

**REVIEW OF LEGAL AND ENFORCEMENT
MECHANISMS IN THE BOBLME REGION**

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forthcoming workshop.**

**SUSTAINABLE MANAGEMENT OF
THE BAY OF BENGAL LARGE MARINE ECOSYSTEM (BOBLME)**

GCP/RAS/179/WBG

TERMS of REFERENCE for BOBLME THEME REVIEW

**REVIEW OF LEGAL AND ENFORCEMENT MECHANISMS IN THE
BOBLME REGION**

Background

A proposal has been approved under the Project Development Fund of the Global Environment Facility that will facilitate the preparation of a Strategic Action Programme (SAP) for the Bay of Bengal Large Marine Ecosystem (BOBLME). The participating countries are Bangladesh, India, Indonesia, Malaysia, Maldives, Myanmar, Sri Lanka and Thailand. Preparation of the SAP will require information on the manner in which the countries' legal and institutional frameworks allow implementation and enforcement of the proposals for management of the priority shared and transboundary issues (defined below) related to the sustainable management of the BOBLME, and options for their improvement.

Terms of reference

Under the overall responsibility of the Director, Field Operations Division (TCO), and the general supervision of the Coordinator, Operations Branch for Asia and the Pacific (RAPR), and with the guidance of the designated Technical and Operations Officers, the BOBLME Consultant will be responsible to the Regional Coordinator, FAO/BOBLME, and will work in close collaboration with the international and national members of the Programme team in carrying out the following tasks:

1. The Consultant will carry out a review of the relevant aspects of the legal and institutional frameworks in the BOBLME region which will cover the following topics:
 - Description of the current status of the countries' legal and institutional frameworks, including the traditional ownership and customary use systems, related to the sustainable management of the BOBLME, and in particular with regard to the management and enforcement of legislation on the following three priority topics: exploitation of marine living resources, especially fisheries, health of critical habitats, especially mangroves and coral reefs, and land-based sources of pollution to the coastal and marine environment.
 - Identification of shared and trans-boundary issues relating to the management and enforcement of legislation on these three priority topics in the BOBLME region, and in particular those issues for which the existing legal and institutional framework does not permit or enable the implementation and enforcement of legislation relating to the three priority topics (hereinafter referred to as "these issues");

- Analysis of the root causes as to why the existing legal and institutional framework does not adequately permit or enable the implementation and enforcement of legislation relating to the three priority topics;
- Prioritization of these issues in order of regional severity;
- Identification of current attempts to address these issues;
- Description of any knowledge gaps, policy distortions, legal and institutional deficiencies that impede the development of solutions to these issues;
- Suggested actions that should be taken to eliminate such gaps, distortions and deficiencies;
- Priorities, in terms of regional need, for comprehensive, cross-sectoral ecosystem-based actions that integrate ecological and development considerations in response to these issues, including suggestions for sectoral interventions and for the national/ regional legal and institutional mechanisms necessary for them to take place;
- Ways to assist the countries in the BOBLME region to better understand these issues and to work collaboratively to address them;
- Suggestions for location of proposed activities to address these issues in two types of areas:
 - where maximum demonstration/replication value can be achieved if it is an innovative activity
 - where the human need is the greatest.

2. The Consultant will in particular consider and address as appropriate the legal and institutional aspects of the solutions proposed for the problems identified in the eight National Reports and in the Theme Reviews on the priority topics defined above, as well as, if possible, the first draft of the study on Options for Regional Collaboration Mechanisms. The first draft of the National Reports will be provided to the Consultant as and when received by the Regional Coordinator, which should be in early September 2003. The Theme Reviews will be emailed to the Consultant on 24 November 2003, as will any additional information and recommendations arising from the eight National Workshops being held 18-31 October, 2003. The first draft of the Regional Collaboration Mechanisms Study will be emailed to the Consultant as soon as it is available. The Consultant may consult directly with the Regional Collaboration Mechanisms Consultant via phone and email.

3. This review will be conducted as a desk study. No provision is made for regional travel or consultations in support of the study. Consultations of individuals outside the

Consultant's home city may take place by voice via telephone or if necessary in writing by telefax and the long-distance telecommunications expenses incurred by the Consultant to this end will be reimbursed to the Consultant upon presentation by the Consultant of an itemized long-distance telephone/telefax bill indicating names and functions of persons consulted against the phone/fax numbers claimed for reimbursement. Because of the desk-based nature of this review, its descriptive parts, which set the stage for the analysis, will therefore draw primarily on published or otherwise extant and reasonably available information and data that do not require on-the-spot consultation of documents only available in the region. The existence of such inaccessible data should be identified with a view to considering improving its accessibility in the light of the overall purpose of enhancing data exchange in the BOBLME region.

4. A first draft in bullet points of the principal conclusions of the review will be received from the Consultant by the Regional Coordinator via email on 22 December 2003.

5. The final review, including an executive summary, will be received from the Consultant by the Regional Coordinator via email on 25 January 2004 in hard copy and on disk or CD (MSWord), and the Regional Coordinator will forward it to the FAO Regional Representative for Asia and the Pacific.

6. The substantive text of the review should be no less than 45 and no more than 65 pages in length, excluding diagrams, annexes, references, etc. The margins will be 4.0 cm on the left side and 2.0 cm on the other three sides and the text lines spaced at 1.5, not single-spaced, using Font Times New Roman 12 point. The language is English.

7. The Consultant is contracted as an international consultant by the FAO Regional Office for Asia and the Pacific (FAO-RAP) in Bangkok. (S/H)e is responsible for the substance of the review to the BOBLME Regional Coordinator, and to FAO-RAP for administrative and logistical and contractual aspects relating to the production of the review.

8. Definition of "shared/common" issues: These are similar legislative/institutional issues concerning the three priority topics that are present in two or more of the

BOBLME countries even if the subject matter or its effect does not physically straddle or cross the actual boundary (however defined) between two BOBLME countries.

9. Definition of “transboundary” issues: These are similar legislative/institutional issues concerning these three priority topics that two or more countries have in common and that are either likely to require collaborative interventions by the countries concerned or for which a single-country intervention would achieve maximum demonstration/replication value for the BOBLME region as a whole.

Duty station:	Home station (no travel)
Entry on duty date:	Soonest
Duration:	65 days (WAE) to 25 January 2004
Language:	English

Executive Summary

This study examines the legislative and enforcement aspects of national law in relation to achieving a large marine ecosystem in the Bay of Bengal region.

It examines the laws of the individual members of the BOBLME (Bangladesh, India, Indonesia, Maldives, Malaysia Myanmar, Sri Lanka, and Thailand), considering in particular their characteristics with respect to the setting up of the exclusive economic zone, the environment, traditional and customary rights, land based pollution and protection of critical habitats.

The study has revealed that most laws, while adequate in terms of achieving certain limited objectives, such as controlling fishing within the EEZ, are non-existent when it comes to dealing with the high seas. There is a need to give effect to recent Agreements, in particular, the 1995 UN Fish Stocks Agreement and the FAO Compliance Agreement. More importantly, there is an absence of modern management concepts in the basic marine laws concerning the objectives of long-term sustainable use, the precautionary approach and the need for ecosystem perspectives to underpin governmental actions in the marine sector. These should be introduced, possibly as clauses in key legislation stating the objectives of laws applying to the marine sector.

While most countries have laws which would have provided a basis for protecting critical habitats, results were mixed, largely due to inadequate implementation of these laws.

While most countries of the BOBLME region have laws which would have provided a basis for controlling land-based pollution, there was a low level of enforcement of those laws. In some instances, the fact that the country in question had a federal system of government was a complicating factor in achieving effective enforcement.

The study considers some possible solutions. Amongst those discussed are: the recognition of the need to improve capacity, not only in the legal area but also in other areas related to the marine sector. It also suggests that future collaborative action to achieve the goals of a LME might be best achieved through a voluntary or soft law instrument, given the past reluctance of the international community to commit itself by means of a binding instrument in respect of land-based pollution. However, the limitations in these soft instruments were also acknowledged.

The study identified that there is still a need for more legal information with respect to traditional ownership and customary use systems, details on the laws addressing land-based pollution, and to a lesser extent, critical habitats.

REVIEW OF LEGAL AND ENFORCEMENT MECHANISMS IN THE BOBLME REGION

Introduction.

The Bay of Bengal large marine ecosystem (LME) raises for lawyers a wide range of challenges. Against a background of significant pollution sources in some, most probably all, of the countries surrounding the LME, there exists a wide range of economic, social, political and legal variations. From a purely legal point of view, the LME concept raises some challenging issues in modern international law, for it requires a consideration of the international law of the sea, with its somewhat restrictive zonal approach, supplemented by, in particular, a wide range of ambitious soft law instruments which are endeavouring to chart a more environmentally sound path with greater emphasis on issues of sustainability and ecosystem considerations.

Even within the framework of the 1982 UN Convention, with the inherent limitations of the zonal approach, the most important provision from the point of this study, namely article 207.1 on land based pollution, and which departs from the zonalism of the Convention, states:

“States shall adopt laws and regulations to prevent, reduce and control pollution of the marine environment from land based sources, including rivers, estuaries, pipelines and outfall structures, taking into account internationally agreed rules, standards, and recommended practices and procedures.”

This is backed up by article 213 which imposes an obligation on States to *“enforce their laws and regulations adopted in accordance with article 207 and shall adopt laws and regulations and take other measures necessary to implement applicable international rules and standards established through competent international organizations or*

diplomatic conference to prevent, reduce and control pollution of the marine environment from land-based sources.”

Despite, this, progress in reaching agreement on regional or global measures has been slow, and, significantly, most progress has been made in the form of so called soft law instruments, such as the Washington Declaration on Protection of the Marine Environment from Land-based Activities.

Also, while there are calls for ecosystem approaches (for example in WSSD¹), it has to be remembered that there is still a considerable gap between theory and reality in its implementation.²

The first part of the BOBLME theme review terms of reference for this study call for:

- *Description of the current status of the countries’ legal and institutional frameworks, including the traditional ownership and customary use systems, related to the sustainable management of the BOBLME, and in particular with regard to the management and enforcement of legislation on the following three priority topics: exploitation of marine living resources, especially fisheries, health of critical habitats,*

¹ Thus, in paragraph 30(d) of the Plan of Implementation, there is a call to, “*Encourage the application by 2010 of the ecosystem approach, noting the Reykjavik Declaration on Responsible Fisheries in the marine Ecosystem and decision V/6 of the conference of the Parties to the Convention on Biological Diversity.*” Para 32© also states: “*Develop and facilitate the use of diverse approaches and tools, including the ecosystem approach, the elimination of destructive fishing practices, the establishment of marine protected areas consistent with international law and based on scientific information, including representative networks by 2012 and time/area closures for the protection of nursery grounds and periods, proper coastal land use and watershed planning and the integration of marine and coastal areas management into key sectors;*”

² For a discussion of this issue, see Edeson “Sustainable Use of Marine Living resources” Heidelberg Journal of International Law vol 63 p 355 (2003), and “Closing the Gap: the use of Soft law Instruments to Control Fishing” Vol 20 Australian Yearbook of International Law p.83 (1999)

especially mangroves and coral reefs, and land-based sources of pollution to the coastal and marine environment.

It is proposed, therefore, to consider first the applicable laws in the individual countries of BOBLME. Because this is a desk study, it is important to stress the limitations involved in such a methodology. Inevitably, there will be an unevenness in this study simply because, relying mainly on sources available over the internet and other public sources, some sources are bound to be better than others. In some instances, it is not possible to get complete texts. In this regard, it would be extremely helpful if national representatives could furnish any texts of laws that, for whatever reason, have not been included in this version of the paper. This is especially true in relation to information on the myriad of laws which can apply to land-based sources of pollution, information on traditional ownership and customary use systems, and, to a lesser extent, laws applying to critical habitats.

However, the most important constraint is that it is not always possible to evaluate a law in its context. A law may be superbly drafted, dripping with environmental goodies, and, when studied from a distance, it could seem to be the paradigm for elsewhere. However, without an actual in-country assessment, it is easy to draw the wrong conclusions about the effectiveness of a law. The perfect law, for example, might be incapable of implementation on key issues. This can happen very easily in a federal system. Or, a very imperfect law can sometimes be the best solution available for a particular country or for a specific legal system for reasons not immediately apparent from the outside.

Individual countries

Bangladesh

Bangladesh is a parliamentary democracy whose legal system is based on the English common law.

The Bangladesh Territorial Waters and Maritime Zones Act 1974 is a basic law which sets out the claim to sovereignty and sovereign rights over the territorial sea, contiguous zone continental shelf and EEZ (called an economic zone). It is one of the earlier 200 mile zone claims to have been made as the negotiations for the EEZ were finalized during the early stages of UNCLOS III. The Act is very general in character, and has a very broad rule making power.

The Act provides for notification in the government gazette of the baselines from which the territorial sea is to be measured.

The Act provides that sovereignty of the Republic extends to the territorial waters as well as to the air space over and the bed and subsoil of, such waters.

It also addresses the exercise of innocent passage of foreign ships through the territorial sea. A Foreign ship having the right of innocent passage through the territorial waters shall, while exercising such right, observe the laws and rules in force in Bangladesh. It also provides for suspension of the right of innocent passage in certain circumstances.

There are several other provisions in this law dealing with innocent passage but they have very little bearing on the subject of this study.

Provision is also made for a contiguous zone of six nautical miles from the outer limit of the territorial waters. The zone is unusual inasmuch as it includes security as one of the grounds for the taking of action by Bangladeshi officials. This is not provided for in article 33 of the 1982 UN Convention.

The most important aspect of the law for our purposes is the provision it makes for the proclamation of an “economic” zone.

The relevant section (5) states:

5. (1) *The Government may, by notification in the official Gazette, declare any zone of the high seas adjacent to the territorial waters to be the economic zone of Bangladesh specifying therein the limits of such zone.*

(2) *All natural resources within the economic zone, both living and non-living, on or under the seabed and sub-soil or on the water surface or within the water column shall vest exclusively in the Republic.*

(3) *Nothing in sub-section (2) shall be deemed to affect fishing within the economic zone by a citizen of Bangladesh who uses for the purpose vessels which are not mechanically propelled.*

In addition, it provides for a “conservation” zone:

6. *The Government may, with a view to the maintenance of the productivity of the living resources of the sea, by notification in the official Gazette, establish conservation zones in such areas of the sea adjacent to the territorial waters as may be specified in the notification and may take such conservation measures in any zone so established as it may deem appropriate for the purpose including measures to protect the living resources of the sea from indiscriminate exploitation, depletion or destruction.*

From a fisheries point of view, this is less important in view of the enactment of the Marine Fisheries Ordinance, to which we will return later.

