—typically that of tuna—is one in which a limited (sub-regional) cooperative approach is *not* useful. Both in theory and in practice, conservation and management problems of this kind are treated best within a broad-based organization, whose membership includes most of the interested states.

#### *Protection of Marine Wildlife and Related Ecosystems*

All governments should give appropriate attention to existing international conventions for the protection of wildlife. Very few states have an interest in *not* signing, ratifying, or adhering to such conventions. Formal support for these unexceptionable treaties rarely involves a state in serious controversy and generally represents a low-cost investment in acquiring an international reputation as an environmentally responsible state.

More specifically, the South China Sea states should, like littoral states elsewhere, accept a special responsibility for the preservation of those marine species inhabiting their marine environment that have been identified by experts as “endangered.” To urge them to accept formal or organizational commitments for this purpose may be unnecessary; more urgent may be their participation in special projects or programs designed to identify and monitor the species in question. But in the worst cases, where species are threatened with extinction, and where the causes are known and correctable, then the littoral states have a legal and moral obligation to cooperate, either formally or organizationally or both, with other concerned nations in efforts to restore the species to a sustainable population level.

In the case of special, ecologically valuable areas that are threatened (eg, coral reefs, mangrove swamps), the neighboring coastal states have an interest

as well as a responsibility to cooperate in special protective research projects and research and training workshops. The same suggestion applies also to neighboring coastal states with similar or shared interests in establishing and maintaining marine parks.

## **Prevention and Control of Marine Pollution**

### *Vessel-Source Pollution*

Steps should be taken to develop the existing ASEAN Contingency Plan in at least three ways—

1. by extending the plan to include non-ASEAN littoral states in the region;
2. by extending the plan geographically beyond territorial limits to include the entire South China Sea and all approaches in adjacent areas; and
3. by increasing the capability of littoral states to deal with the most catastrophic contingencies through formal or organizational "link arrangements" with interested and concerned extraregional states.

In consultation with interested states both inside and outside the region, the South China Sea countries no doubt will wish to devote continuing efforts to a number of related organizational initiatives (with or without formal legal commitments): the establishment of IMCO-approved traffic separation schemes for congested waterways, such as the Straits of Malacca and Singapore; the establishment of IMCO-approved national schemes of protection for specially vulnerable areas, in accordance with UNCLOS III provisions; the establishment of an IMCO-operated regional (subregional) center for combating oil pollution; and so forth.

Finally, of course, but not least important, the littoral states of the region should re-examine the existing international marine pollution conventions that they have not yet signed, ratified, or acceded to, as part of a systematic effort at the conclusion of UNCLOS III to bring the region into line with other regions in preserving the marine environment against ship-generated pollution. Ratifications or accessions may be deposited after UNCLOS III along with statements on the applicability and interpretation of such conventions.

### *Pollution from Offshore Petroleum Activities*

As these and related offshore activities spread more widely through the South China Sea, it will become important to cooperate for research and train-

ing purposes in special projects and programs and occasional workshops. Often, it will be useful to take advantage of the organizational facilities of organizations such as CCOP (ESCAP) and ASCOPE (ASEAN).

### *Land-Based Pollution*

It seems premature to promote efforts for concluding a regional convention for prevention of land-based pollution of the South China Sea. It may be sufficient in the short term to identify all factors, land based and otherwise, contributing to the overall problem of marine pollution and to do so with a sense of priorities that reflects the developmental objectives of the littoral states. Such useful work can be accomplished within the framework of the proposed Action Plan. The short-term requirement thereafter is to pursue a number of special and organizational initiatives within geographically limited (sub-regional) groups of neighboring littoral states whose land-based activities interact through resulting marine pollution; or between two or more littoral states with comparable problems, such as industrial waste disposal and sewage treatment in estuaries and other coastal areas adjacent to major rivers. In both circumstances, the interested states may wish to form a special joint task force to undertake, with UNDP or other external funding, under UNEP and/or ESCAP auspices, a number of coordinated research projects. The purpose would be to produce a set of recommendations to the participating governments, based on a shared pool of research data. The participating governments would agree in advance on an appropriate division of labor in the research work, somewhat as in the South Asian Cooperative Environmental Program (SACEP).

### **Coastal Zone Management**

Here, too, special task forces may be appropriate modes of regional cooperation for studying shared or similar problems. Indeed, the same task force might have terms of reference that require a focus on coastal zone management in such a way as to study within an integrated framework a number of different but coast-related problems: the land-based marine pollution problems referred to; certain species conservation problems, such as those of coral reef preservation, mangrove protection, and aquacultural development; and other more or less distinct problems, such as beach protection and tourist development.

## NOTES

References to "n." indicate notes in this work. References to notes in a particular citation are preceded by "note."

1. Mark J. Valencia, "South China Sea: Present and Potential Coastal Area Resource Use Conflicts" (1979), 5 *Ocean Management* 1. See also his, "The South China Sea: Prospects for Marine Regionalism" (1978), *Marine Policy* 2(87).
2. John C. Marr, *Fishery and Resource Management in Southeast Asia* (Resources for the Future, Inc., The Program of International Studies of Fishery Arrangements, Paper No. 7, 1976), p. 4.
3. That is, Fujian (Fukien) and Guangdong (Kuangtung) including Hainan Island.
4. Draft Convention on the Law of the Sea (U.N. Doc. A/CONF. 62/L. 78), 28 August 1981, Articles 124-132.
5. Choon-ho Park, "The South China Sea Disputes: Who Owns the Islands and the Natural Resources?" (1978), *Ocean Development and International Law* 5(27); Hungdah H. Chiu and Choon-ho Park, "Legal Status of Paracel and Spratly Islands" (1975), *Ocean Development and Int'l Law* 3(1); and Cheng Tao, "The Dispute over the South China Sea Islands" (1975), *Texas Int'l Law J.* 10(265).
6. Corazon Morales Siddayao, *The Off-shore Petroleum Resources of South-East Asia: Potential Conflict Situations and Related Economic Considerations* (1978), pp. 41-101; and Roderick O'Brien, *South China Sea Oil: Two Problems of Ownership and Development* (Institute of Southeast Asian Studies, Occasional Paper No. 47, 1977).
7. East-West Environment and Policy Institute, *Geology and Hydrocarbon Potential of the South China Sea: Possibilities and Examples of Joint Research and Development* (Report of workshop cosponsored by the Committee for Coordination of Joint Prospecting for Mineral Resources in Asian Offshore Areas, 1980).
8. Valencia (1979), n. 1, p. 7.
9. On the geographical characteristics of the straits and their relation to vessel-source marine pollution problems, see Daniel P. Finn et al., *Oil Pollution from Tankers in the Straits of Malacca: A Policy and Legal Analysis* (East-West Center, Open Grants Paper Series, No. 6, 1979), pp. 20-43.
10. "Water movement in the Gulf of Thailand is weakly anti-cyclonic during the southwest monsoon and weakly cyclonic during the northeast monsoon, here surface flushing rates are certainly low and deeper horizontal circulation is retarded by a shallow sill across the mouth of the Gulf." Valencia (1979), n. 1, p. 7.
11. "In the Philippine and Indonesian archipelagoes, deep circulation is in-

- hibited by sills dividing the numerous separate deep basins, thus retarding replenishment and ventilation." Valencia (1979), n. 1, p. 7. For basic information on the oceanography of the region, see the Naga Report, *Results of Marine Investigations of the South China Sea and the Gulf of Thailand, 1959-1961* (sponsored by the governments of South Vietnam, Thailand, and the United States), 4 vols. (1974-1975).
12. Valencia (1979), n. 1, p. 5.
  13. Deb Menasveta, S. Shindo, and S. Chullasorn, *Pelagic Fishery Resources of the South China Sea and Prospects for Their Development* (FAO/UNDP, series SCS/DEV/73/6, 1973).
  14. For the Philippines the most important pelagic species in the South China Sea are roundscads, sardines, bigeyed scads, and chub mackerel; for Indonesia, Spanish mackerel, fusiliers, and anchovies; for Thailand, chub mackerel, squid, and cuttlefish; and for Taiwan, mackerel, bonito, horse mackerel, gray mullet, moonfish, tunas, dolphin, and shark. Marr, n. 2, p. 13.
  15. The Menasveta study estimates a potential pelagic species catch of 3,850,000 MT. Marr, n. 2, p. 26.
  16. Marr, n. 2, p. 25.
  17. Tsuneo Aoyama, *The Demersal Fish Stocks and Fisheries of the South China Sea* (FAC/UNDP, series SCS/DEV/73/3, 1973).
  18. For a listing of the principal demersal species for the various subareas of the South China Sea, see Table 4 in Marr, n. 2, p. 15.
  19. The Aoyama study estimates a potential demersal catch of 3,453,000 MT, n. 17, p. 26.
  20. For other estimates, see Aoyama, n. 17, p. 27.
  21. Some estimates of total *increased* production in the region go as high as 14 million metric tons. *Ibid.*
  22. For a recent evaluation, see Alan White, "Environmental Pollution and Resource Depletion" in *Marine Policy Problems in Southeast Asia* (East-West Environment and Policy Institute, forthcoming). More generally, see Cyrille de Klemm, "Living Resources of the Ocean" in Douglas M. Johnston, ed., *The Environmental Law of the Sea* (International Union for Conservation of Nature and Natural Resources, 1981), pp. 71-192.
  23. J. R. V. Prescott, *Maritime Jurisdiction in Southeast Asia: A Commentary and Map* (East-West Environment and Policy Institute, Research Report No. 2, 1981), pp. 5-7. For a global review, see Douglas M. Johnston and Edgar Gold, "Extended Jurisdiction: The Impact of UNCLOS III on Coastal State Practice" (Dalhousie Ocean Studies Programme, 1979). (Paper presented at the 13th Annual Conference of the Law of the Sea Institute in Mexico City, 14-17 October 1979, in press.)

24. Valencia (1979), n. 1, p. 5. For a recent discussion, see *The Mangrove Ecosystem: Human Uses and Management Implications* (Report of a UNESCO regional seminar held in Dacca, Bangladesh, December 1978) (UNESCO, 1979); see also Report of the Expert Consultation Meeting on Impact of Pollution on the Mangrove Ecosystem and Its Productivity in Southeast Asia (organized by FAO and UNEP in collaboration with UNESCO and International Union for the Conservation of Nature and Natural Resources [IUCN] in Manila in February 1980).
25. Valencia (1979), n. 1, p. 5.
26. Sandy beaches are not a common feature of the Southeast Asian coastal zones, and this tends to give a special scarcity value to the few that do exist.
27. For population figures available in 1970, see various tables in Barry Cohen, *Monsoon Asia: A Map Geography* (1970).
28. On the importance of Java, Indonesia's "core zone," see Cohen, n. 27, pp. 66-69.
29. "Monsoon Asia" makes up over half of the world population. Cohen, n. 27, p. 39.
30. For a survey of traffic patterns through the Strait of Malacca, see Finn et al., n. 9, pp. 4-19.
31. In 1975, a total of 286 million kl of crude oil was transported through the Malacca Strait. This figure represents 22 percent of the entire amount of crude oil exported by ship in that year. Finn et al., n. 9, p. 5. For a recent review of current trends in the region, see Lin-Sien Chia, "Marine Carriage of Petroleum in Southeast Asia: A Preliminary Survey" in Norman G. Letalik, Mark J. Valencia, and Lin-Sien Chia, eds., *Shipping, Energy and Environment: Southeast Asian Perspectives for the Eighties* (proceedings of a workshop cosponsored by East-West Environment and Policy Institute and Dalhousie Ocean Studies Programme, held at Honolulu, 10-12 December 1980), in press, in Section 3.3 ("Technological Development and Commercial Practice").
32. On proposed alterations of tanker traffic patterns in the region, see Finn et al., n. 9, pp. 124-150. See also D. T. Isaac, "The Future of the Super-tanker," in Letalik, Valencia, and Chia, n. 31.
33. Finn et al., n. 9, pp. 76-99.
34. In addition to petroleum, other pollutant energy materials as coal, liquefied natural gas, and spent nuclear wastes are transported through Southeast Asian waters. For an oil demand projection see Takao Tomitate, "Future Oil Flow in the Asia-Pacific Region" (unpublished paper prepared for First Conference of the ASEAN Council on Petroleum [ASCOPE] held at Jakarta in October 1977).
35. Indonesia is, of course, the leading oil producer in the region, but the