The law also provides for the continental shelf. The most important aspect of the continental shelf provisions is the following:

(3) *No person shall, except under and in accordance with the terms of, a licence or permission granted by Government explore or exploit any resources of the continental shelf or carry out any search or excavation or conduct any research within the limits of the continental shelf:*

Provided that no such licence or permission shall be necessary for fishing by a citizen of Bangladesh who uses for the purpose vessels which are not mechanically propelled.

Explanation: Resources of the continental shelf include mineral and other non-living resources together with living organisms belonging to sedentary species, that is to say, organisms which at the harvestable stage, either are immobile on or under the seabed or are unable to move except in constant physical contact with the seabed or the subsoil.

(4) The Government may construct, maintain or operate within the continental shelf installations and other devices necessary for the exploration and exploitation of its resources.

This provision could have some relevance to the BOBLME as activities undertaken on the continental shelf could have considerable impact on an ecosystem approach. However, it will depend on the activity in question whether action would be taken under this law or under the more detailed Marine Fisheries Ordinance. For practical purposes, it is likely to be the Marine Fisheries Ordinance.

The Act also provides in a very general way for dealing with pollution in areas beyond the territorial sea:

8. The Government may, with a view to preventing and controlling marine pollution and preserving the quality and ecological balance in the marine environment in the high seas adjacent to the territorial waters, take such measures as it may deem appropriate for the purpose.

The Act is backed up with a general power to make rules.

*9. (1) The Government may makes rules for carrying out the purposes of this Act.
(2) In particular and without prejudice to the generality of the foregoing power, such rules may provide -
(a) for the regulation of the conduct of any person in or upon the territorial waters, contiguous zone, economic zone, conservation zone and continental shelf;
(b) for measures to protect, use and exploit the resources of the economic zone;
(c) for conservation measures to protect the living resources of the sea;
(d) for measures regulating the exploration and exploitation of resources within the continental shelf;
(e) for measures designed to prevent and control of marine pollution of the high seas.
(3) In making any rule under this section the Government may provide that a contravention of the rule shall be punishable with imprisonment which may extend to one year or with fine which may extend to five thousand takas.*

At one level, the law can be judged as useful in that it provides many of the basic powers needed to deal with activities in the economic zone or on the continental shelf. The law suffers, however, from the basic problem of many laws enacted to give effect

to aspects of the 1982 UN Convention, namely that it was more in the nature of an enabling Act. It did not in itself provide sufficient guidance on how to achieve the various important goals concerning in particular fisheries and environmental protection.

Not surprisingly, this Act has since been supplemented by more detailed laws especially as regards fisheries; however, some of its provisions could be used as a basis for action to promote ecosystem considerations, even though the concept is not specifically referred to in the law.

The most important one for fisheries is the Marine Fisheries Ordinance, 1983. This is a comprehensive fisheries law which for its time was very well drafted. It provides an effective basis for the control of fishing activities, both foreign and local, in the “economic” zone (and territorial sea and internal waters).

This Ordinance contains 11 Parts divided into 55 sections: i.e. Preliminary (I); Administration (II); General Provisions Governing Licences (III); Local Marine Fishing Operations (IV); Foreign Marine Fishing Operations (V); Appeal (VI); Prohibited Fishing Methods (VII); Marine Reserves (VIII); Powers of Authorized Officers (IX); Offences and Legal Procedures (X); Rules (XI). Under Part I, section 3 provides that the Government may exempt any non-mechanized and limited horsepower local fishing vessel from the general provisions governing licences. The Government may also determine a specific zone in which only such vessels may engage in fishing operations (sect. 3(2)). Part II is devoted to administration. Under Part III, there are general provisions governing licences, licences are not transferable except with written permission of the Director and the holder of a licence has a duty to provide information regarding catch. In order to be issued a licence, local fishing vessels shall be registered and shall have been inspected (Part IV). Fishing operations conducted by foreign fishing vessels are subject to prior authorization (Part V). Decisions made by the Director or a fisheries officer can be appealed against (Part VI). Prohibited fishing methods are set out in Part VII and include use of explosives, and use of fishing nets with unlawful mesh size. For

conservation and management purposes, the Government may declare any area of the Bangladesh fisheries waters and any adjacent or surrounding land to be a marine reserve (Part VIII). Part IX and X deal with powers of authorized officers and offences and legal procedures respectively. Lastly, Part XI sets out the matters upon which the Government is authorized to make rules, and these are very detailed in their scope.

One aspect of the law should be noted, which is that the definition of Bangladesh fisheries waters includes not only the territorial waters and the economic zone, but also *“any other marine waters over which [the government] has or claims to have jurisdiction under law with respect to the management, conservation and development of the marine living resources.”*

This theoretically would enable the extension of jurisdiction onto the high seas, however, it is doubtful if this can be achieved by means of a definition alone.

The law does, however, contain an extensive power to impose conditions on both local and foreign fishing. See section 16. This accompanied by an extensive rule making power, and is an effective basis for the management of marine living resources within the 200 miles zone. However, the law also reflects the era in which it was prepared, as it is typical of the laws enacted to give effect to the 200 mile zone concept located in the 1982 UN Convention. At the time it was drafted, of course, the Convention was still being negotiated at UNCLOS III, but in accordance with the practice of many countries, exclusive economic zone laws were enacted prior to its completion.

The shortcomings in the law are essentially that it does not incorporate the developments which have taken place since the coming into force of the 1982 UN Convention. In particular, it does not address the issues raised in the 1995 UN Fish Stocks Agreement or the 1993 FAO Compliance Agreement. Nor does it provide a basis for addressing issues raised in the FAO Code of Conduct for Responsible Fisheries or the International Plan of Action on IUU Fishing formulated under it. Put very simply, it does not provide an effective basis for Bangladesh to participate in

international fisheries management regimes along the lines provided for in particular in these international instruments. Further, its ability to undertake high seas enforcement, even against its own nationals will be severely restricted.

On two issues of particular relevance to the setting up of an LME for the Bay of Bengal, it is also defective, namely the fact that it does not include references to the precautionary approach to fisheries management, nor to the principles set out in Article 5 of the 1995 UN Fish Stocks Agreement. The failure to refer to the precautionary approach should not, however, be overstated, for while a valid comment and therefore needing attention, it is still possible for action to be taken within 200 miles that would involve the application of precautionary approaches. A precautionary measure does not have to be thus described in order to be precautionary in effect. On the other hand, the adoption of ecosystem approaches could prove to be more difficult as it would involve matters going beyond specifically fisheries issues. Thus, action taken under that law which went further could arguably run into the *ultra vires* principle.

The inability to address issues on the high seas is, however, a more serious shortcoming, as until legislation is introduced to pick up the provisions of these two agreements – the 1995 UN Fish Stocks Agreement and the 1993 FAO Compliance Agreement – Bangladesh will be limited in what it can do in area beyond its economic zone. To that extent, its ability to participate in a LME arrangement will be limited, though not entirely impossible.

Environment law: The Environment Conservation Act 1995 is a very comprehensive and general law, which is not however directed specifically towards marine pollution or marine environmental controls, but with its general wording and the fact that it is stated to override any other laws, could provide a basis at least for coordination of the activities of agencies having relevance to the objectives of the Act.

Section 2A Overriding effect of the Act reads- *Notwithstanding anything contained to the contrary in any other law for the time being in force, the provisions of this Act,*

rules and directions issued under this Act shall have effect. Thus, the absence of a specific territorial application clause, which in many laws can be vital to their application beyond the land territory, may not be crucial here.

The Act in section 2 contains a number of definitions, the most interesting of which are set out in the footnote³:

Section 4 sets out the power of the Director-General, and it is worth setting out here:

4. Power and functions of the Director General.- (1) Subject to the provisions of this Act, the Director General may take such measures as he considers necessary and expedient for the conservation of the environment, and improvement of environmental standards, and for the control and mitigation of environmental pollution, and he may issue necessary directions in writing to any person for the discharge of his duties under this Act.

3

"conservation of environment" means improvement of the qualitative and quantitative characteristics of different components of environment as well as prevention of degradation of those components;

"ecosystem" means the inter-dependent and balanced complex association of all components of the environment which can support and influence the conservation and growth of all living organisms;

"environment" means the inter-relationship existing between water, air, soil and physical property and their relationship with human beings, other animals, plants and micro-organisms;

"environment pollutant" means any solid, liquid or gaseous substance which causes harmful effect to the environment and also includes heat, sound and radiation;

"hazardous substance" means a substance, the chemical or biochemical properties of which are such that its manufacture, storage, discharge or unregulated transportation can be harmful to the environment;

"pollution" means the contamination or alteration of the physical, chemical or biological properties of air, water or soil, including change in their temperature, taste, odor, density, or any other characteristics, or such other activity which, by way of discharging any liquid, gaseous, solid, radioactive or other substances into air, water or soil or any component of the environment, destroys or causes injury or harm to public health or to domestic, commercial, industrial, agricultural, recreational or other useful activity, or which by such discharge destroys or causes injury or harm to air, water, soil, livestock, wild animal, bird, fish, plant or other forms of life;

"waste" means any solid, liquid, gaseous, radioactive substance, the discharge, disposal and dumping of which may cause harmful change to the environment;

(2) In particular and without prejudice to the generality of the foregoing power, such measures may include all or any of the following :-

(a) co-ordination with the activities of any authority or agency having relevance to the objectives of this Act;

(b) prevention of probable accidents which may cause environmental degradation and pollution, undertaking safety measures and determination of remedial measures for such accidents and issuance of directions relating thereto;

(c) giving advice or, as the case may be, issuing directions to the concerned person regarding the environmentally sound use, storage, transportation, import and export of a hazardous substance or its components.

(d) conducting inquiries and undertaking research on conservation, improvement and pollution of the environment and rendering assistance to any other authority or organization regarding those matters;

(e) searching any place, examining any equipment, manufacturing or other processes, ingredients, or substance for the purpose of improvement of the environment, and control and mitigation of pollution; and issuance of direction or order to the appropriate authority or person for the prevention, control and mitigation of environmental pollution;

(f) collection and publication of information about environmental pollution;

(g) advising the Government to avoid such manufacturing processes, commodities and substances as are likely to cause environmental pollution;

(h) carrying out programs for observation of the quality of drinking water and preparation of reports thereon, and rendering advice or, as the case may be, issuing direction to the concerned persons to follow standards for drinking water.

(3) A direction issued under this section may include matters relating to closure, prohibition or regulation of any industry, undertakings or processes, and the concerned person shall be bound to comply with such direction:

Provided that-

(a) the Director General shall, before issuing a direction of closure or prohibition of an industry, undertaking or process, send to the owner or occupier thereof a written notice so that he gets reasonable opportunity to make that industry, undertaking or process environmentally sound; and

(b) where the Director General considers it appropriate, he may also specify in the notice that actions under sub-section (2) of section 4A may be taken if, pursuant to the notice, measures are not taken to make the relevant activities environmentally sound:

Provided further that, if the Director General considers that, due to a particular environmental pollution, the public life is likely to be in danger and that urgent action is necessary, he may immediately issue necessary directions.

(4) A time limit may be specified by the Director General for carrying out a direction issued under this section.

It will be seen that these powers would enable the Director General to undertake important activities. The most important one is the power to undertake a coordinating

role, as it could well be that in relation to ecosystem management, it will be coordination across a range of sectors that will be the most important.

Land based pollution

Very little information could be found on the existence of laws in Bangladesh which provided a basis for controlling land based pollution. The Territorial Waters and Maritime Zones Act, 1974 does contain a general power to make rules with respect to marine pollution. See above. Presumably there do exist some laws which could provide a basis for the control of some of the pollution entering the Bay of Bengal from Bangladesh. More importantly, if they do exist, they do not appear to be having any effect. This is brought out very vividly in the paper by Kaly. It is interesting also to note that (at p.89) she refers to standards being set regarding effluents of certain industries “but these are regularly exceeded and there appears to be no self regulation.” She also refers to controls on the imports of certain products such as organo-chlorine pesticides, though these are not effectively enforced.

In the National review of Bangladesh, under 9.2 , it is said: “...*very few steps have been taken to implement [the Law of the sea] in Bangladesh...Thus, Bangladesh has more than 200 rules and regulation on Environment. .. So, the question is not inadequacy of laws but problem is its poor implementation.*”

One of the laws referred to is the Factories Act 1965. Section 12 (i) of this act says that every factory shall be kept clean and free from effluent arising from any drain privy or other nuisance and in particular accumulation of dirt and refuse shall be removed daily. Section 13(i) of this act specifies that effective arrangement shall be made in every factory for the disposal of wastes and effluent due to the manufacturing process carried on therein

Under the Environment Conservation Rules, 1997, the following is provided for:

3. Declaration of Ecologically Critical Area. – (1) *The Government shall take the following factors into consideration while declaring any area as Ecologically Critical Area under sub-section (1) of section 5:-*
(a) *human habitat;*

- (b) ancient monument;*
 - (c) archeological site;*
 - (d) forest sanctuary;*
 - (e) national park;*
 - (f) game reserve;*
 - (g) wild animals habitat;*
 - (h) wetland;*
 - (i) mangrove;*
 - (j) forest area;*
 - (k) bio-diversity of the relevant area; and*
 - (l) other relevant factors.*
- (2) The Government shall, in accordance with the standards referred to in rules 12 and 13, specify the activities or processes which can not be continued or initiated in an Ecologically Critical Area.*

The Environment Court Act 2000 provides for a judicial determination of certain environmental offences. Its preamble states:

Whereas it is expedient and necessary to provide for the establishment of Environment Courts for the trial of offences relating to environmental pollution and matters incidental thereto;

Its scope is revealed in the following definition:

“environmental law” means this Act, the Bangladesh Environment Conservation Act, 1995 (Act No. 1 of 1995), any other law specified by the Government in the official Gazette for the purposes of this Act, and the rules made under these laws.

It is not possible to ascertain how effective this court has been in its short existence. However, the idea of having a dedicated court to Address environmental matters is a good idea inasmuch as it allows for a specialization among judges in what is to many an unknown and uncharted area of the law.

In addition, the National report drew attention to the following information on possible laws that have not already been referred to above.

Forest Act (Amendment) 1989,

Wildlife Act 1974,

Brick Burning Act 1991,

Open Space and Wetland Conservation Act 2002,

No detailed information is available concerning these laws

Traditional ownership and customary use systems

Very little information could be obtained from web based sources on this. According to Angell (p.24) in reference to the Sundarbans “*traditional right of access was through membership of village samaj dominated by local elite which controlled access. These rights were not formally regulated, but were the birthright of the community.*”

This raises a basic problem in the type of analysis we are undertaking, namely, the relationship between formal laws enacted by the legislature and local customs or traditional law. The formal laws will presumably override in most instances these customary laws (unless there is a constitutional protection), but on the other hand, in certain remote areas, these customary laws or traditional uses will inevitably be more important, though often very difficult to document. As was once said about the Indian Penal Code (a brilliantly drafted law for its time in the nineteenth century): to say that it applied throughout India was formally correct, but a more relevant question was to ask: how far away is the nearest police station?

The same type of question inevitably will underlie a study of the present kind: a conventional legal analysis done as a desk study can only provide part of the answer as to what laws actually apply in certain more remote locations.

Critical habitats

Angell reports that there is extensive damage being done as a result of coral mining. There is very little evidence of laws being applied in regard to coral reefs and mangrove swamps, though it could also be that there are no specific laws.

Overall assessment: The basic fisheries law is good, but it needs to be supplemented by the introduction of legislation to deal with high seas fishing, and the incorporation of modern management objectives (long term sustainable use, precautionary approach, and ecosystem considerations) both for the high seas and in the economic zone. It will also in this context be necessary to provide for other post UNCED developments, such as the IPOA-IUU.

Land based pollution is a serious problem and the laws themselves are insufficient while those which exist are almost certainly not effectively implemented.

The environmental law, combined with the environmental court which has been established, is a promising initiative, though it is probably too early to evaluate the impact of the latter.

While the national legislation has many elements which could be drawn upon, it would not overall provide a solid basis for giving effect to ecosystem wide management approaches.

India

India is a Union of states and territories, consequently with a division of jurisdiction along typical lines for a federal system. It is a parliamentary democracy and its legal system is based on the English common law.

In the territorial sea, states have some jurisdiction over fisheries, though in the EEZs, this is a matter for the central authorities.

The Territorial Waters Continental Shelf Exclusive Economic Zone and other Maritime Zones Act 1976 is the basic law for its maritime zones. This law sets out the assertion of sovereignty and sovereign rights over the territorial sea, contiguous zone, EEZ, and other maritime zones. The EEZ provisions are quite comprehensive, and would provide the basis for India to exercise control over that zone for the purposes of international law. In particular, it may be noted that it provides for exercising the following rights:

(a) sovereign rights for the purpose of exploration, exploitation, conservation and management of the natural resources, both living and non-living as well as for producing energy from tides, winds and currents;

(b) exclusive rights and jurisdiction for the construction, maintenance or operation of artificial islands, off-shore terminals, installations and other structures and devices necessary for the exploration and exploitation of the resources of the zone or for the convenience of shipping or for any other purpose;
(c) exclusive jurisdiction to authorize, regulate and control scientific research;
(d) exclusive jurisdiction to preserve and protect the marine environment and to prevent and control marine pollution; and
(e) such other rights as are recognized by International Law.
(5) No person (including a foreign Government) shall, except under, and in accordance with, the terms of any agreement with the Central Government or of a licence or a letter of authority granted by the Central Government, explore or exploit any resources of the exclusive economic zone or carry out any research or excavation or conduct any research within the exclusive economic zone or drill therein or construct, maintain or operate any artificial island, off-shore terminal, installation or other structure or device therein for any purpose whatsoever: Provided that nothing in this sub-section shall apply in relation to fishing by a citizen of India.

More recently, India has enacted the Maritime Zones of India (Regulation of Fishing by Foreign Vessels) Act of 1981, and the Maritime Zones of India (Regulation of Fishing by Foreign Vessels) Rules of 1982.

These apply to foreign flag vessels owned by foreign interests and foreign flag vessels chartered by an Indian citizen or company. It regulates foreign fishing in territorial waters.

However, it is still not clear if there are laws governing fishing by Indians in the EEZ, though it would be surprising if this were not the case.

While there appears to be some uncertainty about the exact extent of the laws as regards local fishers, there does appear to be the basis for effective application of laws regarding fishing in the territorial sea and the EEZ. The legal regime does, however, need to be updated with respect to post UNCED developments, especially the Code of Conduct for Responsible Fisheries, the 1995 UN Fish Stocks Agreement, Compliance Agreement and IPOA-IUU.

Environmental legislation.

The Environment (Protection) Act, 1986 is an all embracing Act which extends to the whole of India, and has some very wide definitions in it.

Its basic objective however is to provide a coordinating role, including the actions of State governments, as well as setting down standards, emission controls, restriction of areas, procedures and safeguards, inspections of premises, etc

The following chapter is important enough to merit being quoted in full:

CHAPTER II

GENERAL POWERS OF THE CENTRAL GOVERNMENT

3. POWER OF CENTRAL GOVERNMENT TO TAKE MEASURES TO PROTECT AND IMPROVE ENVIRONMENT

(1) Subject to the provisions of this Act, the Central Government, shall have the power to take all such measures as it deems necessary or expedient for the purpose of protecting and improving the quality of the environment and preventing controlling and abating environmental pollution.

(2) In particular, and without prejudice to the generality of the provisions of subsection (1), such measures may include measures with respect to all or any of the following matters, namely:--

(i) co-ordination of actions by the State Governments, officers and other authorities--

(a) under this Act, or the rules made thereunder, or

(b) under any other law for the time being in force which is relatable to the objects of this Act;

(ii) planning and execution of a nation-wide programme for the prevention, control and abatement of environmental pollution;

(iii) laying down standards for the quality of environment in its various aspects;

(iv) laying down standards for emission or discharge of environmental pollutants from various sources whatsoever;

Provided that different standards for emission or discharge may be laid down under this clause from different sources having regard to the quality or composition of the emission or discharge of environmental pollutants from such sources;

(v) restriction of areas in which any industries, operations or processes or class of industries, operations or processes shall not be carried out or shall be carried out subject to certain safeguards;

(vi) laying down procedures and safeguards for the prevention of accidents which may cause environmental pollution and remedial measures for such accidents;

(vii) laying down procedures and safeguards for the handling of hazardous substances;

(viii) examination of such manufacturing processes, materials and substances as are likely to cause environmental pollution;

(ix) carrying out and sponsoring investigations and research relating to problems of environmental pollution;

(x) inspection of any premises, plant, equipment, machinery, manufacturing or other processes, materials or substances and giving, by order, of such directions to such authorities, officers or persons as it may consider necessary to take steps for the prevention, control and abatement of environmental pollution;

(xi) establishment or recognition of environmental laboratories and institutes to carry out the functions entrusted to such environmental laboratories and institutes under this Act;

(xii) collection and dissemination of information in respect of matters relating to environmental pollution;

(xiii) preparation of manuals, codes or guides relating to the prevention, control and abatement of environmental pollution;

(xiv) such other matters as the Central Government deems necessary or expedient for the purpose of securing the effective implementation of the provisions of this Act.

(3) The Central Government may, if it considers it necessary or expedient so to do for the purpose of this Act, by order, published in the Official Gazette, constitute an authority or authorities by such name or names as may be specified in the order for the purpose of exercising and performing such of the powers and functions (including the power to issue directions under section 5) of the Central Government under this Act and for taking measures with respect to such of the matters referred to in sub-section (2) as may be mentioned in the order and subject to the supervision and control of the Central Government and the provisions of such order, such authority or authorities may exercise and powers or perform the functions or take the measures so mentioned in the order as if such authority or authorities had been empowered by this Act to exercise those powers or perform those functions or take such measures.

It also provides for the issuance of binding directions, and it provides a wide power to make rules.

Under this law, some authorities have been established. These are The Aquaculture Authority (by notification of 6 February 1997). This authority is given the following powers and functions:

2. *The Authority shall exercise the following powers and perform the following functions, namely: -*
 - i. *exercise of powers under section 5 of the Environment (Protection) Act, 1986 for issuing directions and for taking measures with respect to matters referred to in clauses (v), (vi), (vii), (viii), (ix) and (xii) of sub-section (2) of section 3 of the said Act;*
 - ii. *.....*
 - iii. *to ensure that no shrimp culture pond can be constructed or set up within the Coastal Regulation Zone and up to 1000 m of Chilka lake and Pulicat lake (including bird sanctuaries namely, Yadurapattu and Nelapattu);*
 - iv. *to ensure and give approval to the farmers who are operating traditional and improved traditional systems of aquaculture for adoption of improved technology for increased production;*
 - v. *to ensure that the agricultural lands, salt pan lands, mangroves, wetlands, forest lands, land for village common purposes and the land meant for public purposes shall not be used or converted for construction of shrimp culture ponds;*

- vi. *the Authority shall implement the "Precautionary Principle" and the "Polluter Pays Principle", by adopting the procedure described in the Supreme Court order dated 11.12.1996 passed in the Writ Petition (Civil) No. 561 of 1994;*
 - vii. *the Authority shall also regulate the shrimp culture activities outside the Coastal Regulation Zone areas and beyond 1000 m from the Pulicat lake and Chilka lake and also give the necessary approvals/authorization by the 30th April 1997.*
 - viii. *the Authority in consultation with expert bodies like National Environmental Engineering Research Institute, Central Pollution Control Board, respective State Pollution Control Boards shall frame Scheme/Schemes for reversing the damage caused to the ecology and environment by pollution in the coastal States and Union Territories;*
 - ix. *the Authority shall ensure the payment of compensation to the workmen employed in the shrimp culture industries as per the procedure laid down in the Supreme Court Order dated 11.12.96 passed in the Writ Petition (Civil) No. 561 of 1994;*
 - x. *to comply with the relevant orders issued by the concerned High Courts and Supreme Court from time to time;*
 - xi. *to deal with any other relevant environment issues pertaining to coastal areas with respect to shrimp culture farming, including those which may be referred to it by the Central Government in the Ministry of Environment and Forests.*
2. *The jurisdiction of the Authority shall cover all the coastal States and Union territories.*
 3. *The Scheme/Schemes framed by the Authority for reversing the damage caused due to the pollution in the coastal States and Union Territories shall be executed by the respective State Governments and Union Territory Administrations under the supervision of the Central Government.*
 4. *The Authority shall function under the administrative control of Government of India in the Ministry of Agriculture, with its headquarters at Chennai (Tamilnadu)*
 5. *The terms and conditions of appointment of the Chairperson and Members shall be as determined by the Central Government from time to time.*

There has also been established a National Coastal Zone Authority (26 November 1998), which has the following powers:

II. The Authority shall have the power to take the following measures for protecting and improving the quality of the coastal environment and preventing, abating and controlling environmental pollution in coastal areas, namely:-

(i) Co-ordination of action by the State Coastal Zone Management Authorities and the Union Territory Coastal Zone Management Authorities under the said Act

and the rules made thereunder, or under any other law which is relatable to the objects of the said Act.

(ii) Examination of the proposals for changes and modifications in classification of Coastal Regulation Zone areas and in the Coastal Zone Management Plans received from the State Coastal Zone Management Authorities and the Union Territory Coastal Zone Management Authorities, and making specific recommendations to the Central Government therefore.

(iii).....

(a) Review of cases involving violations of the provisions of the said Act and the rules made thereunder, or under any other law which is relatable to the objects of the said Act and, if found necessary, issue directions under section 5 of the said Act.

(b) Review of cases under (iii) (a) either suo-moto, or on the basis of complaint made by an individual or a representative body, or an organization functioning in the field of environment.

(iv) File complaints, under section 19 of the said Act in cases of non-compliance of the directions issued by it under sub-paragraph (iii) (a) of paragraph II of the Order.

(v) To take action under section 10 of the said Act to verify the facts concerning the issues arising from sub-paragraphs (i), (iii) and (iii) of paragraph II of the Order.

III. The Authority shall provide technical assistance and guidance to the concerned State Government, Union Territory Governments/Administrations, the State Coastal Zone Management Authorities, the Union Territory Coastal Zone Management Authorities, and other institutions/organization as may be found necessary, in matters relating to the protection and improvement of the coastal environment.

IV. The authority shall examine and accord its approval to area specific management plans, integrated Coastal Zone Management Authorities and Union Territory Coastal Zone Management Authorities.

V. The Authority may advise the Central Government on policy, planning, research and development, setting up of Centres of Excellence and funding, in matters relating to Coastal Regulation Zone Management

VI. The Authority shall deal with all environmental issues relating to Coastal Regulation Zone which may be referred to it by the Central Government.

VII. The Authority shall furnish report of its activities and the activities of the State Coastal Zone Management Authorities and Union Territory Coastal Zone Management Authorities at least once in six months to the Central Government.

VIII. The foregoing powers and functions of the Authority shall be subject to the supervision and control of the Central Government.

These two authorities give an indication of the kinds of approaches that can be taken under the Environment Law. Also, they concern two areas of critical importance to this study, namely, aquaculture and the coastal zone.

There are a number of other laws which are reported in the National consultant's report, several of which could not be located on the web. These are:

1.1 Air (Prevention and Control of Pollution) Act, 1981:

The objective of the Air Act is to prevent, control and reduce air pollution including noise pollution and to establish Boards at the States/UTs for this.

1.2 Water Prevention and Control of Pollution) Act, 1974:

The main provisions of this Act aim at prevention and control of water pollution as well as restoration of water quality, through the establishment of State Pollution Control Boards. Some salient features of this Act are-

- No person shall knowingly cause or permit any poisonous, noxious or polluting matter determined in accordance with such standards as may be laid down by the State Board to enter (whether directly or indirectly) into any stream or well or sewer or on land.*
- No person shall knowingly cause or permit to enter into any stream any other matter which may tend, either directly or in combination with similar matters, to impede the proper flow of the water of the stream in a manner leading or likely to lead to a substantial aggravation of pollution due to other causes or of its consequences.*

1.3. Hazardous Wastes (Management and Handling) Rules, 1989:

The Hazardous Wastes (Management & Handling) Rules were notified in 1989 and amended in 2000. These Rules provide for a control on the generation, collection, treatment, transport, import, storage and disposal of wastes listed in the schedule annexed to these rules. The implementations of these rules are through the identified State agencies, namely, State Pollution Control Boards and the State Government (Department of Environment).

Hazardous wastes have been defined in terms of 44 processes and 123 waste streams mentioned in Schedule 1 and 79 substances along with concentration limits specified in Schedule 2. For the purpose of imports and exports, a separate Schedule of Wastes (Schedule 3) has been incorporated. Identification of sites for the disposal of hazardous wastes in the States has also been specified.

1.4 Manufacture, Storage and Import of Hazardous Chemicals Rules, 1989 (amended in October 1994)

The Manufacture, Storage and Import of Hazardous Chemicals Rules were notified on 27 November, 1989, under the Environment (Protection) Act, 1986. The first set of amendments to this rule was gazetted on 3 October, 1994. The second set of amendments was notified in January, 2000.

The principal objectives of the regulation are the prevention of major accidents arising from industrial activities, the limitation of the effects of such accidents both on man and on the environment and the harmonization of the various control measures and the agencies to prevent and limit major accidents.