- Philippines, Malaysia, and other littoral states in the region expect to become active in the extraction of offshore hydrocarbons in the early 1980s. See, for example, Diane Drigot, "Interest in Oil as a Factor in the Philippines' Claims in the South China Sea" (unpublished paper, 1980). More generally, see Mark J. Valencia, "Southeast Asia: National Marine Interests and Marine Regionalism" (1978), *Ocean Development and Int'l Law* 5(421):429-433.
36. Committee for Co-ordination of Joint Prospecting for Mineral Resources in Asian Offshore Areas (CCOP), Summary Report of the Ad Hoc Group Meeting on the Marine Environment (held at Bangkok in March 1980); and ESCAP, *Report of CCOP on Its Sixteenth Session* (Doc. E/ESCAP/70, 18 December 1979).
  37. The land-based pollution problem is most serious in the estuaries of major rivers and adjacent areas, and in the waters close to the largest cities such as Bangkok, Jakarta, and Manila.
  38. Finn et al., n. 9, pp. 11-19.
  39. By far the most serious of all blow-outs took place in the Gulf of Mexico in June 1979. See Katherine Hatch, "Ixtoc One is One of Many Problem Oil Wells in the World," *World Environment Report* (8 October 1979), p. 6.
  40. Adapted and developed from Table 1 in Valencia (1979), n. 1, pp. 10-11.
  41. See symposium on "Sea-Use Planning in the North Sea," chaired by Albert W. Koers, in John K. Gamble, ed., *Law of the Sea: Neglected Issues* (1979), pp. 423-499.
  42. A 3 rating for a particular combination of two uses means that there is sufficient evidence of potential incompatibility to justify environmental impact research or similar assessment before the introduction of the second use, to warrant special care in the construction and design of the applicable technology, and to necessitate the monitoring of the impact one use has upon the other. A 3 rating may be the most tentative of all four categories, being contingent on the results of such investigation. The evidence for a 1 rating should be the most compelling of all.
  43. *World Conservation Strategy: Living Resource Conservation for Sustainable Development* (1980). (Prepared by IUCN with the advice, cooperation, and financial assistance of UNEP and World Wildlife Fund [WWF] and in collaboration with FAO and UNESCO).
  44. The marine-related sections of the report were drawn from a number of recent studies: eg, John Clark, *Coastal Ecosystem Management: A Technical Manual for the Conservation of Coastal Zone Resources* (1977); and G. Carleton Ray, *A Preliminary Classification of Coastal and Marine Environments* (IUCN, 1975).

45. *World Conservation Strategy*, n. 43, section 5.
46. *Ibid.*, section 6.
47. *Ibid.*, section 7.
48. *Ibid.*, section 1.
49. *The Shorter Oxford English Dictionary*, vol. 2 (1944–1967), defines “region” as “a more or less defined portion of the earth’s surface . . . as distinguished by certain natural features, climatic conditions, special fauna or flora, or the like.”
50. Lewis M. Alexander, *Regional Arrangements in Ocean Affairs* (Office of Naval Research, 1977), p. 11. Alexander quotes Derwent Whittlesey’s definition of region as “an intellectual concept, an entity for the purposes of thought, created by the selection of certain features that are relevant to an areal interest or problem and by the disregard of all features that are considered to be irrelevant.” Note that most modern treatises make little or no mention of regions as an element of political geography. *See*, for example, W. Gordon East and J. R. V. Prescott, *Our Fragmented World: An Introduction to Political Geography* (1975). Although regions occasionally receive special attention in geopolitical writings (eg, Saul B. Cohen, “Geostrategic and Geopolitical Regions,” in Roger E. Kasperson and Julian V. Minghi, eds., *The Structure of Political Geography*, 1969, pp. 178–186) and as “core areas” at the subnational level (eg, Harm J. de Blij, *Systematic Political Geography*, 2nd ed., 1973, pp. 83–115), the contemporary emphasis in regional analysis tends to be on “functions of politically organized areas.” *See* Richard Hartshorne, “The Functional Approach in Political Geography,” in Kasperson and Minghi, n. 50, p. 34–49.
51. “It is quite absurd and illogical to seek to establish regional boundaries in detail. They must remain vague, for they are boundaries of a generalization. If, for practical purposes, one finds that he must draw boundaries, then he should do so in a frankly arbitrary manner.” Attributed to Preston E. James, in Bruce M. Russett, *International Regions and the International System: A Study in Political Ecology* (1967), pp. 6–7.
52. Oran Young, *Resource Management at the International Level: The Case of the North Pacific* (1977), pp. 25–26. *See also* Maria Eduardo Goncalves, “Concepts of Marine Region and the New Law of the Sea” (1979), *Marine Policy* 3(255):257–258.
53. These areas of inquiry are distinguished in Ernst B. Haas, “The Study of Regional Integration: Reflections on the Joy and Anguish of Pre-theorizing,” in Leon N. Lindberg and Stuart A. Scheingold, eds., *Regional Integration: Theory and Research* (1971), pp. 7–8.
54. Ernst B. Haas, “The Challenge of Regionalism,” *Int’l Organ.* 12(440) (1958):442. According to Haas, one of the leading exponents, the pio-

- neering work in the theory of regional integration is Karl W. Deutsch, *Political Community at the International Level: Problems of Definition and Measurement* (1954). See also Joseph S. Nye, *International Regionalism: Readings* (1968), and *Peace in Parts* (1971).
55. Sometimes this trend is advocated as a buffer against power politics; sometimes it is viewed as screening less visible trends toward the establishment of "spheres of influence." For an even-handed account, see Hedley Bull, *The Anarchical Society: A Study of Order in World Politics* (1977), pp. 305-311.
  56. An "international resource region" has been defined as a "geographical area demarcated in terms of the functional issues associated with the management of natural resources and the maintenance of environmental quality." Young, n. 52, pp. 22-23.
  57. Douglas M. Johnston, "New Uses of International Law in the North Pacific" (1968), *Wash. Law Rev.* 43(77).
  58. Lewis M. Alexander, "Regionalism at Sea: Concept and Reality," in Douglas M. Johnston, ed., *Regionalization of the Law of the Sea* (1978), p. 5.
  59. The nine ocean basins are: North Atlantic; South Atlantic; Indian; Arctic; Antarctic; North Pacific; South Pacific; West Central Pacific; and East Central Pacific.  
The twenty-four semienclosed seas are: the Gulf of Aden; the Arabian Sea; the Andaman Sea; Baffin Bay-Davis Strait; the Baltic Sea; the Bay of Bengal; the Bering Sea; the Black Sea; the Caribbean Sea; the Celebes Sea; the East China-Yellow Sea; the Gulf of Guinea; the Sea of Japan; the Mediterranean Sea; the Gulf of Mexico, the North Sea; the Sea of Okhotsk; the Gulf of Oman; the Persian (Arabian) Gulf; the Red Sea; the Solomon Sea; the South China Sea; the Sulu Sea; and the Timor-Arafura Seas. Alexander, n. 50, pp. 17-18.
  60. Alexander, n. 50, pp. 19-20.
  61. Alexander, n. 58, pp. 5-6; and Alexander, n. 50, p. 22.
  62. Edward L. Miles, "On the Utility of Regional Arrangements in the New Ocean Regime," in Johnston, n. 58, p. 250.
  63. Miles, n. 62, pp. 259-260. For Miles' comments on the "regional integration" writings of Haas and Nye, see pp. 262-264.
  64. Richard B. Bilder, "The Consequences of Regionalization in the Treaty and Customary Law of the Sea," in Johnston, n. 58, pp. 31-44.
  65. Bilder, n. 64, p. 32.
  66. For example, L. D. M. Nelson, "The Functions of Regionalism in the Emerging Law of the Sea as Reflected in the Informal Composite Negotiating Text," in Johnston, n. 58, pp. 17-30.
  67. *Ibid.*, p. 18.
  68. *Ibid.*, p. 25.

69. Informal Text, n. 4.
70. Many of these references are contained in Part XII of the Draft Convention ("Protection and Preservation of the Marine Environment"). For a listing and analysis of such references, see James D. Kingham and D. M. McRae, "Competent International Organizations and the Law of the Sea" (1970), *Marine Policy* 3(106). Note, however, that this useful study deals only with the global organizations that are apparently intended in these references.
71. See, for example, Article 22 of the Draft Convention (sea lanes and traffic separation schemes in the territorial sea), where the reference to "competent international organizations" apparently is directed only at global agencies, such as IMCO, UNEP, FAO, and IAEA; Article 65 (marine mammals), where the reference to "international organization" is both global (eg, International Whaling Commission) and regional (eg, North Pacific Fur Seal Commission); and Article 64 (highly migratory species), where the reference to "appropriate international organizations" is to be interpreted principally as referring to the regional fishery commissions that deal with tunas.
72. For example, Articles 69 (right of landlocked states) and 70 (right of states with special geographical characteristics).
73. For example, Articles 63 (stocks straddling economic zone boundary), 66 (anadromous stocks), 118 (conservation of high seas fishery resources), and 123 (enclosed or semienclosed seas).
74. For example, Articles 51 (fishing rights in archipelagic waters), 62 (access to surplus stocks in economic zones), 67 (catadromous species), 74 (delimitation of economic zone boundaries), and 83 (delimitation of continental shelf boundaries).
75. For example, Articles 15 (delimitation of territorial sea boundaries) and 47 (archipelagic baselines).
76. Article 276 (1). For an enumeration of the functions of such regional centers, see Article 277.
77. A number of countries, both regional and extraregional, maintain territorial claims to portions of the Antarctic landmass, but all such claims have been "frozen" under the provisions of the Antarctic Treaty of 1959. The legal result is that no state has an acknowledged territorial existence on the southern perimeter of the Southern Ocean and no "fully regional" arrangement in the region is, therefore, possible.
78. Alexander, n. 50, pp. 22-23, includes forty-two scientific research programs, projects, or organizations in his listing of "regional organizations" in ocean affairs. See also Albert W. Koers, *International Regulation of Marine Fisheries* (1973), pp. 77-79, who includes the ICES in his listing of international fishery organizations.
79. Most of the "official" debate merged with the nonofficial. For a listing