1.5 Chemical Accident (Emergency Planning, Preparedness and Response) Rules, 1996.

This set of rules provides a statutory back-up for setting up of a Crisis Group in districts and states which have Major Accident Hazard Installations (MAH) and providing information to the public. The rules define major accident hazard installations which include industrial activity, transport and isolated storages at a site handling hazardous chemicals in quantities specified. .

1.6 Bio-Medical Wastes (Management & Handling) Rules, 1998.

The Bio-Medical Waste (Management & Handling) Rules were notified on 27 July, 1998. These rules were amended on 6 March and 2 June. These Rules provide for segregation, packaging, transportation, storage, treatment and disposal of wastes generated by hospitals, clinics and laboratories.

1.7 Municipal Solid Waste Rules, 2000

The Ministry of Environment & Forests has brought out the Municipal Solid Wastes (Management & Handling) Rules on 25 September, 2000 with the objective to regulate collection, segregation, transportation, processing and disposal of municipal wastes including commercial and residential wastes generated in a municipal or notified area in solid or semi-solid form. The regulations also apply to treated bio-medical waste, but do not cover industrial hazardous wastes. Salient features of these rules are as follows:

- The wastes are required to be collected, segregated, stored, transported, processed and disposed of by the Municipal Authorities in accordance with the procedure laid down under the rules. Municipal Authorities are required to notify the waste collection schedule and the likely method of collection, segregation and processing of wastes.*
- The rules provide for segregation of bio-degradable, recyclable and other wastes and a colour scheme for bins to facilitate collection and segregation of different wastes categories (green bins for biodegradable wastes, white for recyclable and black for other non-biodegradable wastes).*
- In order to minimise the burden on landfills for waste disposal, the rules provide several options for processing and disposal of wastes like composting, venni*

composting, anaerobic digestion, recycling, incineration (with or without energy recovery) and pelletisation.

1.8 Coastal Regulation Zone Notification, 1991:

A critical aspect of environmental protection and preservation relates to regulation and prohibition of various activities in coastal areas. Major developments in this area are currently underway, which give rise to optimism concerning a pro-active policy towards integrated ocean and coastal marine management. Under the Environmental (Protection) Act 1986, the central government's notifications of 1991 and 1994 declared coastal stretches of seas, bays, estuaries, creeks, rivers and backwaters which are influenced by tidal action (on the landward side) up to 500 meters from High Tide Line (HTL) , and between the Low Tide Line (L TL) and HTL, as Coastal Regulation Zones (CRZ) , and thereby regulated activities such as the establishment of new industries, and the reclamation of land.

Definition: Coastal Regulation Zone Notification, 1991:

The Coastal Regulation Zone (CRZ) Notification, issued on 19 February, 1991, declares coastal stretches of seas, bays, estuaries, creeks, rivers and backwaters which are influenced by tidal action (on the landward side), up to 500 meters from the high tide line and the inter-tidal zone as the Coastal Regulation Zone. This Notification was issued under Section 3(1) and Section 3(2)(v) of the Environment (Protection) Act, 1986 and Rule 5 (3)(d) of the Environmental (Protection) Rules, 1986.

(a) Restrictions under Coastal Regulation Zone Notification, 1991:

The Notification imposes restrictions on the setting up and expansion of industries and operations or processes, etc., in the Coastal Regulation Zone. It defines the Coastal Regulation Zone using the High Tide Line (HTL) as the reference point. The HTL has been defined as the line on the land up to which the highest water line reaches during the spring tide. The Notification also clarifies that the HTL shall be demarcated universally in all parts of the country by the demarcating authority, authorized by the Central Government in consultation with the Surveyor General of India. It is stipulated that the distance from the HTL shall apply to both sides in the case of rivers, creeks and backwaters and may be modified on a case-to-case basis for reasons to be recorded while preparing the Coastal Zone Management Plans. However, this distance shall not be less than 100 meters or the width of the creek, river or backwater, whichever is less.

(b) Prohibited Activities under Coastal Regulation Zone Notification, 1991: The notification lists the prohibited activities in the Coastal Regulation Zone. The prohibited activities include:

(a) Setting up of new industries and expansion of existing industries except those directly related to waterfront or directly needing foreshore facilities.

(b) Manufacture or handing or storage or disposal of hazardous substances except storage of identified petroleum products in the existing port limits of existing ports and harbours and in those areas of ports that have not been classified as CRZ-I.

- (c) Setting up of effluent treatment plants.*
 - (d) Dumping of city or town waste for the purpose of landfilling of otherwise, ash or any waste from thermal power station.*
 - (e) Mining of sands, rocks and other substrata materials except those rare minerals not available outside CRZ.*
- The CRZ Notification also lists the permissible activities that are regulated. The permissible activities are those which require water-front and foreshore facilities and require environmental clearance. These include:*
- (a) Construction activities related to defence requirements.*
 - (b) Operational construction of ports and harbours, lighthouses, jetties, wharves, etc.*
 - (c) Foreshore facilities for transport of raw material, for intake of cooling water and outfall for discharge of treated water, cooling water for thermal plants.*
 - (d) Construction of hotels and beach resorts between 200 and 500 meters of HTL in designated areas of CRZ III.*
 - (e) Reconstruction of authorized buildings subject to existing FSI/F AR norms in CRZ II areas.*
 - (f) Construction of buildings on the landward side of existing roads or roads proposed in the approved CZMP.*
 - (g) and reclamation for construction of ports, harbours, jetties, wharves, bridges and sea links and other facilities essential for activities permissible under the Notification.*

Land based sources of pollution

The report by Kaly provides strong graphic illustration of the extent of the problem of land based pollution in India. The extent of this pollution and the existence of numerous laws referred to above from the national consultant's report would suggest that there is a problem of enforcement, rather than a lack of applicable law. Kaly (p 92) refers to legislation setting out standards on sewage, which are not applied. The list above from the National consultant's report is probably the best source of information available short of visiting New Delhi or some other major centre.

There may be scope for further coordinating efforts to be made under the Environment Protection Act.

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Critical habitats

In the report of Angell, there is a reference to aquaculture being controlled in certain parts. However, it is a matter for both central and local authorities. Also Angell refers

(p 30) to the use of Wild Life Protection Act banning aquaculture in protected areas and declared biosphere reserves.

Traditional ownership and customary use systems.

There was no detailed information on traditional ownership and customary use systems. However, it can be assumed that there must be some in operation in at least some localities.

It is useful to conclude with this brief summary provided in the national consultant's report:

Fisheries in the region have open access. Constitutionally the prefecture governments have full powers to deal with fisheries in the territorial limits adjoining their respective coastline. The power to make law for the EEZ is vested with the Union Government. The Marine Fishing Regulation Acts (MFRA) have been enacted by all the prefecture governments in the region except the A&N Islands, where the process is in advanced stages. The Indian Fisheries Act (1897), the Territorial Waters Continental Shelf, Exclusive Economic Zone and other Maritime Zones Act (1976), The Maritime Zones of India (Regulation of Fishing by Foreign Vessels) Act (1981), The Environment (Protection) Act (1986) and The Coastal Regulation Zone Notification (1991) are the important central legislations available for regulating activities in the seas around the country and coastal zones.

An Aquaculture Authority Bill intended to regulate mainly coastal aquaculture is under promulgation. The existing legal framework is too weak or the enforcement mechanisms are inadequate to manage fisheries in the federal states.

Overall assessment. The fisheries laws need to be updated to ensure that there is an effective control over Indian nationals fishing in the EEZ if that is not already provided for. There is also a need to give effect to the 1995 UN Fish Stocks Agreement and the FAO Compliance Agreement. Until that is done, India will not be in a position to control the activities of its own fishers on the high seas. It will also be limited in its ability to participate fully in some future regional or sub regional fisheries agreements or arrangements. It also needs to ensure that modern management concepts such as the precautionary approach and ecosystem considerations are given a role in national legislation as a basis for administrative action.

Its sectoral environment law seems to be well drafted but it is not clear that it is being effective for example in controlling land based pollution. Also, with regard

to the latter, because it is a federal system, it can be expected that there will be both unevenness in the application of the laws and in their effectiveness from one state to another. This is problem which is common to many federal states. Aquaculture is a continuing problem in mangrove habitats. Again, it has not proved easy to provide adequate protection for such critical habitats.

India has in place most of the available legislative mechanisms for promoting an ecosystem approach to the Bay of Bengal (to the extent possible within existing international law), and to cooperating with the other countries. The main problem is likely to be a lack of ability to deliver in implementation due in part to its federal character, and the sheer scope of the implementation problem.

Indonesia

There can be little doubt that the overall governmental structure of Indonesia involves the most complex distribution of powers and authority of all the countries in the BOBLME region, and it is still in the process of evolution.

It is proposed to start with the basic legislation concerning the EEZ, which is Act no 5 of 1983 on the Indonesian Exclusive Economic Zone (18 October 1983).

This Law serves the same basic function as do most of these types of law in setting out the claim to the EEZ in international law, however, whereas most of the laws of other countries in the region contain a detailed rule making power, the Indonesian law merely has a very general provision which states in Art 20 that “*other statutory regulations may be adopted to further the provisions of this Act.*” This could, of course, be interpreted as a sufficient basis for the enactment of detailed regulations given that the law, like the Indonesian legal system, follows more of a civil law approach than most of the other countries in the region, which are mainly common law based, and where a more detailed guide for the making of subordinate legislation would be expected.

It is, however, an important law in its own right, not merely because it deals with the EEZ, but because it builds on Indonesia’s important claim to archipelagic waters. Thus, while this law, like the others, applies in the EEZ, in some respects, this could be

much further seaward than 200 miles from the land (or to be precise, the baselines from which the zone is to be measured)

The Law sets out the claim to sovereign rights in the EEZ with respect to exploration, exploitation, management and conservation of the living and non living resources on the seabed and subsoil as well as the water above it, as well as the claims to jurisdiction in accordance with the 1982 UN Convention. Unusually, it acknowledges that there are both rights and duties derived from the 1982 Convention.

While the law lacks a detailed rule making power, it does nonetheless (in article 5) state that activities within the zone may only be conducted with the permission of the Government of the Republic.

Of particular note is article 8, which sets out a broad duty to “take steps towards preventing, minimizing, controlling and surmounting the pollution of the environment”, while paragraph 2 requires that any discharge of waste may be effected only with the permission of the government of the Republic.

Articles 9 and 10 sets out a broad indemnity provision to the effect that anyone who conducts any activity in violation of any provision of the statutory regulations of Indonesia in relation to artificial islands installations and structures, or in relation to marine scientific research shall be held fully responsible and liable to a reasonable amount of rehabilitation costs. Article 11 sets out an additional obligation in respect of pollution of the marine environment and/or damage to the natural resources shall be held fully responsible and shall apply a reasonable amount of the rehabilitation costs.

This law needs to be seen in conjunction with the Fisheries Act, 1985

The Fisheries Act sets up a licensing system for commercial fishing. The Act does not permit foreign fishing except where there is a surplus which the Indonesians do not

have the authority to harvest. For that, a permit is needed, and there is an agreement between Indonesia and the country of the nationality of the owner.

The law does not define an Indonesian fishing vessel which might give rise to problems of interpretation, especially if chartering of vessels is permitted as it once was. There are now quite a few foreign vessels registered as Indonesian but which are not Indonesian controlled.

Environmental laws

The original framework for environmental legislation was located in the Environmental Management Act No. 4 of 1982, which was a follow on the from the 1972 Stockholm Conference. This Act has since been replaced by Act no 23 of 1997 concerning the Management of the Living Environment, known as the Environmental Management Act, 1997. However, implementing laws passed under the earlier Act have remained in force. Further, the Act, and the implementing laws need to be seen in the context of certain broad state policies Garis-garis Besar Haluan Negara (GBHN), which are guidelines for state policy passed every five years.

Article 3 of the 1997 Act states that its basic objective and target is: *"environmental management consistent with national responsibility and sustainable development", and "exploitation within the framework of the holistic development of the Indonesian individual and community in its entirety"*.

Chapter III refers to the right of every person to a healthy environment and the obligation to preserve environmental functions and combat environmental pollution. Chapter IV provides that natural resources are controlled by the state, and are to be developed by the government for the greatest possible public good. It is not completely clear on whom the prime responsibility for implementation rests. The law also provides for delegation to provincial authorities, though further subordinate legislation and Presidential decisions will be needed for that to become effective.

Chapter V prohibits every business or activity from disregarding environmental quality standards and criteria, and environmental impact analysis is required in certain circumstances, though regulations will elaborate on these.

One aspect that is worth highlighting is chapter VII which provides for environmental dispute settlement. According to Tan⁴:

“Chapter VII provides for environmental dispute settlement either through judicial or extra-judicial means. Judicial settlement anticipates the payment of compensation and the issuance of orders to carry out certain actions. Two very significant features of the 1997 EMA appear in this Chapter - first, strict liability is prescribed for violations involving hazardous and toxic materials which cause significant impact to the environment. Second, following recent decisions in the courts, community and environmental organisations are explicitly given standing to bring class actions in court and/or to report on environmental violations.”

The law also provides for investigations by national police investigators (Ch VIII) while Ch IX sets out penalties for environmental violations.⁵

⁴ APCEL report: Preliminary Assessment Of Indonesia's Environmental Law Alan K.J. Tan, Faculty of Law National University of Singapore.

⁵ Intentional offences - maximum imprisonment of 10 years and fine of 500 million rupiah; if death or serious injury is caused, maximum imprisonment of 15 years and fine of 750 million rupiah.

- a. Negligent offences - maximum imprisonment of 3 years and fine of 100 million rupiah; if death or serious injury is caused, maximum imprisonment of 5 years and fine of 150 million rupiah.
 - b. Intentional release of toxic or hazardous materials into the environment - maximum imprisonment of 6 years and fine of 300 million rupiah; if death or serious injury caused, maximum imprisonment of 9 years and fine of 450 million rupiah.
 - c. Negligent release of toxic or hazardous materials - maximum imprisonment term of 3 years and fine of 100 million rupiah; if death or serious injury caused, maximum imprisonment of 5 years and fine of 150 million rupiah.
3. Fines are increased by a third if the offender is a company or a body corporate. More importantly, penalties are also visited upon the individuals who gave the order to commit the violation or who acted as leaders in the commission of the violation. Thus, individuals will not be able to hide behind the facade of a company committing an environmental offence.

Other penalties - "seizure of profits arising from criminal acts"; "closure of all/part of business"; "reparation of consequences of action"; "carrying out of what was wrongfully neglected"; "destroying what was wrongfully neglected" and/or "placing the business under administration for a maximum of three years".