- of the "hybrid" conference held on this subject in 1971, see Brian Johnson, "The United Nations' Institutional Response to Stockholm: A Case Study in the International Politics of Institutional Change," in David A. Kay and Eugene B. Skolnikoff, eds., *World Eco-Crisis: International Organizations in Response* (1972), p. 88. On general trends in official thinking, see Richard N. Gardner, "The Role of the UN in Environmental Problems," *ibid.*, pp. 69-86.
80. Kay and Skolnikoff, *op.cit. passim*; and John Lawrence Hargrove, ed., *Law, Institutions, and the Global Environment* (1972). In the latter see, especially, Abram Chayes, "International Institutions for the Environment," pp. 1-26. See also Thomas W. Wilson, Jr., "Creating Mechanisms for International Environmental Action: Requirements and Response" (1973), *Stanford J. International Studies* 7(113); and Minda R. Shechter, "Organizational Instruments for Effectiveness: A Comparative Study with Recommendations to a United Nations Environmental Agency," *ibid.*, 123.
  81. The Stockholm conference adopted three principal instruments: the U.N. Declaration on the Human Environment; an Action Plan consisting of 109 recommendations; and a detailed resolution on institutional and financial arrangements (U.N. Doc. A/CONF. 48/14). Reprinted in *Int'l Leg. Mats.* 11(1416) (1972).
  82. *Ibid.*, 1466. This "arrangement" was to consist of a Governing Council for Environmental Programmes, an Environment Secretariat headed by an executive director, an Environment Fund, and an Environmental Co-ordinating Board. For a listing of the functions assigned to the Governing Council, see *ibid.*, 1467. In recent years, UNEP has been described, by two of its officials, as a "mobilizer and coordinator of efforts at all levels to protect and preserve the biosphere from unnatural stresses due to human activities." Peter S. Thacher and Nikki Meith-Avcin, "The Oceans: Health and Prognosis," in Elisabeth Mann Borgese and Newton Ginsburg, eds., *Ocean Yearbook I* (1978), p. 317.
  83. G. A. Res. 2997 (XXVII), 26 U.N. GAOR, Supp. 30, pp. 43-45 (1972). This decision was taken after receiving the *Report of the Secretary-General* (United Nations Conference on the Human Environment, U.N. Doc. A/8733, 26 September 1972). A comparison of these two documents shows that some time between 26 September and 15 December the reference to a "Governing Council for Environmental Programmes"—the language used at Stockholm—was replaced by the reference to a "Governing Council of the United Nations Environment Programme." Similarly, the "Executive Director" became the "Executive Director of the United Nations Environment Programme." It must be inferred that views on the format and status of UNEP, as a single

- agency, had crystallized behind the scenes in the fall of 1972, but the process of determination is not reflected in the official UN records.
84. The first listing of UNEP program priorities, contained in UNEP, *Report of the Governing Council on the Work of Its First Session* (217 U.N. GAOR, Supp. 25 [Doc. A/9025], pp. 39-43 [1973]), was somewhat different: human settlements, human health, habitat and well-being, land, water, and desertification; education, training, assistance and information; trade, economics, technology, and transfer of technology; oceans; conservation of nature, wildlife, and genetic resources; and energy. This listing in the following year's report remained unchanged, except that the category "education, training, assistance and information" disappeared (28 U.N. GAOR, Supp. 25, Doc. A/9625), pp. 59-64 (1974). In the 1975 report the listing of "priority subject areas" was: human settlements and habits; health of people and of the environment; terrestrial ecosystems, their management and control; environment and development; oceans; energy; and natural disasters (29 U.N. GAOR, Supp. 25, Doc. A/1125, 1975) pp. 26-40. Since 1976 the listings have remained unchanged, with "oceans" occupying the fourth priority spot in a seven-point program.
  85. Douglas M. Johnston, "International Environmental Law: Recent Developments and Canadian Contributions," in Ronald St. J. Macdonald, Gerald L. Morris, and Douglas M. Johnston, eds., *Canadian Perspectives on International Law and Organization* (1974), pp. 555-611.
  86. See, for example, UNEP, *Report of the Governing Council on the Work of Its Fifth Session (9-25 May 1977)*, (U.N. GAOR, Supp. 25, Doc. A/32/25, 1977), pp. 42-43.
  87. Thacher and Meith-Avcin, n. 82, p. 318.
  88. It is normal now to refer to UNEP's "co-ordinating and catalytic role" and its responsibility for "promoting and uniting the effort of all countries and organizations to solve major environmental problems." See, for example, UNEP, *Report of the Governing Council on the Work of Its Seventh Session (18 April-4 May 1979)* (GAOR 34th Session, Supp. No. 25) (hereafter referred to as UNEP, *Seventh Governing Council Report*).
  89. For the latest effort to articulate the relationship between development and conservation needs, see *World Conservation Strategy*, n. 43, passim.
  90. Recently, however, UNEP has taken a more active interest in the development of international environmental law. Douglas J. Johnston, "International Environmental Law: Ten Years after Stockholm" (1982), *Year Book on World Affairs*, in press. For a recent evaluation of UNEP's performance in general, see "UN Environment Program Pushes On Despite Pitfalls," *Conservation Foundation Letter*, December 1981, pp.1-8.
  91. For suggested explanations why regionalization developed so late in

- ocean management, *see* Dominique Alheritiere, "Regional Approaches to Marine Pollution Control" (1981), pp. 1-2, unpublished.
92. "Environmental assessment" was envisaged as including evaluation and review, research monitoring, and information exchange. "Environmental management" encompassed goal-setting and planning, and international consultation and agreements. "Supporting measures" consisted of education and training, organization, financing, technical cooperation, and public information. "Action Plan for the Human Environment," *Int'l Leg. Mats.* 11(1421)(1972).
  93. Peter S. Thacher and Nikki Meith, "Approaches to Regional Marine Problems: A Progress Report on UNEP's Regional Seas Program," in Borgese and Ginsburg, eds., *Ocean Yearbook II* (1980), p. 155.
  94. UNEP, *Seventh Governing Council Report*, p. 36.
  95. S. Keckes, "Theory and Practice of the United Nations Environment Programme in Dealing with Regional Marine Problems," unpublished (1977), cited in Thacher and Meith, n. 93, note 3. For a challenge to the orthodox goal-setting approach to environmental planning, *see* Gerhard Kade, "Introduction: The Economics of Pollution and the Inter-disciplinary Approach to Environmental Planning," *Int'l Soc. Sci. J.* 21(4) (1970), reprinted in Morton and Marsha Golden, eds., *Environmental Management: Science and Politics* (1972), pp. 209-219. On the methodology of environmental management, *see* Granville H. Sewell, *Environmental Quality Management* (1975), pp. 7-13; and W. R. Derrick Sewell and Harold D. Foster, "Environmental Risk: Management Strategies in the Developing World" (1976), *Environ. Man.* 1(49).
  96. Comment, "The Challenge of International Environmental Management: A Critique of the United Nations Environment Programme" (1978), *Virg. J. Int'l L.* 18(269):274-276.
  97. Alheritiere, n. 31, p. 3.
  98. Thacher and Meith, n. 93, p. 157.
  99. Yet, even in the Mediterranean not nearly enough is known about the population of fish stocks. Sidney Holt, "Mediterranean Fisheries," in Norton Ginsburg, Sidney Holt, and William Murdoch, eds., *The Mediterranean Environment and the Development of the Region (Pacem in Maribus III)*, 1974), pp. 154-172.
  100. The ranking of marine regions according to the degree of risk of conflict is bound to be a somewhat impressionistic undertaking. *See*, for example, Douglas M. Johnston, "Development, Environment and Marine Resources in the North Pacific," in Hedley Bull, ed., *Asia and the Western Pacific: Towards a New International Order* (1975), pp. 232-261.
  101. For an early warning about the problem, *see* Lord Ritchie-Calder, *The Pollution of the Mediterranean* (1971). *See also* W. W. Murdoch and C. P.

- Onuf, "The Mediterranean: An Ecological Overview," in Ginsburg, Holt, and Murdoch, n. 99, pp. 12-47.
102. Although some have emphasized the fundamental unity of the "Mediterranean civilization" (eg, Andre Siegfried, *The Mediterranean*, tr. Hemming, 1948), most scholars have taken a less romantic view of the history of the region (eg, Ernle Bradford, *Mediterranean: Portrait of a Sea*, 1971). Even in recent years it has been common to divide the region terrestrially into four regions (the Europe Western basin; the African Western basin, the Balkan peninsula, and the Near East): Donald S. Walker, *The Mediterranean Lands* (1960). It is now more fashionable, however, to look at the Western Mediterranean as a single arena of regional interaction: Alvin J. Cottress and James D. Theberge, eds., *The Western Mediterranean: Its Political, Economic and Strategic Importance* (1972); and Robert M. Burrell and Alvin J. Cottrell, *Politics, Oil and the Western Mediterranean* (1973).
103. Most of the Mediterranean states contribute to the problem of dumping untreated sewage directly into the sea. Indeed, it has been estimated that 90 percent of all the raw sewage in the region is pumped into the waters offshore: "Mediterranean Pollution: The Tie that Binds," *The Interdependent* 3 (1 April 1976):2, cited in Debora de Hoyo, "The United Nations Environment Program: The Mediterranean Conferences" (1976), *Harvard Int'l L. J.* 17(639):note 2. In many countries the rapid growth in resident or nonresident population—or, in a few cases, both—aggravates this form of pollution. In addition, industrialization in most of these countries has led to a serious deterioration in controlling the disposal of industrial wastes in river estuaries and other coastal areas. Moreover, the development of oil fields in Libya and Algeria has increased the danger of oil pollution. For a general discussion, see de Hoyo, this note. Cyprus attended the second of these conferences, but not the first. Algeria attended the first, but not the second. Albania attended neither. All the other fifteen Mediterranean states attended both.
104. Alheritiere, n. 91, *passim*.
105. Cyprus attended the second of these conferences, but not the first. Algeria attended the first, but not the second. Albania attended neither. All other Mediterranean states attended both.
106. Text in *Int'l Leg. Mats.* 14(475)(1975).
107. *Ibid.*, 481.
108. *Ibid.*, 490 and 495.
109. Text in *Int'l Leg. Mats.* 15(290)(1976).
110. *Ibid.*, 300.
111. *Ibid.*, 306.
112. *Ibid.*, 311 and 314.

113. Text in *Int'l Leg. Mats.* 19(1980).
114. "Acceptability" is normally first indicated by the grant of government "approval" to the Action Plan itself. The act of approval seems to vary in degree of formality from state to state, but nowhere is it so formal as to be legally equivalent to an act of consent, such as is required to accept an international agreement. It might be assumed, however, that the government approval of a UNEP Action Plan normally requires the support of a cabinet-level decision. To the legally minded, a state (as distinguished from a government) has not accepted obligations until its consent is given through adoption (by signature and ratification, or accession) of a legally binding treaty instrument, such as a convention, agreement, or protocol.
115. The "efficacy," or beneficial effect, of an environmental arrangement may be difficult or impossible to establish with any degree of certainty without the investment of years of scientific research. A tendency exists, however, to judge an environmental initiative efficacious if it generates an impressive volume or kind of activity that is believed to be desirable.
116. The value of an initiative as a "model" has declining internal relevance as the program develops from region to region, but later, more carefully developed initiatives within the program may have a higher value than earlier initiatives as a model for other programs or other agencies.
117. For example, because of the costs involved in mounting an efficacious program, a government may be more likely to regard a program as "acceptable" if it does not commit the government to a high standard of "efficacy." By the same token, an initiative that is seen to be efficacious in one region may not be followed too readily elsewhere if the costs are substantial.
118. The European communities also participated. The seventeen states invited fell into two categories: those which had become parties to the three agreements, and those nonparty states which were "(a) in the process of undergoing the necessary national formalities toward eventual ratification; and (b) actively participating in the Mediterranean Action Plan as a whole." UNEP, *Report of the Intergovernmental Review Meeting of Mediterranean Coastal States and First Meeting of the Contracting Parties to the Convention for the Protection of the Mediterranean Sea against Pollution and its Related Protocols* (Doc. UNEP/1 G. 14/9, 20 April 1979), p. 1.
119. "News from UNEP's Regional Seas Programme," *The Siren* 12(Spring 1981):8.
120. *Ibid.*
121. *Ibid.*
122. As one of their first decisions under the Action Plan in 1975, even before adoption of the Barcelona Convention and accompanying protocols, the

governments of the Mediterranean littoral states approved a Co-ordinated Mediterranean Monitoring and Research Program (MED POL). This program encompassed seven pilot projects to be carried out by approved national institutions and supervised by UNEP in cooperation with FAO, UNESCO, WHO, World Meteorological Organization (WMO), and the International Atomic Energy Agency (IAEA). These studies confirmed the suspicion that most pollution in the Mediterranean comes from land-based sources (municipal sewage, industrial wastes, fertilizers, and pesticides). For a survey of the evidence, see U.N. Doc. UNEP/IG. 11/INF.5 (10 November 1977) ("Pollutants from Land-Based Sources in the Mediterranean"). For a brief description of MED POL, see Lawrence Juda, "The Regional Effort to Control Pollution in the Mediterranean Sea" (1979), *Ocean Management* 5(125): 141-143.

The other area of research to be undertaken by the Mediterranean governments is outlined in the Integrated Planning Component of the Action Plan. A prominent feature of that component is the "Blue Plan," a coordinated program of regional cooperation, which was adopted at an intergovernmental meeting in Split, Yugoslavia, early in 1977; see U.N. Doc. UNEP/IG.5/7 (21 February 1977) ("Report of the Intergovernmental Meeting of Mediterranean Coastal States on the Blue Plan"). This plan, whose primary objective is the economic and social development of the region on a sound ecological basis, is of special interest to the less developed countries of the region. To them, the success of the Blue Plan would be the most significant test of the Action Plan as a whole. But it is precisely in this context, where environmental planning is integrated with economic development, that the greatest difficulties arise from differences in national priorities. At the Split meeting in 1977, six subjects were selected for integrated planning on a priority basis under the Blue Plan: soil protection; water resource management; fisheries and aquaculture; human settlements; tourism; and technologies for energy. Thatcher and Meith, n. 93, pp. 21-26.

Despite this apparent consensus on priorities, the Blue Plan has been slow in overcoming the problems caused by inadequate funding and the lack of technical expertise. Several of the governments are particularly reluctant to commit resources to the study of the critical problems associated with land-based pollution of the Mediterranean: Juda, n. 104, pp. 143-145. Another apparent accomplishment under the Action Plan was the establishment in Malta of the Regional Oil Combating Centre directed by UNEP in cooperation with IMCO and the host government. *Ibid.*, p. 140. But this center also suffers in operational effectiveness from a scarcity of funds and expertise.

123. Kečkeš, Stjepan, "Monitoring and Surveillance: The Regional Seas Programme," *Proceedings Pacem in Maribus X* (International Ocean Institute, 1981), pp. 45-56 at 51.
124. The Draft Protocol for Protection of the Mediterranean against Pollution from Land-Based Sources will be based on research undertaken within the framework of the Action Plan.
125. Behind this kind of debate lies a philosophical issue concerning the relationship between form and substance. See Ernest B. Haas, "Is There a Hole in the Whole? Knowledge, Technology, Interdependence, and the Construction of International Regimes," *Int'l Organ* 29(827)(1975).
126. The Governing Council of UNEP operates an Environment Fund from which it may draw to help finance designated undertakings on a temporary basis. For the most recent allocation by the UNEP Governing Council to the Regional Seas Programme, see, *The Siren* 13(Summer 1981):12.
127. U.N. Doc. UNEP/IG. 14/9. This was approved by the UNEP Governing Council in May 1979 (text of resolution reproduced in *Environ. Policy and Law* 5(151)(1979).
128. If this reluctance is due chiefly to a perceived clash between environmental management and development priorities in the developing world, future difficulties may be particularly severe in West Africa, the Caribbean, and the Southwest Pacific. If it is due rather to developed-versus-developing tensions, then East Asia may expect to face the stiffest test.
129. On problems facing the Red Sea and Gulf of Aden Environment Programme (PERSCA), see, *The Siren* 14(Fall 1981):6-7.
130. The eight participating countries of the region are Jordan, Saudi Arabia, Yemen Arab Republic, People's Democratic Republic of Yemen, Somalia, Ethiopia, Sudan, and Egypt.
131. Like the Arabian-Persian Gulf, "the Red Sea is an area of rapid increase in oil exploration, production, and shipping, and the environmental impact is expected to be considerable. Pollution by oil from spills and intentional discharge as well as the physical disturbance of construction and dredging operations are all potentially stressful to local benthic communities." Thacher and Meith-Avcin, n. 82, p. 335.
132. *The Siren*, 12(Spring 1981):2-3.
133. The Action Plan calls for intensive development of the region's capabilities in basic and applied marine sciences, through seminars, workshops, training courses, and the establishment of laboratories. It may, therefore, be several years before local research can be carried out to provide the basis of environmental management. But the Red Sea, which seems to be a "new" sea, is intriguing to marine scientists around the world. *The Siren*, 14(Fall 1981):6-7.

134. U.N. Doc E/5971, 18 May 1977 ("Coastal Area Development and Management and Marine and Coastal Technology"), reproduced in Borgese and Ginsburg, eds., *Ocean Yearbook: I* (1978), pp. 350-375.
135. Iran, Iraq, Kuwait, Saudi Arabia, Bahrain, Qatar, United Arab Emirates, and Oman.
136. Final Act of the Kuwait Regional Conference of Plenipotentiaries on the Protection and Development of the Marine Environment and the Coastal Areas (1978), reproduced in Borgese and Ginsburg, eds., *Ocean Yearbook II* (1980), pp. 516-546; and in *Int'l Leg. Mats.* 17(501)(1978).
137. The Kuwait Regional Convention for Cooperation on the Protection of the Marine Environment from Pollution and the accompanying Protocol Concerning Regional Cooperation in Combating Pollution by Oil and Other Harmful Substances in Cases of Emergency: *Int'l Leg. Mats.* 17(511, 526)(1978).
138. This fund amounted to almost US \$6 million for an initial period of two and a half years.
139. About 60 percent of all oil carried in ships around the world—around a billion tons per year—is exported from this region. Thacher and Meith, n. 93, p. 170.
140. For a description of the cooperative projects to be managed by the organization, see Thacher and Meith, n. 93, pp. 170-171.
141. The two agreements entered into force on 30 June 1979, after the deposit of five instruments of ratification (Bahrain, Iraq, Kuwait, Oman, and Qatar).
142. On the first ROPME meeting and its accomplishments, see, *The Siren* 13(Summer 1981):8-9.
143. There are no less than twenty existing or planned major industrial centers along the gulf coast, representing something between US \$20 and \$40 million per kilometer of coastline. Thacher and Meith, n. 93, p. 170.
144. This region has been defined as including the marine environment and coastal area of nineteen states from Senegal in the north to Namibia in the south, encompassing the Gulf of Guinea and adjacent waters to the north and south.
145. Benin, Cameroon, Gabon, The Gambia, Ghana, Ivory Coast, Liberia, Nigeria, Senegal, Sierra Leone, and Togo.
146. Final Act of Conference of Plenipotentiaries on Cooperation in the Protection and Development of the Marine and Coastal Environment of the West and Central African Region (1981). On the first steps to be taken in implementing the Action Plan, see *The Siren* 14(Fall 1981):5.
147. No less than twelve of these nineteen West African states are "shelf-locked" by virtue of the concavity of the Gulf of Guinea. The remaining

- seven have short congested coastlines along an approximately 200-mi facade facing the East Central Atlantic.
148. Because of the length of time it often takes to resolve maritime boundary disputes, through negotiation or adjudication or both, it may become fairly common for neighboring states (eg, Canada and the United States in the Gulf of Maine) to seek some kind of tentative or provisional management arrangement pending such a resolution. The West African situation is special only in the number of neighboring states bordering on an area that appears to be a "natural" management unit.
  149. Moreover, like the Southwest Pacific, the Caribbean consists in large part of newly independent microstates, with the infrastructure of a country rather than of a nation, as well as several colonial territories still evolving toward national independence. Altogether, the region includes nineteen island nations, a dozen of which might be regarded as having serious problems of resource deficiency.
  150. Strictly speaking, the Caribbean region consists of two semienlosed seas: the Caribbean Sea proper and the Gulf of Mexico. For a recent discussion of the future of marine regionalism in the region as a whole, see Andres Rosental, "Some Brief Considerations on a Caribbean Condominium" (1978) and the resulting discussions, in Johnston, n. 58, pp. 47-62.
  151. Thacher and Meith, n. 93, p. 32.
  152. For example, a detailed mapping inventory of the Caribbean marine environment, under the direction of Dr. Carleton Ray for IUCN, was completed in 1979.
  153. U.N. Doc. UNEP/RS/PAC, p. 11.
  154. See Doc. E/CEPAL/PROY. 3 series of documents.
  155. *The Siren* 13(Summer 1981):2-3.
  156. The Wider Caribbean region includes no less than 27 "states, territories, and islands," possessing varying degrees of political and economic autonomy. Of these 27, 23 were represented at the intergovernmental conference which approved the Action Plan, and the telegram of support sent by St. Vincent and the Grenadines might be construed as a 24th vote of endorsement.
  157. An updated version of the Directory of Mediterranean Marine Research Centres, listing more than 140 institutions, was published by the International Oceanographic Commission (IOC) in 1977.
  158. Thacher and Meith, n. 93, p. 173.
  159. Even the South China Sea "subregion" is an area of immense complexity. Valencia (1979), n. 1.
  160. This division of the region was recommended at the Penang International Workshop on Marine Pollution in East Asian Waters.

161. The member nations are Indonesia, Malaysia, the Philippines, Singapore, and Thailand.
162. The preparation of the Draft Plan, originating in the Penang Workshop of April 1976, had been accelerated by the prospect of an emerging framework of subregional cooperation in the marine sciences in accordance with an Indonesian proposal approved by the ASEAN Permanent Committee on Science and Technology at its sixth meeting at Kuala Lumpur in December 1976. The ASEAN Working Group on Marine Sciences, which held its first meeting at Jakarta in June 1979, agreed on two projects: (1) the ASEAN Cooperative Studies on Tides and Tidal Phenomena and (2) the ASEAN Cooperative Programme on Oceanography. Other ASEAN groups have been involved in the preparations, such as the ASEAN Experts Group on Marine Pollution, which had met five times by February 1979, and the ASEAN Experts on the Environment, which had met twice by September 1979. Much of the institutional research resulted from a series of UNEP visits to all five nations in 1977 and follow-up discussions with ASEAN officials concerned with environmental matters.
163. Report of the Intergovernmental Meeting on the Protection and Development of the Marine Environment and Coastal Areas of the East Asian Region, U.N. Doc. UNEP/IG.26/6, p. 4.
164. For the special problems of this subregion, see *Report of the IOC/FAO (IPFC)/UNEP International Workshop on Marine Pollution in East Asian Waters* (held at Penang in April 1976)(IOC Workshop Report No. 8, 1976), pp. 25-35 (hereafter "Penang Report").
165. UNEP, *Seventh Governing Council Report*, n. 88, pp. 22-23.
166. See U.N. Doc. E/ESCAP/L.46 (No. 13). Since 1978, much of ESCAP's work on the protection of the marine environment and related ecosystems has been undertaken under a project implemented by its Environmental Co-ordinating Unit (ECU) in Bangkok, with extra budgetary assistance from Sweden. A series of national seminars conducted in ESCAP countries with severe marine pollution problems have produced significant data. See, for example, *Proceedings of the Thailand National Seminar on Protection of the Marine Environment and Related Ecosystems* (held at Bangkok in June 1979)(Office of the National Environment Board, 1979). The same ECU project planned to organize a regional seminar in the summer of 1980 to examine technological implications and legal developments. ECU has been particularly active in the collection and analysis of national legislation on marine pollution in selected countries of the ESCAP region.
167. For example, FAO and UNEP collaborated with UNESCO and IUCN in organizing the Expert Consultation Meeting on the Impact of Pollu-