As already mentioned, there is considerable uncertainty as to who has the competence to enforce the various laws. According to Tan⁶, competence appears to be distributed among the following bodies:

1. *The Office of the State Minister for the Environment;*
2. *BAPEDAL;*
3. *Other national sectoral agencies, especially the Ministry of Forestry and Industry, the Ministry of Trade and Industry, the Ministry of Energy and Mining, the Ministry of Agriculture and the Ministry of Home Affairs;*
4. *The local arms of national agencies; provincial and municipal governments; and local bodies like the police, the army and the prosecutors.*

Other problems relate to the enforcement of penalties - several sectoral laws like Government Regulation No. 20 on Water Pollution Control, administered by provincial governments, have provisions which are cross-referenced to criminal and administrative sanctions under the 1982 EMA. There are also provisions in the Industry and Agriculture Acts which are similarly cross-referenced. There is uncertainty as to which ministry/agency/provincial authority is to administer these penalties, and in what manner.

In addition, the relationship between civil, criminal and administrative remedies is uncertain.

However, Tan reports some success in resolving jurisdictional overlaps in relation to the environmental impact assessment process.

In sum, the environmental law itself appears to be quite strong in its provisions. The problem is much more to do with implementation and delegation through the many layers of governance in Indonesia.

Critical habitats

Mangroves

Angell (p.47) makes the following comment about mangrove habitat conservation.

Seventeen national level agencies have some authority in dealing with mangrove habitat conservation (Anonymous 2000b). The key agencies are the Ministries of Forestry, Marine and Fisheries, Agriculture, Environment and Home Affairs, of

⁶ APCEL report, footnote 2 above

which the key Ministry is Forestry. These ministries operate at the national level, but under decentralization, responsibility for management of the coastal zone falls to local government. However, the role of provincial and regency governments in managing coastal and marine resources is not yet well established. Furthermore, community participation needs to be strengthened (Purwako et al. MS) .

Angell also reports that there is considerable damage being done to mangroves by shrimp farming operations despite the need for permits to undertake the activity. He also reports on damage to coral reefs as a result of the use of poisons in certain localities. However, in North Sumatra, he reports that traditional fishers respect the reefs and do not use obnoxious methods. He states (p 43): *“Reefs within 4 km of the coast fall under the jurisdiction of regency and provincial governments, which currently lack the capability to implement conservation measures and enforce regulations.”*

Customary laws

Adat law

Although its importance may have eroded over time and varies greatly from one place to another, adat law or customary law (which refers to unwritten laws, norms rules, traditions and usages of a traditional community) is still very much alive in many islands of Indonesia. Whereas it is likely to be more significant in sparsely populated and isolated areas, there is no doubt that adat law still plays an important role in the management of near shore fisheries in many coastal areas of Indonesia. Lawmakers have allowed for regions to recognize adat law with regard to the exploration, exploitation and conservation of local fisheries. Customary law is generally recognized insofar as it does not conflict with the provisions of the Constitution or any other written law⁷.

⁷ In this regard, it should be noted that provisions of article 36 (3) specify that *adat* law should not apply to endangered species.

Overall assessment. The specific laws applicable in Indonesia are quite complex in their operation and need to be seen in the context of the role of the central and regional authorities which does not make for a clear cut exercise of responsibility. There is also the role of adat law, which is not entirely clear. The major defect does not appear to be the lack of basic laws, rather with their implementation, including the introduction of subordinate legislation and policy instruments to assist in making them effective. As regards fisheries, there is a need for Indonesia to introduce legislation to control fishing on the high seas, as well as enabling the introduction of modern management concepts, including in particular, the precautionary approach and an ecosystem approach. In particular, this should enable it to give effect to the UNFSA, Compliance Agreement, and the IPOA-IUU.

There also appears to be a weakness, most probably of enforcement rather than a lack of applicable laws, with respect to critical habitats.

The environmental laws themselves contain the relevant environmental perspectives that you would wish to find in a modern law. Thus, the problem appears to be one more of distribution of competences and weak enforcement rather than lack of applicable laws.

Malaysia

Malaysia is a parliamentary democracy with its legal system based on the English common law. It has a federal system, with all the complications that usually implies. For example, there are 13 States involved in regulating turtles.

The starting point is the Exclusive Economic Zone Act 1984 no 311. It does not include the territorial sea, as do virtually all of the other laws of the region. In Malaysia, that is dealt with in the Emergency (Essential Powers) Ordinance No 7/69.

The law is also more comprehensive than most of the other basic EEZ laws of the BOBLME countries. It has many definitions, including “dumping”, “Malaysian fisheries waters” (“all waters comprising the internal waters, the territorial sea, and the exclusive economic zone of Malaysia in which Malaysia exercises sovereign and exclusive rights over fisheries”) “mixture containing oil”, “oil”, “pollutant” and “waste”.

The law sets out the basic elements of Malaysia' assertion of sovereign rights and jurisdiction in accordance with the 1982 UN Convention, as well as, unusually, referring both to the rights as well as the duties provided for by international law.

The law is also stated to be in addition to the continental shelf legislation of Malaysia.

The law prohibits any activity on the continental shelf or in the EEZ except where authorized by any applicable law.

It has a short Part (III) on fisheries, which includes the EEZ as part of Malaysian fisheries waters, and gives responsibility to the Minister charged with responsibility for fisheries to be responsible also for fisheries in the EEZ.

Part IV deals with the protection and preservation of the marine environment. Section 9 states: *"Malaysia has the sovereign right to exploit her natural resources in the (EEZ) pursuant to her environmental policies and in accordance with her duty to protect and preserve the marine environment in the zone."*

Section 10 places a heavy penalty (a fine up to one million ringitt) if any oil, mixture containing oil, or pollutant is discharged or escapes into the EEZ from any vessel, land based source, installation, device or aircraft from or through the atmosphere by dumping. There is also a duty to report any such discharge to the Director General.

The law sets out a number of other important powers relating to the EEZ: Measures relating to a maritime casualty (section 13), directions and action to remove, disperse, destroy or mitigate damage, (section 14), the power to detain or sell a vessel (section 15) Part V deals with marine scientific research in the EEZ. Part VI deals with artificial islands, installations and structures, while Part VII deals with submarine cables and pipelines. In Parts VIII and IX, there are extensive provisions dealing respectively with enforcement and offences, penalties, legal proceedings and compensation. In this instance, compensation refers to compensation by the offender.

The law also sets out a regulation making power which focuses on marine scientific research, measures to protect and preserve the marine environment of the EEZ, including conditions to be complied with by foreign vessels before entering any port or in the internal waters of Malaysia, regulating artificial islands, installations and structures, regulating the exploration and exploitation of the EEZ from the water, currents and winds and for other economic purposes.

It will be noted that the law follows closely here the wording of the 1982 UN Convention in focusing on economic purposes. Also, the regulation making power does not extend to fisheries, which is covered in the separate fisheries law.

Overall, this law is comprehensive and has several provisions which could be utilized in part to promote ecosystem objectives in the EEZ, even though it does not use that language.

The Fisheries Act, 1985 is a comprehensive law on fisheries, which, at the time, provided a very solid basis for managing the fisheries resources in the Malaysian fisheries waters. The definition of such waters has avoided the restrictive zonal approach of many other countries by dealing only with the EEZ as regards fisheries. Here, it is recognized that fish need to be managed throughout their range, at least as regards the internal waters the territorial sea and the EEZ. It was, in other words, a precursor of LME thinking at the national level.

The Act has extensive provisions on interpretation (a typical common law Act in this respect). It sets out the responsibility of the Minister, and who are fisheries officers. It also sets out the requirement for fisheries plans, and has a part on General licensing (Part IV) which is very comprehensive, containing, *inter alia*, provisions on fishing without a license, applications for a licence in respect of a new vessel, conditions which may be imposed as well as the power to make directions, licenses in respect of local fishing vessels, fishing stakes, fishing appliances, fish aggregation devices or marine

culture systems, as well as powers to refuse to grant a license or to suspend one. It has a part on foreign fishing vessels, including the innocent passage of foreign fishing vessels through Malaysian fisheries waters.

The Act provides for licences for local fishing and for permits for foreign fishing. It also has a detailed part on offences, including fishing with explosives or poisons, protection of aquatic mammals or turtles in Malaysian fisheries waters, the forfeiture of vessels in certain circumstances, and the power of a court to cancel a licence or permit in certain circumstances.

The Act has a Part (VII) devoted to turtles and inland fisheries with provision for the State authority and the Minister to make rules concerning turtles and inland fisheries.

Part VIII deals with aquaculture and the control of live fish, and while far sighted for its time, this part probably needs to be revised to incorporate a more elaborated regime for aquaculture, especially in view of its increased importance in regard to the protection of mangroves is concerned.

The Act also has an elaborate part on marine parks and marine reserves, with the capacity to apply strict controls over activities in such areas, the absolute prohibition of certain weapons, and a power to make regulations. It also provides for the setting up of a National Advisory Council for marine parks and marine reserves.

Part X deals with enforcement, with provisions on the powers of authorized officers, powers of entry and arrest, powers of investigation, seizure and forfeiture of a vessel, sale of perishable fish, obstruction of an officer, etc

Part XI contains general provisions amongst which is an extensive power to make regulations.

A number of regulations has been issued in respect of fisheries. The main ones are set out in the footnote below.⁸

In an article presented to an IUCN meeting on the subject, the following useful information has been provided:⁹

Though parks and reserve were established as early as in 1925 (Jasmi 1996), they confined only to main land areas. It was only in 1983, steps were taken to initiate for the conservation of the natural marine habitats in the form of marine parks and marine reserve (Ch'ng 1990) surrounding selected offshore islands. Initial MPA establishment was made in 1983, where water areas of 8 km surrounding Pulau Redang, Terengganu was gazetted as Fisheries Protected Area. In 1985, water areas of 3 km surrounding 21 islands in Terengganu (including Pulau Redang), Kedah, Pahang and Johor were also gazetted as Fisheries Protected Area. These gazettements were made under the Fisheries Act of 1963.

The Fisheries Act of 1963 was later replaced by the Fisheries Act of 1985 with the objective, among others, to cater for the rapid expansion of the fishing industries and for the management, protection and conservation of marine habitats and other living marine resources such as corals, marine mammals and turtles. Under the Fisheries Act of 1985, a provision for the establishment of marine park or marine reserve was made under Part IX – Marine Parks And Marine Reserve (Sections 41 –45).

⁸ Various regulations have been issued under the Fisheries Act. The ones applicable to maritime fisheries are:

- * The Fisheries Ordinance (Sabah) 1963
- * Fisheries (Maritime) (Sarawak) Regulations 1976
- * Fisheries (Maritime) Regulations 1967
- * Fisheries (Maritime) (Licensing of local fishing vessels) Regulation 1985
- * Fisheries (Prohibition of Import etc of Fish) Regulations 1990
- * Fisheries (Prohibition of Method of Fishing) regulations 1980 & Fisheries (Prohibition of Method of Fishing Amendment) regulations 1990
- * Fisheries (Rantau Abang Prohibited Area) Regulations 1991
- * Fisheries Prohibition Area Regulations 1994 & Fisheries (Prohibited Areas (Amendment) Regulation 1998
- * Fisheries (Closed season to catch Kerapu Fry) Regulations 1996 & Fisheries (Prohibition of Method of Fishing for Kerapu Fry) Regulations 1996
- * Fisheries (Protection of Endangered Species) Regulations 1999

⁹ from the Proceedings of IUCN/WCPA-EA-4 Taipei Conference
March 18-23, 2002, Taipei, Taiwan
Marine parks Malaysia: Current Status and Prospect
Of Marine Protected Areas in Peninsular Malaysia
Najib Ramli, Azahari Ahmad, Khalil Karim
Marine Parks Branch, Department of Fisheries Malaysia

Though, the Department of Fisheries has been established for more than 100 years, the development of the MPA or marine parks in accordance to IUCN/CAP categories, is still in its infancy stage.

Coral rich areas as well as fisheries protected areas are only gazetted in 1994 as Marine Parks Malaysia under the Fisheries Act of 1985. In October 1994, water areas of two nautical miles surrounding 38 islands in Kedah, Terengganu, Pahang, Johor and Federal Territory of Labuan were gazetted as Marine Parks Malaysia. In 1998, two more islands in Terengganu were added to the list.

In 1991, water in front of Rantau Abang, Terengganu was gazetted as a Fisheries Protected Area which aim to protect turtles from accidental catch due to fishing activities in the area. Three islands in Sarawak; Tanjung Tuan and Pulau Besar, Melaka were also gazetted as Fisheries Protected Area in 1994 and 1998 consequently. In Malaysia's contexts, Marine Parks Malaysia and Fisheries Protected Area is an area of the sea zoned as a sanctuary for the protection and conservation of 1 The World Conservation Union/World Commission on Protected Areas marine eco-systems especially coral reef and its associated fauna and flora.....

IV. OBJECTIVES OF THE MARINE PARKS

The establishment of marine parks manifest the Department of Fisheries aspiration and contribution to the very topical and contemporary subjects of protection and conservation of marine resources, habitats and as one of the management tools towards sustainable fisheries. As protected areas, they are able to contribute to the objective through conserving critical habitats and biodiversity, prevention of over fishing, maintaining habitat continuity and supporting the maintenance of essential ecological processes for multiple use. Marine Parks Malaysia benefits not only the direct users, such as fishers. It also gives the opportunity to a wide range of users (stakeholders) such as the assemblies of nature-lovers, the tourism operators, academicians, scientists and people from all walks of life. The parks also provide platforms for the sustainable development of the tourism industry. As a whole, the objective of Marine Parks Malaysia are as follow;

- 1. To conserve and protect biological diversity of marine community and its habitats;*
- 2. To upgrade and conserve the natural habitats of endangered species of aquatic life;*
- 3. To establish specific management zone for the conservation of aquatic flora and fauna; and*
- 4. to establish zones of recreational use consistent with the carrying capacity of the area.*

There is currently under consideration a High Seas Fisheries Bill which it is believed will give domestic legal effect to the 1995 UN Fish Stocks Agreement and the 1993 FAO Compliance Agreement.

Environmental legislation

The basic law is the Environmental Quality Act 1974, as amended. It regulates the prevention, abatement, control of pollution and the enhancement of the environment. It is the legislation relied on most to deter marine pollution in Malaysia. The Department of Environment administers the Environmental Quality Act.

The Act is very comprehensive and has detailed definitions typical of a law drafted in the common law style.¹⁰

The Act prohibits the discharge of oil and wastes into Malaysian waters (defined as including the territorial waters) unless licensed by the Department of Environment or within acceptable conditions of discharge. It has provisions dealing with pollution of the atmosphere, pollution of inland waters, and pollution into the territorial sea. There is also a broad regulation making power.

The Act also appoints a Director General and establishes the Environmental Quality Council.