- tion on the Mangrove Ecosystem and Its Productivity in Southeast Asia, held at Manila in February 1980. *See also* Thacher and Meith, n. 93, pp. 48-53.
168. At Kuala Lumpur in August 1980, the Asian Symposium on Mangrove Environment: Research and Management focused on these problems. The IUCN Commission on Ecology has formed an International Working Group on Mangrove Ecosystems to broaden the research effort.
  169. Report of IOC/FAO(IPFC)/UNEP, International Workshop on Marine Pollution in East Asian Waters (IOC Workshop Report No. 3, 1976), pp. 26-29.
  170. Munadjat Danusaputro, "Elements of an Environmental Policy and Navigational Scheme for Southeast Asia, with Special Reference to the Straits of Malacca (1978)" in Johnston, n. 58, pp. 171-178. On the problems associated with transit through the Straits and adjacent waters, *see* Letalik et al., n. 31, *passim*.
  171. UNEP, *An Introduction to the United Nations Environment Programme* (1977), p. 5.
  172. South Pacific Commission, *Regional Cooperation in the South Pacific: History, Aims and Activities* (1975). The Commission has developed an interest in conservation problems over the years. In 1971, for example, it organized the Regional Symposium on the Conservation of Nature: Reefs and Lagoons.
  173. In the process UNEP split up the only designated region that coincided with an ocean basin. *See* Alexander, n. 11.
  174. *The Siren* 14 (Fall 1981), pp. 1 and 8-9.
  175. Ken Piddington, *The South Pacific Bureau: A New Venture in Economic Cooperation* (New Zealand Institute of International Affairs, Pamphlet No. 24, 1973). *See also* South Pacific Commission *Comprehensive Environmental Management Programme* (papers prepared by the South Pacific Bureau for Economic Cooperation at the request of the South Pacific Forum and the 16th South Pacific Conference, 1977).
  176. U.N. Doc. UNEP/RS/PAC, p. 13.
  177. *Ibid.*, pp. 13-15.
  178. *The Siren* 12 (Spring 1981), p. 11; *ibid.*, 13 (Summer 1981), p. 9; and *ibid.*, 14 (Fall 1981), p. 4.
  179. For a review of early plans, *see*, *The Siren* 13 (Summer 1981), p. 7; and *ibid.*, 14 (Fall 1981), pp. 2-3.
  180. *See* for example, Charles E. Lindblem, "The Science of Muddling Through" (1959), 13 *Public Admin. Rev.* 79 and "Still Muddling But Not Yet Through" (1979), 39 *ibid.* 519. *See also* David Braybrooke and Charles E. Lindblem, *A Strategy of Decision: Policy Evaluation as a Social Process* (1963).

181. On the necessity to combat the "mystique of the national frontier" and the need to promote transboundary cooperation in environmental management, see Richard Falk, *This Endangered Planet: Prospects and Proposals for Human Survival* (1979).
182. This trend is most developed in the United States. For an early rationale, see Bostwick H. Ketchum, ed., *The Water's Edge: Critical Problems of the Coastal Zone* (1972). For a recent survey of various national approaches to coastal zone management, see Center for Ocean Management Studies, *Comparative Marine Policy: Perspectives from Europe, Scandinavia, Canada and the United States* (University of Rhode Island, 1981), pp. 47-86.
183. It seems likely that "coastal zone management" will be designated, for the first time, as an area of (admittedly secondary) priority by the Governing Council of UNEP in May 1982. This was one of eleven subject areas recommended for official designation by the *Ad Hoc* Meeting of Senior Government Officials Expert in Environmental Law held at Montevideo in November 1981. See U.N. Doc. UNEP/16.28/L.5 (6 November 1981).
184. The Montevideo meeting, n. 183, gave highest priority to three subject areas, one of which was land-based marine pollution. See Johnston, n. 90.
185. Douglas M. Johnston and Edgar Gold, "Extended Jurisdiction: The Impact of UNCLOS III on Coastal State Practice" (paper presented at the 13th Annual Conference of the Law of the Sea Institute at Mexico City, October 20-24, 1979) (in press).
186. See Alexander, n. 59.
187. It is difficult to envisage the remaining designated regions—the East Asian Seas, the Southwest Atlantic, and East Africa—as scientifically "natural" units of management.
188. For a recent recommendation regarding the role of UNEP's Regional Seas Programme, see Douglas M. Johnston and Cyrille de Klemm (in collaboration with Francoise Burhenne-Guilmin and Daniel B. Navid), "The Environmental Law of the Sea: Conclusions and Recommendations," in Johnston, n. 23, pp. 398-399.
189. Valencia (1979), n. 1, passim.
190. Docs. UNEP/W.B. 41/3 (7 March 1980), pp. 1-2, and UNEP/L.G.26/6 (29 April 1981), pp. 1-2 and 17. Objection was raised to the inclusion of the first three of this list on the ground that that work was carried out prior to the UNEP Governing Council's decision of 25 May 1977.
191. Doc. UNEP/L.G.26/6, p. 15.
192. In addition to the government-designated experts from Indonesia, Malaysia, the Philippines, Singapore, and Thailand, the meeting was at-

- tended also by representatives of United Nations Industrial Development Organization (UNIDO), FAO, UNESCO, IOC, WHO, IMCO, CCOP, and the IUCN.
193. UNEP/W.G. 41/3, p. 10. Several documents related to the legal component were circulated at Baguio: for example, Guidelines for a Convention on the Protection of the Marine Environment in the East Asian Region, prepared in cooperation with the Japan Institute of International Environmental Law (UNEP/WG. 41/INF. 24, 6 May 1980); and a Draft Protocol concerning Co-operation in Combating Pollution in the East Asian Region by Oil and Other Harmful Substances in Cases of Emergency (UNEP/WG. 41/INF. 25, 6 May 1981). Both of these documents were based on the Barcelona and Kuwait conventions and accompanying protocols adopted earlier in other regions.
  194. For more detail, see Options for Institutional and Financial Arrangements Required for the Implementation of the Action Plan for East Asian Seas (UNEP/W.G. 41/INF. 26, 20 May 1980).
  195. Report of the Meeting of the Experts to Review the Draft Action Plan for the East Asian Seas (UNEP/WG. 41/4, 8 July 1980), p. 5.
  196. *Ibid.*, p. 10.
  197. *Ibid.*
  198. *Ibid.*
  199. *Ibid.*
  200. *Ibid.*, p. 11.
  201. *Ibid.*
  202. *Ibid.*, p. 13.
  203. *Ibid.*, p. 12.
  204. *Ibid.*
  205. *Ibid.*, p. 5.
  206. *Ibid.*, p. 12.
  207. UNESCO, *Report of the Regional Meeting on the Protection of the Marine Environment and Related Ecosystems in Asia and the Pacific* (Doc. E/ESCAP/IHT. 4/21, 1 September 1980), p. 2.
  208. *Proposals for Future Activities Concerning the Protection of the Marine Environment and Related Ecosystems* (Doc. ECU/PMERE/1, 26 June 1980); S. Venkatesh, *Legislative Aspects of Protection of the Marine Environment in the ESCAP Region* (Doc. ECU/PMERE/2, 4 July 1980); and S. Setamanit, *Protection of the Marine Environment and Related Ecosystems in Asia and the Pacific: An Overview* (Doc. ECU/PMERE/3, 3 July 1980).
  209. Doc. E/ESCAP/IHT. 4/21, n. 207, pp. 31-32.
  210. UNEP, *Draft Programme Document for the Implementation of the Environmental Assessment and Environmental Management Components of the Draft Action Plan for the East Asian Seas* (UNEP/WG. 52/3, 31 October 1980).

211. UNEP, *Study on the Legal Component of the Draft Action Plan for the East Asian Region* (UNEP/WG. 52/4, 19 November 1980).
212. UNEP, *Study on Alternative Institutional and Financial Arrangements for the Implementation of the Action Plan for the East Asian Region* (UNEP/WG. 52/5, 20 November 1980).
213. *Report of the IMCO/UNEP International Workshop on the Prevention, Abatement and Combating of Pollution from Ships in East Asian Waters* (held at Manila, Philippines, 3-8 November 1980) (UNEP/WG. 52/INF. 10, 25 November 1980).
214. UNEP, *Report of the Second Meeting of Experts to Review the Draft Action Plan for the East Asian Seas* (UNEP/WG. 52/6, 12 December 1980), p. 6.
215. *Ibid.*, pp. 6-7.
216. *Ibid.*, p. 10.
217. *Action Plan for the Protection and Development of the Marine Environment and Coastal Areas of the East Asian Region* (U.N. Doc. UNEP/IG.26/6, Annex IV).
218. *Ibid.*, pp. 20-21.
219. At the Bangkok meeting the delegations pledged a collective contribution of US \$172,000, and UNEP promised to contribute US \$200,000. Only half of this latter amount, however, will be available to go directly into the Trust Fund along with the pledges of the national governments of the region. *The Nation Review* (Bangkok), 12 December 1981, p. 3. On the funding mechanisms involved, see Doc. UNEP/IG. 31/4 (14 October 1981), pp. 7-10. The procedures for managing United Nations trust funds are outlined in "Establishment and Management of Trust Funds," Doc. ST/SGB/146/Rev. 1 (United Nations, 1978).
220. For an account of FAO's origins, see Gove Hambidge, *The Story of FAO* (1955). On the frustrations of the Fisheries Division, see Joseph M. Jones, *The United Nations at Work: Developing Lands, Forests, Oceans—and People* (1965), pp. 209-215.
221. The other six were: the Northwest Atlantic; the Mediterranean Sea and contiguous waters; the Northeast Pacific; the Southeast Pacific; the Western South Atlantic; and the Eastern South Atlantic and Indian Ocean.
222. For text of Agreement and Rules of Procedure, see Deb Menasveta, *Twenty-Five Years of IPFC* (1974), pp. 40-53. Several years later it was decided that in future the term "council" should be used only to designate the Council of FAO, and that bodies established by conventions or agreements under Article XIV of the FAO Constitution, such as IOFC, should be called "commissions." FAO, *Basic Texts* (rev. ed., 1972), p. 164. The IPFC is now officially designated the Indo-Pacific Fishery Commission, but many outside FAO still refer to it as the "Council."