The Act in section 18 permits the Minister to prescribe premises the occupation or use of which would be an offence unless there is a license issued in respect of the premises

¹⁰ Thus section 2 has definitions of: aircraft, beneficial use, committee, computer, control equipment, Council, director, General, document, element, environment, environmental audit, environmental management system, environmental risk, environmentally hazardous substances, fund, goods, industrial plant, inland waters, local authority, Malaysian waters, Minister, Mixture containing oil, monitoring programme, occupier, oil, owner, pollutants, pollution, practicable, premises, prescribed, prescribed conveyance, prescribed premises, prescribed product, scheduled wastes, segment, ship, soil, trade, transit, vehicle and waste.

in question. In addition, the Act imposes a requirement for the approval of plans to carry out any work or building erection or alteration.

The Act gives, in section 21, the power to specify conditions of emissions, discharges etc, likewise restrictions on the pollution of the atmosphere are imposed (section 22). Noise pollution and pollution of the soil is also controlled, as is pollution of inland waters (section 25). The latter is relevant to the control of land based pollution. It prohibits anyone who is not licensed to do so, from emitting, discharging, depositing any environmentally hazardous substances pollutants or wastes into any inland waters in contravention of any acceptable conditions specified under the Act. A penalty is imposed for breach of this provision, namely, a fine of up to one hundred thousand ringitt, or to imprisonment or to both, as well as a fine not exceeding one thousand ringitt for continuing an offence after notice to cease the activity in question has been served.

Section 27 prohibits discharges into Malaysian waters of any oil mixture containing oil in contravention of any acceptable conditions specified under the Act, though it should be noted that this applies only to the territorial sea.

There are other detailed provisions, including, for example, a prohibition against burning, and the maintenance of equipment. One provision that could well have a bearing on controlling land based pollution is section 33, which gives the Director General the power to prohibit licensed discharges where it appears that, while each person is complying with the conditions of a licence, nonetheless the aggregate of the wastes discharged into a segment or element of the environment is such as to cause a worsening of that segment or that element such as *“to affect the health, welfare, or safety of human beings, or to threaten the existence of any animals, birds, wildlife, fish or other aquatic life”*.

The Act also has detailed provisions for environmental impact assessments in respect of any activities that may have a significant environmental impact. (section 34A)

There are also controls on disposal of scheduled wastes except with the prior written approval of the Director General.

According to Teoh, “The generation, storage and movement of hazardous waste into and out of Malaysia are covered in Part IVA of the Environmental Quality Act. It is necessary to obtain prior written approval of the Director General of Environmental Quality for the storage, movement and import and export of hazardous waste. These provisions give effect to the Basel Convention. The import and export of the hazardous wastes are covered by Orders under the Customs Act, 1967”¹¹

The Act also provides for a general regulation making power.

Overall, the Act is very comprehensive in its subject matter, however, while it contains provisions which can be used to control land based pollution, the Act may have limitations when it comes to controlling siting of potential sources of pollution.

The Exclusive Economic Zone Act 1984 prohibits the discharge or escape of oil, oil mixture and pollutants into the exclusive economic zone ⁷ Both are enforced by the Department of Environment ⁸

Critical habitats

While the conversion of mangroves to shrimp farms has been controversial Angell depicts some success in certain localities with respect to the management of mangroves see p.30.

Angell (p.47) also reports:

Malaysia has worked with FAO to develop an integrated regulatory system for aquaculture in the short to medium term without attempting to enact a new

¹¹ *Marine Pollution in Malaysia Philip Teoh*

comprehensive aquaculture act. This involves enacting new regulations under the existing Fisheries Act, introducing a voluntary Code of Responsible Aquaculture Practices for inland cage culture and shrimp farming, supported by incentives, and strengthening institutional structures to ensure the ongoing formulation and monitoring of aquaculture policy at federal and state levels (FAO 1997).

Traditional ownership and Customary use systems

Very little evidence of these has been found so far. However, it is more likely that there is a lack of available information on this than that it is non-existent.

Overall summary: despite being a federal system, with the jurisdictional complications which such a system implies, Malaysia has some quite advanced laws in the context of the region. However, it still lacks a law to deal with high seas fishing, though it is understood that one is in an advanced stage of preparation. Once such a law is in place it may be easier for Malaysia to apply certain concepts found in that agreement, but that will depend on how it is drafted in its final form, in particular whether it brings in modern management concepts such as the precautionary approach, or the ecosystem approach. Likewise, the capacity of Malaysia to enforce its laws, is in general better than is the case for most of the countries of the BOBLME region. However, it is probably in the area of land based sources of marine pollution that Malaysian legislation is at its weakest. There is also some evidence of certain critical habitats being protected well, at least better than for most countries in the BOBLME.

Maldives

Maldives is a nation of small islands located in the central Indian Ocean. The archipelago consists of about 1190 tiny coral islands of which 202 are currently inhabited. These islands are found in 26 natural atolls, and are grouped into 20 administrative areas.

Maldives is set in an area of 90,000 square kilometers and is located about 600 kilometers off south west Sri Lanka, stretching along 73° East longitude from about 8° North to 1° South. The country has a total land area of about 298 km² of which less than 10 percent is used for agriculture (GOPA, 1992). Agricultural activity is limited in

Maldives because of the limited land-based resources. Maldives is therefore quite different from other countries of the BOBLME region.

The potential for developing a modern economy in Maldives largely rests on two economic sectors – fishing and tourism. Given the scarce terrestrial resources of the country, fishing has always been one of its main economic activities.

The Maritime Zones of Maldives Act no 6/96 sets out the basis for Maldives to exercise sovereignty, sovereign rights and jurisdiction over its maritime zones. This Act is very short. It sets out the basis for the archipelagic claim by Maldives, which is defined by reference to geographical coordinates set out in the Annex to the Act. It also sets out the basis for the claim to the territorial sea, the contiguous zone and the exclusive economic zone of Maldives.

Section 9 sets out the rights of Maldives in the EEZ. It has *“sovereign rights for the purpose of exploring and exploiting, conserving and managing the natural resources contained therein, whether living or non living, and with regard to other activities for purposes of the economic exploitation of the zone. Economic exploitation of the natural resources found in the zone by persons other than nationals of Maldives or the conduct of scientific research within the zone as well as the construction, operation and use of any artificial island installation or structure within the zone for any of the foregoing purposes shall be subject to authorization from the Government of Maldives.”*

The law also sets out stringent controls over passage though the waters. While it gives a right of archipelagic sea lanes passage through the sea lanes designated by the government from among international navigation channels, and in accordance with regulations made under the Act (section 12), it prohibits passage though the EEZ by a foreign vessel *“except with authorization from the Government of Maldives in accordance with the laws of Maldives.”*

Section 16 also states: *“in addition to matters provided in this Act, Maldives shall enjoy in relation to its maritime zones all other rights and jurisdiction states enjoy under international law as regards other maritime zones.”* This is important as section 9 quoted above makes no reference to the exercise of jurisdiction with respect to marine pollution in accordance with the 1982 UN Convention. This clause could provide the basis for the exercise of such jurisdiction should Maldives choose to do so. That said, a fully fledged law with respect to vessel sourced and land based pollution would be a preferred option.

Finally, section 17 states that *“The Government of Maldives has the jurisdiction to adopt regulations in respect of the maritime zones of Maldives and airspace thereabove.”*

The main law regarding fisheries is the Fisheries Law of the Maldives 1987 No 5/87. It is believed that this law may be undergoing a revision. The Fisheries Law, which is unusually short, provides a very basic framework for the control of fishing in the EEZ of Maldives. However, there is a note to the definition of “fisheries” which says: *“‘seas’ in this law means the high seas and the waters inside the atolls and includes lagoons, shallow water areas and reefs”*.(section 2)

Section 3 places an obligation (“shall”) on the Ministry of Fisheries *“to oversee all fisheries activities in the country. It shall be the obligation of the Ministry of Fisheries to explore the possibilities for the development of fisheries, to carry out the research needed for such development and to develop fisheries.”*

Section 5 requires commercial fishing by foreigners, including jointly with Maldivians to be undertaken only with the permission of the Ministry of Trade and Industries.

The law also provides for inspection of fishing vessels (section 6 (iii)), as well as the requirement of prior permission of the Ministry of Fisheries before entering the EEZ if not already licensed under this law.(section 7)

Section 8 deals with the cancellation of licences. Section 10 gives the Minister the power to prohibit for a specified period the fishing, capturing or taking of certain species in special need of conservation, or the right to “*establish special sanctuaries from where such species may not be fished, captured or taken.*”

Section 11 gives the Ministry of Defence and National Security the right to stop any vessel suspected of contravening the law, and to check its contents. It may also apprehend any vessel and objects used in carrying out an offence, and the right to arrest anyone suspected of committing an offence.

Section 12 provides a very general power for the Ministry to have in its care any vessel apprehended under section 11. A number of penalties are imposed.

While it is stated to apply to the high seas, the law does not address high seas issues covered by the 1995 UN Fish Stocks Agreement or by the FAO Compliance Agreement, or, for that matter, issues covered Code of Conduct for Responsible Fisheries or in the IPOA-IUU. It does not introduce into Maldives the latest management concepts such as the precautionary approach or ecosystem considerations – in other words, post UNCED considerations.

The Environment Protection and Preservation Act No 4/93 is also quite short, and it sets certain basic controls relating to environmental protection. The introduction to the law states: “*The natural environment and its resources are a natural heritage that needs to be protected and preserved for the benefit of future generations. The protection and preservation of the countries land and water resources, flora and fauna are important for the sustainable development of the country*”

Section 2 permits the concerned governmental authorities to provide the necessary guidelines and advice on environmental protection in accordance with the prevailing

conditions of the country. All concerned parties shall take due consideration of the guidelines provided by the government authorities.

Section 4 gives the Ministry of Planning, Human Resources and Environment responsibility for identifying protected areas and natural reserves and for drawing up of necessary rules for their protection and preservation. Also, any one wishing to establish such an area shall register that area with the Ministry and abide by the rules and regulations laid down by the Ministry.

Section 5 sets out the requirement of having a prior environment impact assessment *“before implementing any developing project that may have a potential impact on the environment.”*

Section 6 gives the Ministry the power to terminate without compensation any project that has *“any undesirable impact on the environment.”*

There are also provisions (section 7) dealing with waste disposal, oil and poisonous substances, which are not to be disposed of in the Maldives. However, if their disposal is *“absolutely necessary, it may be disposed of only within areas designated for that purpose”*.

There is also (section 8) a ban on disposal of hazardous/toxic or nuclear wastes anywhere in the country, while movement of such wastes through the “territory” of the Maldives requires permission obtained three months in advance.

The Act (section 9) imposes penalties, which in the case of minor offences, can range from five Rufiyaa to five hundred Rufiyaa. For major offences, a fine of one hundred million Rufiyaa may be imposed, which shall be levied by the Ministry of Planning, Human Resources and Environment.

Finally, there is a definition of environment as meaning “*all living things that surrounds and effects the lives of human beings.*”

Around the atolls, there have been placed protection zones for tourism purposes i.e. to maintain the state of the fragile atolls. In fact, the level of protection of the fragile habitats is high in view of the importance of tourism to the economy, and the role that the reefs and atolls play in that activity.

The law, while brief, does nonetheless provide the basis for the imposition of certain environmental controls. It is also a basis, in section 4, for controlling and protecting critical habitats. However, like the fisheries law, it needs to bring into the national legal system itself modern environmental concepts that would support a more sustained ecosystem approach towards environmental management.

Land based pollution

Kaly (p.101) reports a significant amount of land based pollution. The only provision that permits this to be dealt with is pursuant to section 7 of the Environment Protection and Preservation Act No 4/93.

Kaly has identified significant disposal problems for domestic pollution. Also tourist hotels have had to install various facilities to dispose of wastes.

Overall summary. The legislative regime of the Maldives is very terse and brief. However, it appears that the government uses quite effectively what powers it has. It is very preoccupied with protecting the tourism industry. It has not, however, legislated to give effect to the 1995 UN Fish Stocks Agreement, the FAO Compliance Agreement, or the IPOA-IUU which would enable it to deal with any of its vessels fishing on the high seas. Further, it has remained aloof from joining the IOTC. The legislation overall does not incorporate directly modern environmental principles such as the precautionary approach, or the promotion of ecosystem approaches, though much of its actions are geared towards those objectives even if not explicitly stated in those terms.

It has been reasonably successful in protecting fragile habitats in recent years, though there are still significant pollution problems reported by Kaly. No evidence has been found so far of traditional ownership and customary rights.

Myanmar

Myanmar is governed by the State Peace and Development Council, previously known as the State Law and Order Restoration Council. The hierarchy of legislation in Myanmar is as follows:

1. The Constitution;
2. Laws issued by the SPDC (exercising legislative functions);
3. Decrees or subsidiary legislation issued by Ministers.

The Territorial Sea and Maritime Zones law 1977 is the basic law concerning the maritime zones of Myanmar. It sets out (Chapter II) the basis on which Myanmar exercises sovereignty over the territorial sea (of twelve miles from the baselines set out in the annex to the Law), jurisdiction (“control”) over the contiguous zone beyond and adjacent to the territorial sea up to 24 miles from the baselines (chapter III), sovereign rights with respect to the continental shelf up to 200 nautical miles or to the outer edge of the continental margin, exclusive rights and jurisdiction for the construction, maintenance or operation of artificial islands, offshore terminals, and other structures and devices necessary for the exploration and exploitation of its natural resources, both living and non living, for the convenience of shipping and for any other purpose (significantly not limited to any other “economic” purpose)(Chapter IV)

The law also sets out (in Chapter V) the assertion by Myanmar of sovereign rights to its exclusive economic zone, which mirrors the language used in respect of the continental shelf. Like many of the laws of the region, it refers to only the rights enjoyed by the coastal state in that zone, and makes no reference to the duties of the coastal State under the 1982 UN Convention.

Chapter VI sets out offences and penalties, which extends to any person who contravenes or attempts to contravene or abets the contravention of any provision of this Law or of any rule made there under shall be punishable with imprisonment which may extend up to ten years, or with fine, or with both. It also provides for confiscation of vessels (other than warships) which have contravened the law. It should be noted that, in providing for imprisonment of foreigners for violations of fisheries laws and regulations, the law goes beyond the provisions of article 73.3 1982 UN convention.

Chapter VII provides for the promulgation of regulations. The baselines from which the territorial sea is measured are controversial in some respects as certain baselines are not accepted by all countries in view of their perceived considerable length.

Myanmar has two principal laws governing fisheries. The first was brought into force in 1989, and is entitled Law relating to the Fishing Rights of Foreign Vessels.