223. Australia, Bangladesh, Burma, France, India, Indonesia, Japan, Kampuchea, Korea (Republic of), Malaysia, Nepal, New Zealand, Pakistan, the Philippines, Sri Lanka, Thailand, the United Kingdom, the United States, and Vietnam. At the most recent meeting of IPFC, held at Kyoto in May 1980, five of the member states were unrepresented: Burma, India, Kampuchea, Pakistan, and Vietnam.
224. The IOFC region is bordered on the eastern side by a line extending north from the east coast of Australia.
225. Article IV of IPFC Agreement, in Menasveta, n. 196, p. 41. Note that Menasveta, the senior Thai delegate to IPFC, describes the council's main objective as assistance in the development and "rational" utilization of such resources. *Ibid.*, p. 1.
226. *Ibid.*, pp. 1-2.
227. *Ibid.*, pp. 4-9.
228. FAO, *Report of the 58th Session of the Executive Committee of the Indo-Pacific Fishery Commission* (Doc. IPFC/80/13), para. 16-17.
229. *Ibid.*, p. 3 (para. 16).
230. The IOFC has established subregional committees for the gulfs, the Southwest Indian Ocean, and the Bay of Bengal.
231. Opening statement by Kenneth C. Lucas, Assistant Director-General (Fisheries), FAO, to the 19th session of the Indo-Pacific Fishery Commission, Kyoto, Japan, 21-30 May 1980, p. 3.
232. "Within the areas served by Commissions like IPFC we intend to establish fisheries management areas which will in fact be *natural* management areas. This means areas whose borders are drawn, not against the grain of biological and other realities, but *with* the grain. This means, for instance, that we would group together nations with common fisheries problems and opportunities—for instance, countries which share fish stocks and fisheries and which have the cooperative advantage of cultural and other affinities. Each of these natural management areas will be served by an organization reporting to the Commission. Each will be equipped with its own multi-disciplinary technical support team: biologists, technologists, economists, legal experts and others." *Ibid.*, n. 231, p. 2.
233. FAO's boldness was exemplified by the director-general in 1979 when, in referring to the emergence of 200-mi "exclusive economic zones of fisheries," he stated his conviction that "FAO is the organization *par excellence*, and perhaps the only organization which can be of equal service to all Member Governments, in resolving the extremely complex, delicate problems arising from this extremely important development in the changing regime of the ocean." Statement by the Director-General, *Report of the Council of FAO 75th Session, June 1979* (Doc. CL 75/REP), Appendix D, p. D6. On the need for structural change, see FAO, *Report of*

- the Conference of FAO, 19th Session, Nov.-Dec. 1977 (Doc. C 77/REP), pp. 14-15.*
234. Most of the IPFC member-states have not expanded their fishing limits out to 200 mi. FAO has recently inaugurated an assistance program for developing coastal states with expanded opportunities for fishery development under extended fishery jurisdiction. For a description, see FAO, *FAO's Comprehensive Programme of Assistance in the Development and Management of Fisheries in Economic Zones* (Doc. IPFC/80/6, January 1980).
235. Lucas, n. 231, p. 4.
236. An amalgamation would assume the more extensive geographical areas of IPFC—more precisely redefined—and the larger membership of IOFC. One obvious advantage would be in the handling of highly migratory species, such as tunas. As it is, the tuna committees of IPFC and IOFC have been meeting jointly for many years. The apparent disadvantage of an unwieldy membership would be partly, if not totally, offset by the emergence of the new subregional committees designed to focus on the designated “natural management areas.” From FAO’s point of view, an amalgamation of the two regional organizations would result in a saving of administrative costs and improve the prospects of harmonizing national conservation policies in the two oceans.
237. These nations were: Burma, Cambodia, Indonesia, Japan, Laos, Malaysia, the Philippines, Singapore, Thailand, and Vietnam. Only four, however, became members of SEAFDEC: Japan, the Philippines, Thailand, and Singapore. For text of Agreement, see SEAFDEC, Aquaculture Department, *First Annual Report* (1974), pp. 36-44. Two weeks later, the Agreement was amended by the three states which had signed it in order to keep it open longer for signature by other countries. *Ibid.*, p. 45.
238. See, for example, the *Integrated Fisheries Community Development Project* (1976), the first of a series of plans put forward experimentally by the SEAFDEC Aquaculture Department in conjunction with the Philippines Bureau of Fisheries and Aquaculture Resources and the Southeast Asian Regional Center for Graduate Study and Research in Agriculture.
239. See, for example, SEAFDEC, Marine Fisheries Research Department, *Annual Reports* (1969- ) and *Proceedings of the International Milkfish Workshop Conference* (held at Tigbanan, the Philippines, in May 1976).
240. For a recent history and analysis, see R. Michael M’Gonigle and Mark W. Zacher, *Pollution, Politics and International Law: Tankers at Sea* (1979).
241. Draft Convention on the Law of the Sea, Article 276:
1. States shall, in co-ordination with the competent international organizations, the authority and national marine scientific and technological in-

- stitutions, promote the establishment, especially in developing States, of regional marine scientific and technological research centres in order to stimulate and advance the conduct of marine scientific research by developing States and foster the transfer of marine technology.
2. All States of the region shall duly co-operate with the regional centres to ensure the more effective achievement of their objectives.
242. Such a center has been proposed for the ESCAP region. *See* Doc. E/ ESCAP/L. 46 (No. 13), p. 2, para. 6. The idea of having a single regional center for training, research, and monitoring purposes is appealing, but a monitoring system for an area as extensive as the ESCAP region might have to use a number of subregional stations. One such station might be established for the South China Sea, but IMCO clearly cannot be expected to staff subregional stations around the world. The matter seems to rest with the prospects of large-scale training programs run by intergovernmental bodies, such as the United Nations University (UNU) and a number of nongovernmental organizations and universities.
  243. At present IMCO's role in vessel-traffic control is reflected chiefly in the approval of two kinds of systems: vessel-traffic separation schemes, and ship-movement reporting systems (eg, in the English Channel). IMCO has not yet developed a policy on proposals for a more comprehensive and more environmentally significant approach to vessel-traffic control through "vessel-traffic management" systems. *See* Edgar Gold and Douglas M. Johnston, "Ship-generated Marine Pollution: The Creator of Regulated Navigation" (presented at the 13th Annual Conference of the Law of the Sea Institute at Mexico City, 20-24 October 1979), in press.
  244. IMCO, *Ships' Routing* (loose-leaf binder service, 4th ed., 1970), Part B. *See also* Finn et al., n. 9, pp. 84, 87; and Danusaputro, n. 170, *passim*.
  245. Draft Convention on the Law of the Sea, Article 211(6).
  246. Gold and Johnston, n. 243.
  247. *See* p. 36, n. 162.
  248. The first serious oil pollution incident in the South China Sea was the spilling of 3380 MT of crude oil into the Malacca Strait by the Japanese tanker *Shorua Maru* in January 1975. There have also been two relatively minor spillings. In August 1976, a Philippine tanker *Diego Silang* collided with another vessel in the Malacca Strait and spilled about 6000 gal of Kuwait crude. A larger spillage—590,000 gal—resulted from an earlier collision in the Gulf of Thailand in April 1974, when a coastal vessel *Visahakit*, loaded with fuel oil, was hit by a freighter.
  249. Doc. UNEP/WG. 41/INF. 3, p. 33.
  250. The terms of reference of this group are:

- (a) To lay down the fundamental obligation of the ASEAN member countries to preserve the marine environment through the implementation of appropriate anti-pollution measures, taking into account international conventions;
- (b) To consider further national and regional or international measures for the discharge of the fundamental obligation;
- (c) To recommend broad principles for dealing with certain problems arising in connection with such national and regional or international questions relating to jurisdiction, compensation for damage and settlement of disputes, and also technical assistance schemes; and
- (d) To conduct fact-finding activities in the ASEAN region concerning marine pollution.

251. The plan provides for:

- (a) an effective reporting system to alert the member countries in case of a major oil spill;
- (b) a programme of identification and exchange of information of existing anti-pollution operational capabilities within member countries; and
- (c) a system of providing assistance to a member country in the event of a large oil spill which it alone cannot cope with, and/or which threatens a neighboring country.

The plan is designed to coordinate and integrate the actions of individual member countries in combating discharged oil under national contingency plans, but it does *not* envisage large-scale joint operations in areas remote from those provided for under these national contingency plans.

252. Doc. UNEP/WG. 41/INF. 21, pp. 6-8.

253. These problem areas have been described as follows:

- (i) monitoring the quality of the marine environment;
- (ii) scientific research pertaining to marine pollution and its effects on the living aquatic environment;
- (iii) intercalibration exercises . . . ; and
- (iv) training of scientific and technical staff engaged in marine pollution investigations.

*Report of the First ASEAN Working Group Meeting on Marine Sciences* (Jakarta, 12-14 July 1979), pp. 4-5. The meeting also pledged its scientific support in—

- (i) the development and establishment in the ASEAN region of a regional oil combating centre; and
- (ii) the formulation of marine-environmental law, regulations, and standards. *Ibid.*, p. 5.

254. *Report of the Second Meeting of the ASEAN Experts in the Environment* (Penang, 17-20 September 1979), p. 3. It may be inferred from this report that UNEP's perceptions of the region's environmental priorities had been questioned outside the context of the ASEAN Experts in the Environment.
255. See page 36.
256. See, for example, UNEP, *Seventh Governing Council Report* (18 April-4 May 1979) (GAOR 34 session, Supp. No. 25), pp. 7-9, paras. 19-30.
257. Doc. E/ESCAP/L. 46 (No. 13), p. 6, para. 4 (1979).
258. *Ibid.*
259. Of the five ASEAN countries, Thailand as well as Indonesia, Malaysia, and Singapore are especially concerned with the risks of ship-generated pollution in the Malacca Strait and adjacent waters, and Indonesia and the Philippines have a particular interest in reducing the prospect of pollution arising from offshore activities on the continental shelf.
260. ESCAP has thirty-three members and eight associate members, ranging in size from China (with well over 900 million inhabitants) to Nauru (with only 8000).

Some members have a predominantly industrial economy (Japan), while industry may be totally alien to another (Tuvalu). Australia has wide expanses of space, while the entire territory of Nauru spreads over eight (8) square miles. Singapore is at the hub of international maritime commerce, but Afghanistan has no coast. Bangladesh has one of the highest population/territory density ratios, yet substantial areas of Papua New Guinea were not extensively explored until the 1960's. Motor vehicle traffic presents acute pollution hazards in some cities such as Bangkok in the region, but one associate member has only a dozen motor vehicles in its Capital. Indonesia could be said to have a broad variety of wildlife that may be in need of protection, but the only animal wildlife found in Tuvalu are rats.

- Parvez Hassan, "Status of Environmental Protection Legislation in the ESCAP Region" (prepared for the ESCAP/UNEP Intergovernmental Meeting on Environmental Protection Legislation held at Bangkok in 1978), p. 3 (hereafter "Hassan Report").
261. ESCAP, "Progress, Proposals and Issues in Various Fields of Activity of ESCAP" (Doc. E/ESCAP/162, 3 January 1980), p. 1.
262. *Ibid.*
263. See, for example, IOC, *A Comprehensive Plan for the Global Investigation of Pollution in the Marine Environment and Baseline Study Guidelines* (Technical Series No. 14, 1976).
264. The other two are: Physical Oceanography and Marine Geology and Geophysics.

265. IOC, "Summary of the Programme of Research for the Western Pacific (WESTPAC) (Doc. IOC-XI/11, 16 August 1979), p. 1.
266. Coastal zone research has been particularly intensive in Indonesia. See, for example, Aprilani Soegiarto, *Status of Marine Pollution in Indonesia* (National Institute of Oceanology, 1976); Arthur Hanson, *Ecological Basis for Coastal Zone Management in Tropical Areas* (Institut Pertanian Bogor, 1976). In the last two or three years a wide range of national coastal zone problems in Southeast Asia have been addressed in a number of international workshops held under ASEAN and other auspices.
267. Jeffrey N. Shane, "Environmental Law in the Developing Nations of Southeast Asia," in Colin MacAndrews and Chia Lin-Sien, eds., *Developing Economies and the Environment: the Southeast Asian Experience* (1980), pp. 15-43.
268. These three problems—reconciliation with development objectives, lack of adequate scientific knowledge, and difficulties in enforcement—tend to be particularly serious in developing countries. Taking note of these problems, some modern critics argue that existing conservation programs are too dependent on biology and too heavily freighted with legal prohibitions and penalties. Particularly in the case of most *coastal fisheries*, at least, such old-fashioned programs should be replaced, it is urged, by more broadly conceived, socioeconomically formulated *systems of resource management* with positive incentives designed to produce optional involvement of the local community. What would constitute optional community involvement depends, of course, on the range of other economic opportunities in the local areas. In short, these critics regard stock conservation as merely an aspect of integrated resource management. For a recent example of this approach, see Virginia L. Aprieto, *Fishery Management and Extended Maritime Jurisdiction: The Philippine Tuna Fishery Situation* (East-West Environment and Policy Institute, Research Report No. 4, 1981), pp. 36-37.
269. For a recent discussion of the allocation and enforcement problems in fishery management in Southeast Asia, see Francis T. Christy, ed., *Law of the Sea: Problems of Conflict and Management of Fisheries in Southeast Asia* (International Center for Living Aquatic Resources Management and Institute of Southeast Asian Studies, 1980).
270. Prescott, n. 23.
271. This priority has received special attention by the IPFC in recent years. In May 1980, for example, the IPFC held a symposium on the development and management of small scale fisheries in Kyoto, Japan. In some countries, however, national fishery development planning is export oriented and focuses on offshore rather than inshore stocks. In the Philippines, for example, the tuna fishery—the country's largest fish-

- ery—employs eleven “municipal” (inshore) fishermen to every “commercial” (offshore) fisherman. Yet, the former sector is more underdeveloped than the latter. Part of the problem lies in the lack of any large-scale local market for the small tunas that are abundant in inshore areas. Aprieto, n. 269, pp. 14–20, 31–37.
272. Declaration on the Territorial Waters of the Republic of Indonesia of 13 December 1957; An Act Concerning Indonesian Waters (Act No. 4/Prp, 1960) of 18 February 1960; and Government Regulation No. 8 concerning Innocent Passage of Energy Vessels in Indonesian Waters (25 June 1962)—for a recent analysis of these claims, see Phiphat Tangsubkul, *The Southeast Asian “Archipelagic States”: Concept, Evolution and Current Practice* (1981 unpublished ms.)
273. By applying straight baselines which connect the outermost points of its islands, Indonesia has enclosed an area of 666,000 nmi<sup>2</sup> of internal waters within a perimeter of 8,167.6 nmi. The areas enclosed include the seas and straits of Sunda, Sumba, Lombok, Ombai, Molucca, and Macassar as well as numerous internal passages.
274. Hasjim Djalal, “Implementation of Agreements with Foreigners,” in Christy, n. 269, pp. 42–44.
275. Paragraph 2 of the declaration is in language which is almost identical with that of Article 56 in the Draft Convention on the Law of the Sea.
276. Decision No. 561/1973 of the Minister of Agriculture (“Surat Keputusan Menteri Pertanian No. 561/Kpts/Um/11/1973, Tentang Pemanfaatan Ikan Hasil Sampung”), *Kumpulan Perundang-Undangan/Peraturan Perikanan Laut.*, pp. 38–39; and Decision No. 40/1974 of the Minister of Agriculture (“No. 40/Kpts/Um/2/1974, Tentang Perubahan Surat Keputusan Menteri Pertanian No. 561/Kpts/Um/11/73”), *ibid.*, pp. 40–41.
277. Decision No. 1/1975 of the Minister of Agriculture (“No. 01/Kpts/Um/1/1975, Tentang Pembinaan Kelestarian Kekayaan Yang Terdapat Dalam Sumber Perikanan Indonesia”), *ibid.*, n. 276, pp. 42–43.
278. Decision No. 2/1975 of the Minister of Agriculture (“No. 02/Kpts/Um/1/1975, Tentang Pembinaan Kelestarian Kekayaan Yang Terdapat Dalam Sumber Perikanan Di Perairan Laut Irian Jaya”), *ibid.*, n. 276, pp. 44–45.
279. *Ibid.*
280. Decision No. 123/1975 of the Minister of Agriculture (“No. 123/Kpts/Um/3/1975, Tentang Ketentuan Lebar Mata Jaring Purse Seine Untuk Penangkap Ikan-Ikan Kembung, Layang, Selar, Lemutu Dan Ikan-Ikan Pelagis Sejenisnya”), *ibid.*, n. 276, pp. 47–48.
281. Decision No. 607/1976 of the Minister of Agriculture (“No. 607/Kpts/Um/9/1976, Tentang Jalur-Jalur Penangkapan Ikan”), *ibid.*, n. 276, pp. 49–53.

282. Decision No. 609/1976 of the Minister of Agriculture (''No. 609/Kpts/Um/9/1976, Tentang Daerah Penangkapan Kapal Trawl Dasar''), *ibid.*, n. 276, pp. 57-60.
283. Each trawler must carry the color of the zone to which it is assigned: red for Zone A (the Indian Ocean), green for Zone B (Strait of Malacca and South China Sea), yellow for Zone C (Strait of Karimata), and black for Zone D (eastern waters of Indonesia).
284. Djalal, n. 274, p. 42.
285. *Ibid.*, pp. 43-44.
286. The purposes of the act are said to be: ''to conserve a natural resource; to rationalise its utilisation or exploitation; to safeguard the interests of fishermen; to administer fishing activity by preventing or settling any disputes [regarding] prices etc. The law is made in order to regulate the activities of fisheries administration and the fishing industry, e.g. licensing of fishing gears, restriction on fishing seasons, establishment of closed areas; restriction on fishing methods, e.g. trawling; restriction on mesh size; prevention of water pollutions'' [*sic*]. Briefly, the act
- (i) defines and delineates the aspects of fisheries that come under Federal jurisdiction and those that come under State jurisdiction;
  - (ii) provides for the administrative apparatus to carry into effect provisions of the Act;
  - (iii) defines the powers these administrative personnel are vested with;
  - (iv) specifies offenses;
  - (v) provides safeguards against abuse;
  - (vi) details certain specific exemptions.

Malaysia, Act 210, Fisheries Act 1963 (1978 consolidation), p. 89.

287. *Ibid.*, Section 3. This section permits appeals against refusals to issue a license and revocations of existing licenses. In the case of ocean fisheries, appeal lies with the federal minister responsible under the act, and his decision is final. Apparently no provision is made for appeals against conditions under which licenses are issued.
288. *Ibid.*, Section 12(1).
289. *Ibid.*, Section 21.
290. *Ibid.*, Section 2.
291. Malaysia, Fisheries (Cockles Conservation and Culture) Regulations, 1964 (L.N. 428 of 1964).
292. Malaysia, Fisheries (Maritime) Regulations, 1967 (P.U. 49 of 1967).
293. Malaysia, Fisheries (Prohibition of Method of Fishing) Regulations, 1971 (P.U.[A] 187 of 1971).
294. Fisheries (Maritime)(Sarawak) Regulations, 1976 (P.U.[A] 401 of 1976, dated 16 December 1976).

295. In modern times the Philippine claim is based principally on four documents: the Note Verbale of 7 March 1955, delivered to the U.N. Secretary-General; the Republic Act No. 3046 of 17 June 1961 ("Act to Define the Baselines of the Territorial Sea of the Philippines"); the Republic Act No. 5446 of 18 September 1968 ("Act to Amend Section One of the Republic Act No. 3046"); and Article I of the new Constitution of 17 January 1973.
296. This claim seems to be based on an earlier UNCLOS III formulation. On the general problem of legislative diversity caused by the succession of UNCLOS III draft texts over a protracted period, *see* Johnston and Gold, n. 23.
297. For a detailed appraisal, *see* Aprieto, n. 268.
298. Aprieto, n. 268, pp. 28-30.
299. Christy, n. 269, pp. xiv-xv.
300. For a criticism of the Philippine approach to fishery management, *see* Aprieto, n. 268, pp. 29-30, 37-39, 44-49.
301. *The Translation of Fisheries Act B.E. 2490, Fisheries Act (No. 2) B.E. 2496, Act Governing the Right to Fish in Thai Fishery Waters, B.E. 2482* (Administration Division, Department of Fisheries, Bangkok, Thailand) (hereafter *Translation*).
302. Fisheries Act., B.E. 2490, S.6. Preservation fisheries are "fisheries lying within or adjoining to the compound of a monastery or place of worship, zone of the navigation lock, regulator, weir or dam, or places which are suitable for the conservation of aquatic animals" (S.8). Leasable fisheries are "fisheries in which exclusive right to fish and to cultivate aquatic animals should be granted to a person by means of tendering" (S.10). Reserved fisheries are "fisheries in which a person has been permitted to fish or to cultivate aquatic animals, and includes trapping ponds" (S. 12). *Translation*, n. 301.
303. *Ibid.*, Section 7.
304. *Ibid.*, Sections 25, 26, and 30.
305. *Ibid.*, Section 32.
306. Fisheries Act (No. 2), B.E. 2496. *Translation*, n. 301, pp. 16-18.
307. A number of Southeast Asian countries have begun to respond to the proposal for marine national parks and for training programs in wildlife management. Yet, hardly any serious effort has been made by any of these governments to prepare nationwide inventories of threatened unique ecosystems and endangered species. For proposals, *see* UNEP, *Proposed ASEAN Sub-regional Environment Programme* (1977), pp. 67-69 (hereafter ASEP).
308. UNESCO, *The Mangrove Ecosystem: Human Uses and Management Implications* (report of a UNESCO regional seminar held in Dacca, Bangla-

- desh, in December 1978) (UNESCO Reports in Marine Science, No. 8, 1979). See also Bernard Rollet, "Les utilisations de la mangrove," *Journal d'agriculture tropicale et de botanique appliqué* 12(203, 297)(1975).
309. ESCAP, "Development of Legal Instruments for Protection of the Marine Environment in Southeast Asia" (Draft Report, 1980), p. 35, para. 106 (hereafter the "Venkatesh Report").
310. Ibid., para. 105.
311. The classical work is William Morris Davis, *The Coral Reef Problem* (1928, reprinted 1969).
312. Of the 500 known species of coral, some 400 are found in Philippine waters alone. "Venkatesh Report," n. 309, p. 36, para. 107.
313. Since 1969 three worldwide congresses have been held; see *Proceedings of the First International Symposium on Corals and Coral Reefs* (held in India in 1969) (1972); *Proceedings of Second International Symposium on Coral Reefs* (held in Australia in 1973) (in 2 vols., 1974); and *Proceedings of the Third International Coral Reef Symposium* (held in the United States in 1977) (in 2 vols., 1977).
314. "Venkatesh Report," n. 309, p. 36, para. 109.
315. John E. Bardach, John H. Ryther, and William O. McLarney, *Aquaculture: The Farming and Husbandry of Freshwater and Marine Organisms* (1972).
316. "Although the initial choice may seem wide, it is restricted in practice by the biological, technological, economic and marketing criteria that determine commercial viability. . . . Relatively few species can be farmed on a large scale at the present time, and for a specific site the choice is even more restricted." P. T. Reay, *Aquaculture* (The Institute of Biology, Studies in Biology No. 106, 1979), p. 11.
317. *Asian Aquaculture* 1(6)(December 1978):4-5.
318. On its recent programs, see SEAFDEC, Aquaculture Department, *Status Report (1976)*; International Development Research Centre (IDRC), *Aquaculture in Southeast Asia (1973)* (Report on a seminar at the Freshwater Research Station, Malacca, West Malaysia, 17-25 April 1973); and "Status and Prospects of and Development Strategies for Aquaculture in Indonesia, Philippines, Singapore and Thailand," *Asian Aquaculture*, 1(4)(October 1978):4-5. For older status reports from Malaysia, the Philippines, Thailand, and Vietnam, see T. V. R. Pillay, ed., *Coastal Aquaculture in the Indo-Pacific Region* (1973), pp. 52-59, 60-67, 74-83, and 105-108, respectively.
319. An Asian Plan for Action for Aquaculture and Small Fishfarmer Development calls for the establishment of a regional data center to provide a data base necessary for effective planning and implementation of regional training programs in aquaculture. *Asian Aquaculture*, 1(3)(September 1978):1-3. Note, however, that participation in SEAFDEC is still