It has provisions concerning definitions, including a definition of Myanmar fisheries waters which means “*the exclusive economic zone, territorial sea, inshore and all inland brackish waters and fresh waters*”.¹² It has chapters on payment of duties and fees, duties and rights of an entrepreneur, duties and powers of the Director-General, Duties and powers of the Inspector, Duties of the Master, invalidity of a licence, appeals, prohibitions, offences and penalties (which includes the possibility of imprisonment for foreign fishers). It does not have a regulation making power, though there is a vaguely worded provision (section 47 c), which authorizes the Minister to make or issue “*any other order or directive that appears to be reasonably suitable in respect of the fishery.*”

¹² Other definitions are: Minister, Ministry, Department, Director-General, Inspector, Baselines, Territorial sea, EEZ, fishing vessel, foreign fishing vessel (a vessel belonging to a foreigner and which is registered in a foreign country) master, person, entrepreneur, fish, fishery, fishing, fishing implement, processing, licence, licence fee, and fresh fish duty.

The Marine Fisheries Law 1990 is an extensive law dealing with Myanmar fishing. Chapter I sets out the title and definitions used under the law

Definitions are provided for the following: Minister, Director General, Officer-in-charge of the Department, inspector, Myanmar Marine Fisheries Waters, Fish, Fishery, Fishing, Inshore Fishery, Offshore Fishery, Fishing Implement, Fishing Ground, Fishing Vessel, Local Fishing Vessel, Foreign Fishing Vessel, Master of the Vessel, Marine Products, Site for Collecting Marine Products, Fisherman Licence, Licence Holder, Licence Fee, Citizen, Foreigner.

The other chapters provide for: Chapter II, application for licence. Chapter III, payment of duties and fees, Chapter IV registration, Chapter V, determination of fishing ground, Chapter VI, duties and rights of a licence holder, Chapter VII, powers of the department and the director general, Chapter VIII, duties and powers of the inspector, Chapter IX, duties of the master of the vessel, Chapter X, appeals, Chapter XI, prohibitions, Chapter XII, offences and penalties, Chapter XIII miscellaneous. It is not necessary to analyze this law in detail. It is well drafted for the most part and comprehensive. It provides a solid legal basis for controlling the fishing activities in the Myanmar fisheries waters. One of its provisions is particularly relevant to the subject of this study: section 36.

No person shall dispose of from aboard the fishing vessel living creatures or any material to cause pollution of the water media or to harass the fishes and other marine organisms.

In the national consultant's report on Myanmar, the following information is reported:

Prohibition of fishing gear

Under the "Law Relating To the Fishing Rights Of Foreign Fishing Vessels" and "Myanmar Marine Fisheries Law" and related regulations, fishing gear that is destructive to the environment and the fisheries resources are banned. These gears include pair trawl fishing, electric fishing, fishing using poisons, chemicals and explosives, push net, Purse seine net less than 1 inch mesh size, for trawl net cod-end mesh size less than 2 inches, drift net less than 4 inches mesh size, trammel gill net for less than 1.5 inches mesh size, etc.

Environmental laws

An early law which controlled effluent discharges from factories is the Factory Act 1951

Likewise there is the Protection of Wild life and Wild Plants and Conservation of Natural Areas Law, though it is not clear what effect this law has had.

Myanmar has no detailed framework laws or comprehensive action plans concerning environmental management. However, with the formation of the National Commission for Environmental Affairs (NCEA) in 1990, a [National Environmental Policy \(NEP\)](#) has been formulated.

Environmental management in Myanmar is sectoral in approach. Since 1995 there has been in existence the Myanmar Agenda 21, which is a policy document providing an integrated framework of programmes and actions aimed at sustainable development. The document was completed in 1997.

Despite the role of NCEA, it is still far from clear that broad based modern environmental concepts have been brought into mainstream thinking in Myanmar. The approach still seems to be sectoral in character, and with very little effective coordination between central and state authorities.

According to APCEL¹³:

“The laws which currently exist in Myanmar are generally too broad and inadequate to deal with complex environmental management issues. Detailed implementing legislation do not exist to deal with specific issues such as waste management, land use and biodiversity protection. In relation to pollution, Myanmar has no specific laws to govern air and water pollution. There is a general provision in Section 3 of the Public Health Law which empowers the Government to carry out measures relating to environmental health, such as garbage disposal, use of water for drinking and other purposes, radioactivity, protection of air from pollution, sanitation works and food and drug safety. However, detailed provisions do not exist to ensure more effective and comprehensive regulation of these matters.”

¹³ Preliminary report on Myanmar’s Environmental Law by Alan Tan, University of Singapore.

The only control of water pollution in the country is through guidelines issued in June 1994 by the Myanmar Investment Commission. These guidelines require that new projects, from both foreign and private investments, have waste water treatment plants or systems. In addition, some elements of the Pesticides Law provide for water pollution control, but only incidentally. River and lake pollution from sewage, industrial waste and solid waste disposal are serious problems, but are not regulated explicitly by any laws. Furthermore, the waterworks and sanitation facilities in the country are not of consistent quality. Nor are their operations coordinated by any one governmental agency. In Yangon and Mandalay, waterworks are managed by the Yangon and Mandalay City Development Committees respectively, while in wards and villages, the local municipal authorities are in charge of sanitation facilities.”

These comments suggest that there is an urgent need for a more comprehensive legal basis for tackling pollution, especially land based pollution.

APCEL also published the list below of environmental laws in Myanmar, which is dated August 2003:

Description/subject: Texts of: * Drug Law, National (Law No. 7/92, 1992) * Fishing Rights of Foreign Vessels, Law Relating to (Law No. 11/89, 1989) * Fishing Rights of Foreign Vessels, Law Amending Law Relating to (Law No. 15/93, 1993) * Forest Law (Law No. 8/92, 1992) * Freshwater Fisheries Law (Law No. 1/91, 1991) * Marine Fisheries Law, Myanma (Law No. 9/90, 1990) * Marine Fisheries Law, Law Amending Myanma (Law No. 16/93, 1993) * Pesticide Law (Law No. 10/90, 1990) * Plant Pest Quarantine Law (Law No. 8/93, 1993) * Private Industrial Enterprise Law (Law No. 22/90, 1990) * Protection of Wild Life, Wild Plants and Conservation of Natural Areas Law (Law No. ___/94, 1994) * Science and Technology Development Law (Law No. 5/94, 1994)

Critical habitats

In the national consultant’s report for Myanmar, the following information is contained:

Mangrove

The extent of Myanmar mangroves is about 382,032 hectares, out of which 177256 ha can be found in the Ayeyarwady delta, 140024 in the Tanintharyi region and 64752 in the Rakhine. Mangrove forest ecosystems provide a wide range of goods and services from which local peoples in coastal area have derived benefit from time immemorial. There are a wide range of direct and indirect products from mangroves which form the basics for mangrove-dependent

economic activities vital to many coastal peoples in Myanmar. Firewood and charcoal are the main products extracted from the Delta. The annual fuel-wood requirement for Yangon is about 700,000 hoppus ton, and this demand is increasing due to population growth. However, Ayeyarwady Delta fuel-wood production, including some 432,200 hoppus ton is sufficient to meet only 62% of this demand. Myanmar mangrove forests, particularly in the Ayeyarwady Delta, have come under pressure due to over-exploitation of the forest for charcoal production. Moreover, as most rural homes in Myanmar depend heavily on fuel-wood for cooking, it has resulted in depletion of forest cover in marginal forest outside the reserved forest area. The satellite image of February, 1995, of the Delta area indicates 5.8% of forest area in Latputta in place of 32.2% and 19.5% in Bogalay in place of 51.89% and no forest exists in Mawlamyinegyun at present. The condition of mangrove vegetation during 1974 and 1995 shows the extent of degradation within two decades. The land use of Mangrove in Ayeyarwady(Delta) is shown in Annex i.

Angell (p.40) notes: *The Department of Fisheries specifies that shrimp farming shall be limited to secondary and degraded forests but technology is restricted to extensive or “improved” extensive farming. It also stipulates that a buffer zone should be established around these types of farms, but no criteria are given for it. Shrimp farming is allowed in tidal marshland. The DoF prohibits intensive shrimp farming on the basis that it is too damaging to the environment.¹⁴ However, the definitions of these different culture technologies are somewhat flexible and usually based on the stocking rate, that is, number of seed stocked per m².*

The national consultant has identified damage occurring to mangroves, while Angell has identified certain attempts to control shrimp farming in these areas. Kaly has identified coastal aquaculture as a source of growth but there appears to be a lack of information about damage to critical habitats.

Overall conclusion: the legal regime is very patchwork and sectoral. In terms of fisheries, while basic fisheries laws exist to deal with fishing (both foreign and local) in the EEZ, there is no provision for dealing with high seas fishing. In particular, there is a need to incorporate the 1995 UN Fish Stocks Agreement and the FAO Compliance Agreement, and to introduce modern environmental concepts such as the precautionary approach and ecosystem considerations into the national legal regime.

¹⁴ Myanmar National Report BOBLME

There is a lack of information on land based sources of pollution, though the legal regime is not adequate to deal with this effectively largely because of the sectoral approach which underlies most legislation, and above all the absence of a modern cross cutting multisectoral environmental law.

The main problem seems to be institutional weakness combined with an absence of an effective modern multisectoral environmental laws. For example, EIA cannot be imposed under Myanmar law though it is reported that it is sometimes put into effect via aid projects, which is hardly a satisfactory long term solution.

Overall, it would be difficult for Myanmar to put into effect practical measures to promote large marine programmes without amending first its existing laws.

Sri Lanka

The Constitution assigns a broad responsibility to “*protect, preserve and improve the environment for the benefit of the community.*”

The basic law governing the marine sector is the Maritime Zones Law No 22 of 1976

This Law provides for the declaration of certain maritime zones, in particular, the territorial sea (section 2), and the right of innocent passage (section 3), a contiguous zone (section 4), which includes the novel ground of “security”, while section 5 permits the declaration of an economic zone and provides for the rights Sri Lanka may enjoy in that zone. It does not make any reference to duties. Section 6 provides for a continental shelf.

Section 7 (1) permits the President to declare any zone of the sea adjacent to the territorial sea to be “*the pollution prevention zone of Sri Lanka*”, while section 7(2)states “*The relevant Minister shall take such steps as may be necessary to control and prevent the pollution of, and to preserve the ecological balance within, such zone.*”

This wording was unusual for its time as references to such concepts were not found in the 1982 UN Convention nor had such concepts received at least the limited mandate that they did from UNCED.

Section 9 permits the President to declare historic waters, which have greater importance in Sri Lanka than in most countries.

Section 13 permits the Minister to make regulations “*for the purpose of giving effect to the provisions this law*”.

Like most of these laws, it lacks detail, but a clause such as section 13 could be utilized to promote environmental actions in the event that more specific laws were lacking. However, there is also a danger here in countries with a common law system in that the doctrine of *ultra vires* could be invoked against subordinate legislation which went too far beyond the subjects dealt with directly in the Act itself.

Fisheries and Aquatic Resources Act 1996

This Act needs to be seen alongside the Foreign Fishing Boats Act 1979. Both of these laws provide effective controls over fishing activities in the internal waters (including historic waters), the territorial sea and the exclusive economic zone of Sri Lanka.

The Fisheries and Aquatic Resources Act 1996 was prepared before the 1995 UN Fish Stocks Agreement, and, while it recognizes that high seas fishing needs to be controlled, it does not reflect the provisions of that Agreement to any great extent. Thus, while, it permits Sri Lankan vessels to be boarded on the high seas, it does not require a license for such fishing.

PART I ADMINISTRATION: Appointment of Director and other officers, Establishment of Fisheries and Aquatic Resources Advisory Council, Functions and responsibilities of the Council, Fisheries management and development plan.

PART II LICENSING OF FISHING OPERATIONS: Licensing of fishing operations, Application for a licence, Licenses shall not be transferable. Furnishing of particulars of licences, provisions of this part not to apply to foreign fishing boat, in Sri Lanka Waters

under the provisions of the Regulation of Foreign Fishing Boats Act, No. 59 of 1979. Part III deals with registration of fishing boats, for which a register shall be maintained by the Director. Provision is also made for the registration of instruments of mortgage.

PART IV deals with Protection of fish and aquatic resources. It contains provisions on the Prohibition against the use or possession of poisonous or explosive substances, Prohibited fishing gear and fishing methods, Catching and possession of prohibited fish, &c. Prohibition or regulation of export and import of fish, Fisheries Management areas, Fisheries Committees, Register of fishermen, Minister to declare closed or open season for fishing, Use of fishing boats for research or scientific purposes.

PART V deals with conservation/, it has provisions on Declaration of fisheries reserves, which in view of their relevance to the subject of the present study is quoted in full:

36. The Minister may, in consultation with the Minister in charge of the subject of Conservation of Wildlife, by Order published in the Gazette, declare any area of Sri Lanka Waters or any land adjacent thereto or both such waters and land to be a fisheries reserve, where he considers that special measures are necessary-

(a) to afford special protection to the aquatic resources in danger of extinction in such waters or land and to protect and preserve the natural breeding grounds and habitat of fish and aquatic resources with particular regard to coral growth and aquatic ecosystems;

(b) to promote regeneration of aquatic life in areas where such life has been depleted;

(c) to protect the aquatic medium;

(d) to promote scientific study and research in respect of such area; or

(e) to preserve and enhance the natural beauty of such area.

37. No person shall, except upon a permit obtained from the Director or any person authorized by the Director in that behalf in the prescribed form and on payment of the prescribed fee,-

(a) engage in any fishing operation in such reserve;

(b) mine, collect or otherwise gather or process coral, or any other aquatic resources, dredge, or extract sand or gravel, discharge or deposit waste or any

other polluting matter or in any other way disturb, interfere with or destroy, fish or other aquatic resources or their natural breeding grounds or habitat in such reserve; or

(c) construct or erect any building or other structure on or over any land or waters within such reserve.

PART VI deals with Aquaculture. It has provisions on Leasing of State lands, Licensing aquaculture enterprises, applications for a licence, form and duration of the licence, renewal, cancellation.

PART VII deals with the settlement of fishing disputes

PART VIII deals with authorized officers and their powers

PART IX deals with offences and penalties, including forfeiture and compounding of offences, release of detained persons and vessels.

Thus, apart from the fact that it does not address high seas fishing, the Act is very comprehensive, and provides a sound legal basis for dealing with fisheries and aquaculture.

Sri Lanka already has to deal with shared stocks due to its common boundary with India. This is reported on in the following terms in the national consultant's report:

STATUS OF SHARED STOCKS

In the northern part of Sri Lanka, the continental shelf is broad and the shallow Sri Lankan waters are connected with the Indian territorial waters. Fish species living in the Gulf of Mannar, Palk Bay and Pedro Bank areas may represent a single stock as their geological distributions are more or less the same, though they are separated by legal boundaries.

Many of the deep sea species groups such as deep sea prawns, deep sea lobsters, squids and cuttle fish, scads, jacks, and perches are highly valuable species groups shared (?) by many countries in the Bay of Bengal region.