- limited to four countries: Japan, the Philippines, Singapore, and Thailand.
320. "Hassan Report," n. 260.
321. "Venkatesh Report," n. 309.
322. While the significance of land-based and other sources of pollution is fully appreciated, these countries are keen that the immediate thrust of action should be to combat oil pollution. With this major source of pollution under control, they are of the view that other sources like dumping of noxious and other harmful substances by vessels could be taken up in phases. Disposal of nuclear waste is understandably not a cause of concern in this area for the present, but, as installations of nuclear fuel stations are on the cards in respect of most of these countries, the question of radioactive waste disposal would soon merit very close attention. "Venkatesh Report," n. 309, p. 5.
323. "Venkatesh Report," n. 309, pp. 5-6. Mention is made specifically of overlapping jurisdictions of enforcement agencies and the inadequacy of prescribed penalties as deterrent.
324. See Table I in Douglas M. Johnston and Norman G. Letalik, "Emerging Legislative Trends in Southeast Asia," in Letalik et al., n. 31, Section 3.6 ("Regulatory Developments in Southeast Asia: Preventive and Remedial Approaches").
325. "Venkatesh Report," n. 309, p. 12, para. 34.
326. *Ibid.*, p. 7, para. 23.
327. *Ibid.*, p. 7, para. 24.
328. "It is, instead, felt that a more critical need today is to create an awareness of the importance of environmental control and thereby first 'legitimize' the subject. Equally vital is the requirement to develop the facilities (funds, laboratories, equipment) and the expertise (qualified technical staff and other supporting manpower) to sustain a sophisticated environmental regulatory framework." "Hassan Report," n. 320, p. 1. For arguments against promoting model environmental protection legislation for the region, *see ibid.*, pp. 1-2.
329. *See*, for example, Law No. 11 of 1967 (Law on Basic Provisions of Mining and its Regulations), Law No. 1 of 1973 (Indonesian Continental Shelf Act), and Law No. 17 of 1974 (Law on Supervision of Oil and Natural Gas Activities in Offshore Areas).
330. Quoted in "Venkatesh Report," n. 309, p. 29.
331. "The entrepreneur will not cause pollution of the sea . . . with crude oil or its products, noxious gas, radioactive materials, unused goods, garbage . . ." Law No. 17 of 1974, n. 329, S. 14.
332. Mining Regulations (No. 04/P/N/pertamb/1973), S. 11.

333. "Venkatesh Report," n. 309, p. 29.
334. Johnston and Letalik, n. 324.
335. Roadstead Regulation, 1925; Petroleum Transport Ordinance, 1927; Pilotage Service Ordinance, 1927; and Territorial Sea and Maritime Ordinance, 1939.
336. For example, Law No. 44/Prp, 1960; Law No. 8, 1971; Presidential Decision No. 31, 1972; Presidential Decision No. 76/Mq, 1972; and Regulation of the Minister of Mining (No. 04/P/M/pertamb/1973).
337. This plan was preceded by a Standing Operation Procedure. *See* Apriani Soegiarto, "The Potential Impact of Pollution on the Indonesian Coastal Resources, with a Special Reference to the Major Energy Shipping Routes," *in* Letalik et al., n. 31, in Section 3.4 ("The Marine Carriage of Energy Materials: Environmental Implications for Southeast Asia").
338. Draft Convention on the Law of the Sea, Articles 211, 220, and 221.
339. "No person shall discharge or spill any oil or mixture containing oil into any part of the area outside the territorial waters of Malaysia if such discharge or spill will result in oil or mixture containing oil being carried, spread or washed into Malaysian waters." Environmental Quality Act, 1974, S. 26(1). This prohibition—apparently unqualified either by the concept of fault or the proof of damage—goes beyond anything countenanced in an international treaty and is certainly unsupported by customary international law. *See* "Venkatesh Report," n. 309, p. 21.
340. *Ibid.*, p. 22.
341. For details of the Malaysian National Contingency Plan for the Mitigation and Control of Oil Spills, *see* Khalid Bin Ramli, "Safeguards and Contingency Plans of the Government to Combat Oil Pollution in the Sea," *in* Leong Tak Seng, ed., *The Sea Must Live* (Proceedings of the Third Annual Seminar of the Malaysian Society of Marine Sciences, 1980), pp. 11–14. *See also* Keynote Address of the Malaysian Minister of Science, Technology and Environment (given at the opening of the Malaysian National Seminar on the Protection of the Marine Environment and Related Ecosystems held under ESCAP auspices in Kuala Lumpur in June 1979).
342. Under Section 5 of Presidential Decree No. 979, revising Presidential Decree No. 600, the NPCC is given "primary responsibility" for promulgating "national rules and policies governing marine pollution, including but not limited to the discharge of effluents from any outfall structure, industrial and manufacturing establishment or mill of any kind" and for issuing "the appropriate rules and regulations upon consultation with the Philippine Coast Guard." The PCG, on the other hand, is empowered to "promulgate its own rules and regulations in ac-

cordance with the national rules and policies set by the National Pollution Control Commission upon consultation with the latter, for the effective implementation and enforcement of the decree and other applicable laws, rules and regulations promulgated by the government."

Section 6 provides: "The Philippine Coast Guard shall have the primary responsibility of enforcing the laws, rules and regulations governing marine pollution. However, it shall be the joint responsibility of the Philippine Coast Guard and the National Pollution Control Commission to coordinate and cooperate with each other in the enforcement of the provisions of this decree and its implementing rules and regulations, may call upon any other government office, instrumentality or agency to extend every assistance in this respect."

343. Memo Circular NR 02-77 (20 May 1977).
344. For more detail, see "Venkatesh Report," n. 309, pp. 23-24.
345. Drigot, n. 35.
346. "Venkatesh Report," n. 309, p. 30.
347. See "Report of the Philippine National Seminar on the Protection of the Marine Environment and Related Ecosystems" (held at Manila in June 1979), p. 8.
348. After the *Showa Maru* incident, the Japanese authorities—who have become a party to the 1969 Convention—as a favor made a settlement with Singapore despite doubts that can be raised about the extraterritorial applicability of the 1973 Act. See "Venkatesh Report," n. 309, p. 24.
349. The principal function of the Singapore Emergency Plan to Combat a Major Oil Pollution Disaster is to ensure that sufficient stocks of floating booms, skimming devices, and detergents are available and ready for delivery to the site of the emergency.
350. "Venkatesh Report," n. 309, p. 30.
351. *Ibid.*, p. 24.
352. See Thailand, Office of the National Environment Board, *Proceedings in Protection of the Marine Environment and Related Ecosystems* (1980).
353. H. Wallace Poston and Krasae Sindrusake, "Thailand Marine Pollution and the Harbor Department Related Activities," *ibid.*, p. 107.
354. National Environmental Policy Act, 1969 (USA).
355. The Environment Protection (Impact of Proposals Act, 1974)(Australia).
356. Office of the Juridical Council, "Legal Aspects for Protection of the Marine Environment and Related Ecosystems," in Thailand, *Proceedings*, n. 352, pp. 173-185. On the deficiencies of existing legislation, see *ibid.*, pp. 181-184.

357. Amorn Chandara-Somboon, "Toward a Meaningful Concept of Legal Protection of Marine Environment and the Related Ecosystems," *ibid.*, n. 352, pp. 186-194.
358. Suphavit Piamphongsant, "Thailand Oil Spill Contingency Planning," *ibid.*, n. 352, pp. 197-220.
359. The Petroleum Act of 1971, SS. 74 and 75.
360. The concept of coastal zone management was developed in the United States in the 1970s. See Bostwick H. Ketchum, ed., *The Water's Edge* (1972); Robert B. Ditton et al., *Coastal Resources Management* (1977); and John M. Armstrong and Peter C. Ryner, *Coastal Waters: A Management Analysis* (1978). On alternative theoretical approaches, see Timothy M. Hennessey, "Hightide: Theory and Coastal Zone Management" (1979), *Coastal Zone Management J.* 5(259).
361. Another difficulty is the fact that coastal zone management often focuses on local, rather than national, problems, and thus gives rise to constitutional complications, particularly in the case of federal states. International agencies are generally reluctant to become embroiled in matters which might become constitutionally controversial within their member states. But see n. 183, *supra*.
362. But the U.N. University (UNU) has recently sponsored in Indonesia a training program in the techniques of survey, research, and problem-solving necessary for effective coastal resource management, and research and training workshops have been held in September 1979. See also, *UNU Newsletter* 2(4) (June 1978):2.
363. The UNEP Draft Action for the Protection and Development of the Marine Environment and Coastal Areas of the South East Asian Region calls for, among other things, a regional workshop on coastal area development and management in South East Asia. Considerable emphasis is placed on pollution problems of the coastal areas, on particular vulnerable areas such as mangrove belts and coral reefs, and on the local problems of port-generated pollution. All of these matters can be regarded as coastal zone management problems. A similar emphasis on coastal problems is evident in ESCAP documents (eg, the "Venkatesh Report," n. 309), and the "Hassan Report" (n. 320) deals specifically with the need for coastal zone management legislation.
364. Another classification of regional organizations might be noted: (a) multifunctional and geographically comprehensive organizations (eg, OAS, OAU, League of Arab Nations); (b) cooperation—or integration-oriented—and geographically limited (subregional) organizations (eg, Council of Europe, EEC, ASEAN); and (c) technical or otherwise narrowly functional organizations (eg, Colombo Plan for Cooperative Economic De-

- velopment in South and Southeast Asia); in "Introduction" to Berhanykun Andemicael, ed., *Regionalism and the United Nations* (United Nations Institute for Training and Research, 1979), p. 9.
365. The phrase "international cooperation" is used so variously and so loosely that it must be regarded as "nearly meaningless." Sir Peter Smithers, "Towards Greater Coherence among Intergovernmental Organizations through Governmental Control," *ibid.*, n. 364, pp. 23-24.
366. The matter has been put bluntly by a senior international civil servant: "Whatever may be said upon polite occasions, Governments will not entrust a project to which they attach importance to a body which seems to be out of control, or to a body the composition of which is unacceptable to them for the purposes in question." *Ibid.*, n. 364, p. 31.
367. Michael Haas, "Asian Intergovernmental Organizations and the United Nations," in *ibid.*, n. 364, p. 402.
368. *Ibid.*
369. Parley W. Newman, Jr., "Regionalism in Developing Areas: United Nations Regional Economic Commissions and their Relations with Regional Organizations," *ibid.*, n. 364, pp. 343-344.
370. *Ibid.*, pp. 353-363.
371. Haas, n. 367, p. 429.
372. *Ibid.*, p. 406.
373. Newman, n. 369, p. 363.
374. Smithers, n. 365, pp. 26-27. A region, it is suggested, is "a convenient geographical area controlled by sovereign Governments whose interests in the particular subject-matter to be dealt with are sufficiently compatible for them to be able to enter into effective multilateral cooperation."
375. See note to paragraph 35 in "Conclusions and Recommendations of the *Ad Hoc* Committee on the Restructuring of the Economic Sectors of the United Nations System," endorsed by the U.N. General Assembly in its resolution 32/197 of 20 December 1977, reproduced in Andemicael, n. 364, p. 83. (Paragraph 35 calls for the establishment of "a single governing body responsible for the management and control, at the intergovernmental level, of U.N. operational activities for development.")
376. In practice, ESCAP has acquired a considerable autonomy from ECOSOC, its parent organization, and this trend seems unlikely to be reversed after the restructuring of the United Nations. Newman, n. 369, pp. 348-349.
377. See *supra*.
378. See *supra*.
379. Haas, n. 367, p. 428.
380. *Ibid.*, pp. 405 and 425.
381. ICLARM is a nongovernmental body based in Manila.