Environmental laws

The National Environmental Act was enacted in 1980 (no 47), and amended in 1988 (no 56)

It is a very comprehensive Act containing many elements which could be used as a model by other countries.

Its purpose is stated in its preamble as being to “*establish a central environmental authority to make provision with respect to the powers, functions, and duties of that authority; and to make provision for the protection, management, and enhancement of the environment, for the regulation, enhancement of the environment, for the regulation, maintenance and control of the quality of the environment,; for the preventing, abatement and control of pollution and for matters connected therewith or incidental thereto.*”

It establishes in Part I the Central Environmental Authority and an Environmental Council.¹⁵

Part II (section 10) sets out the powers, functions and duties of the authority. In addition to administering the Act, it is given a very wide range of powers ranging from surveys and research, coordination of all regulatory activities concerning pollution, specifying standards and criteria for the protection of beneficial uses, regulating maintaining and controlling the volume, types constituents and effects of waste, prohibiting any unauthorized discharge, emission or deposit of litter waste, etc, prevention of the discharge of any untreated sewage, control of pollution of the atmosphere, control of noise pollution, and much more, including powers over local authorities to comply with and give effect to recommendations regarding environmental pollution.

Part IV Environmental Management is worth quoting in full:

15. The Authority in consultation with the Council shall, with the assistance of the Ministry of the Minister in charge of the subject of Lands, formulate and recommend to the Minister a land use scheme consistent with the following objects :-
(a) to provide a rational, orderly and efficient system of the acquisition, utilization and disposition of land and its resources in order to derive therefrom maximum benefits; and (b) to encourage the prudent use and conservation of land

¹⁵ There are very detailed provisions concerning the operation and structure of these two bodies set out in the Act itself.

resources in order to prevent an imbalance between the needs of the nation and such resources.

16. The Land Use Scheme formulated under section 15 may include—

- (a) a scientifically adequate land inventory and classification system;*
- (b) a determination of present land uses, the extent to which such land is utilized, under utilized or rendered idle or abandoned;*
- (c) a comprehensive and accurate determination of the adaptability of land for community development, agriculture, industry or commerce;*
- (d) identification of areas having important historic, cultural, or aesthetic value where uncontrolled development could result in irreparable damage;*
- (e) a method for exercising control by the Government over the use of land in areas where environment control is deemed necessary; and*
- (f) a policy for influencing the location of new areas for the resettlement of persons and the methods for assuring appropriate controls over the use of land in and around such areas.*

Natural Resources

17. The Authority in consultation with the Council shall recommend to the Minister the basic policy on the management and conservation of the country's natural resources in order to obtain the optimum benefits therefrom and to preserve the same for future generations and the general measures through which such policy may be carried out effectively.

Fisheries

18. The Authority in consultation with the Council shall, with the assistance of the Ministry of the Minister in charge of the subject of Fisheries, recommend to the Minister a system of rational exploitation of fisheries and aquatic resources within the territorial waters of Sri Lanka, or within its exclusive economic zone, or within its inland waters and shall encourage citizen participation therein to maintain and enhance the optimum and continuous productivity of such waters.

19. Measures for the rational exploitation of fisheries and other aquatic resources may include the regulation of the marketing of threatened species of fish or other aquatic life.

Wildlife

20. The Authority in consultation with the Council shall, with the assistance of the Ministry of the Minister in charge of the subject of Wildlife conservation, recommend to the Minister a system of rational exploitation and conservation of wildlife resources and shall encourage citizen participation in such activities.

Forestry

21. The Authority in consultation with the Council shall, with the assistance of the Ministry of the Minister in charge of the subject of Forestry, recommend to the Minister a system of—

- (a)(i) rational exploitation of forest resources,*
- (ii) regulation of the marketing of threatened forest resources,*
- (iii) conservation of threatened species of flora, and shall encourage citizen participation therewith to keep the country's forest resources at maximum productivity at all times;*

(b) promoting a continuing effort on reforestation, timber stand improvement, forest protection, land classification, forest occupancy management, industrial tree plantation, parks and wildlife management, multiple use forest, timber management and forest research.

Soil Conservation

22. The Authority in consultation with the Council shall, with the assistance of the Ministry of the Minister in charge of the subject of Soil Conservation, recommend soil conservation programmes including therein the identification and protection of critical watershed areas, encouragement of scientific farming technique, physical and biological means of soil conservation, and short term, and long term research and technology for effective soil conservation.

22. The Authority may undertake and promote continuing studies and research programmes on environmental management and shall from time to time, determine priority areas of environmental research.

Part IVA addresses environmental protection, and it introduces a strong licensing regime with regard to the discharge or deposit of waste. Thus *“no person shall discharge deposit or emit waste into the environment which will cause pollution except – (a) under the authority of a licence issued by the Authority; and (b) in accordance with such standards and other criteria as may be prescribed under this Act.”*

Part IVB introduces strong environmental quality standards for inland waters, with strong penalties imposed. Likewise there are strong provisions accompanied by penalties with respect to pollution of the atmosphere, and soil. There are also provisions dealing with discharging or spilling oil or mixtures containing oil into the inland waters of Sri Lanka.

Part IVC deals with approval of projects, which basically gives the government to prescribe certain projects as ones which require advance approval, and to submit to an initial environmental examination report.

Part V gives the Authority the power to obtain information from occupiers of premises to furnish information regarding any manufacturing, industrial, or trade process carried out on the premises.

Section 32 (Part V) gives the Minister a very wide regulation making power.

Finally, the Act (in section 33) contains some definitions, the most important of which are: air pollution, beneficial use, environment, noise pollution, pollutant, pollution, toxic chemical, and waste.

There is also the Coast Conservation (Amendment) Act, 1988, which, according to the national consultant's report for Sri Lanka

“Sri Lanka enacted a Coast Conservation Act in 1981. The Act established a coastal zone that extends from 02 km seaward to 300 m inland from the mean high water level. The coastal zone of the country comprises highly productive marine & coastal ecosystems such as coral reefs, seagrass, beds, lagoons and estuaries. Important ecosystems found along the coastal zone are given in Table 2.¹⁶”

Overall, Sri Lanka has one of the strongest environmental law regimes on its statute books of BOBLME countries.

Critical habitats

In the national consultant's report, attention is drawn to the effects of aquaculture activity on mangrove swamps.

Impact of aquaculture on coastal habitats

The mangroves are widely extracted for both subsistence and commercial purposes. Considerable areas of mangroves have been destroyed due to shrimp culture development in the North-Western belt over the last two decades. There has been a reduction of about 60% of mangroves since 1986 due to the

¹⁶ **Table 2: Important ecosystems found along the Coastal Zone**

Mangrove forests 8687 (ha)

Salt marshes 23819

Beaches 11800

Sand dunes 7606 t

Lagoons & estuaries 158017

Marshy wetlands 9754

Other water bodies 18839

transformation of large areas to other uses such as shrimp culture and other development activities in the coastal zone (Table 4). Destruction of mangrove habitats has led to reduced feeding, breeding and nursery habitats for commercially important coastal and marine finfish and shellfish, which in the long term have created adverse effects on the lagoon and coastal fisheries.

Sea grass beds on the west and north-western lagoons and estuarine systems of Sri Lanka are threatened by the release of large amounts of shrimp farm effluents.

The environment law referred above would provide a basis for controlling activities which might impact on these habitats.

Angell (p.31) reports on mangroves in the following terms:

Mangroves are not as extensive as in the continental states of the BOBLME region, but they are locally important as nursery grounds for commercial species wildlife, habitat and shoreline protection. Conversion to shrimp ponds has reduced mangrove forest considerably, particularly around Puttalam Lagoon, but almost half of the farms are illegal.¹⁷ Some homesteading encroachment has also occurred. Loss of access because of shrimp farm development has impacted the livelihoods of nearly 6000 households in the Puttalam District. Agricultural land has been lost in the northwestern province, amounting to around 640 ha, while almost half the communities around lagoons in the south have had to change their livelihoods because of degraded natural resources.²²

Some mangroves in the north and east have been damaged during the civil war, but mangroves found beyond the reach of shrimp farm developers are in good condition. NGO's were very active on the south coast encouraging opposition to shrimp farming. A Special Area Management Plan was implemented in Rekawa and although there were organizational and financial problems, the results were sufficiently encouraging to expand the program to other sites, some of which have mangroves. Other causes of mangrove degeneration include extraction of timber and firewood and for the brush pile fishery.

Kaly (p.105) reports on exceptionally high levels of pesticide usage, which could point to a problem with the applicable legal regime.

Land based pollution.

¹⁷ Sri Lanka National Report, BOBLME

Despite being an exceptionally strong environment law, it appears that it has not had a significant impact on the extent of land-based pollution In Sri Lanka

Kaly (p.47) reports:

Coastal waters in Sri Lanka are polluted due to release of untreated or partially treated solid wastes and effluents from industries, tourist resorts and aquaculture, sewage and agriculture (Joseph 2003). These pollutants are often released into rivers and from there find their way to the sea.

It will be apparent from the information provided by Kaly that there is a classic gap between the potential provided for by a strong legal regime and what can be achieved in reality. However, Sri Lanka does at least have the laws in place to respond as its capacity or its needs develop.

Overall summary: The legislative regime has some strong elements from an environmental perspective though there are some problems of overlap between certain bodies (see Kaly). However, the fisheries legislation, while adequate in terms of addressing local and foreign fishing within the EEZ, does not provide effectively for high seas fishing. There is a need to give effect to the 1995 UN Fish Stocks Agreement and the FAO Compliance Agreement. In doing so, the opportunity should be taken to introduce modern concepts such as the precautionary approach and ecosystem approaches to fisheries management. It would seem that such laws as exist regulating land based sources of pollution are either not adequate or are not well enforced, most probably the latter. Critical habitats are not protected in practice though there seem to exist sufficient controls under the environment law to do this more effectively if the political will were present to do so.

Thailand

Thailand is a constitutional monarchy, with its king as the Head of State. Supreme law making power is vested in the parliament. Its hierarchy of laws is as follows: the constitution is supreme, followed by Acts of parliament, followed by regulations and notifications enacted by the responsible ministry.

The Royal proclamation establishing the Exclusive Economic Zone of the Kingdom of Thailand of 23 February 1981 establishes the EEZ of Thailand as an area beyond and adjacent to the territorial sea extending for two hundred miles from the baselines from which the territorial sea is measured.

In this zone," *the Kingdom of Thailand has:*

(a) sovereign rights for the purpose of exploring and exploiting, conserving and managing the natural resources, whether living or non-living, of the seabed and subsoil and the superjacent waters, and with regard to other activities for the economic exploration and exploitation of the zone, such as the production of energy from the

water, currents and winds.

(b) jurisdiction with regard to:

(i) the establishment and use of artificial islands, installations and structures;

(ii) marine scientific research;

(iii) the preservation of the marine environment.

(c) other rights as may exist under international law.

3. In the exclusive economic zone, the freedoms of navigation and overflight and of the laying of submarine cables and pipelines shall be governed by international law.

It will be noted that the proclamation also refers only to rights, without also referring to duties, but on the other hand it does emphasize the economic rights in the zone. This proclamation does nothing more than proclaim the zone in international law, and needs legislative follow up in order to be fully effective.

The Fisheries Act 1947. Given the importance of the sector to Thailand, it is surprising that it has not introduced new legislation to update its fisheries laws, and which has for a long time recognized as being inadequate. It is not only that it is out of date as far as the EEZ is concerned, and with the changes introduced as a result of the 1982 UN Convention, but it is silent on the question of high seas fishing. Further, it does not address modern management concepts introduced with UNCED and the 1995 UN Fish Stocks Agreement.

The Fisheries Act 1947 has been summarized in the following terms by B Kuemlangan:¹⁸

The purpose of the main provisions of the Fisheries Act are summarized as follows:

- *The preliminary part - provides for the title of the Act, entry in force, laws that the Act repeals, definitions, identifies the authority who takes charge and control of the execution of the Act, and vests certain powers in that authority.*
- *Chapter 1 - provides for general basis for management, empowerment of persons, offices or agencies to manage fisheries (e.g. authorizations, setting terms and conditions for fishing).*
- *Chapter 2 - relates to control of cultivation ponds.*
- *Chapter 3 - specific controls for fishing including, registration, permits, conditions for use of fishing implements, exemptions from requirement of permits; liability in respect of boat persons on Thai boats used in violation of foreign states' laws, taxes, notifications, prohibitions, fishing seasons, inspections and appeals.*
- *Chapter 4 - governs monitoring requirements and procedures.*
- *Chapter 5 - reemphasizes that fishing shall be undertaken under licence, contains prohibitions relating to possession and introduction of specified aquatic animals, provides for monitoring and enforcement requirements of this Chapter. Enforcement powers include powers of arrest, entry and inspection, and seizure, removal or demolition of implements.*
- *Chapter 6 - creates offences and provides penalties for commission of offences.*¹⁹

In the national consultant's report on Thailand, the following is said:

Transboundary species

*It is reported that at least 10 commercially important fish stocks such as *Rastrelliger brachysoma*, *R. kanagurta*, *Scomberomorus commerson*, *Auxis thazard*, *Euthynnus affinis*, *Kastuwonus pelamis*, *Thunnus tonggol*, *Thunnus albacares* and *Loligo spp*, which are commonly exploited by several countries*

¹⁸ Kuemlangan, *Preliminary Review of the Fisheries Legal Framework of Thailand* (1999) FAO/Fish Code

¹⁹ Further very useful information on the Thai fisheries laws can be found in Final Report on Legal Advice to Thailand Mission (April, June, July, August, 2000) (FISHCODE GCP/INT/648/NOR-SUB-PROJECT C1) In that report, also are listed other laws having a relevance to fisheries. These are:

i) Act Governing the Right to Fish in Thai Waters, 1939, ii) Wild Animal Preservation and Protection Act, 1992 iii) National Park Act, 1961 iv) Thai Vessels Act, 1939 v) Fish Marketing Act, 1953 vi) Navigation in Thai Waters Act, 1913 vii) Enhancement and Conservation of National Environmental Quality Act, 1992.

along the Andaman Coast, frequent inshore and coastal water of more than one country or straddle the exclusive economic zones thereof. Knowledge of their biology, bionomics and migratory behavior and transboundary movements is fragmentary; likewise, the data on the state of exploitation of these transboundary resources are limited. In the case of R. brachysoma, BOBP (1987) reported the migration pattern in the Malacca Strait (Figure 6). They reported that the Indo-Pacific mackerel stock was divided in 3 stocks, i.e., the first was distributed in the eastern end of Sumatra Island in Indonesia through the south-west of Penang, Malaysia, the second was distributed between Myanmar-Thailand boundary waters and the third has distribution in Phang-nga Bay through the north of Penang Island.

The information contained here underlines the need for a thorough refashioning of the fisheries law of Thailand. This is necessary because the existing legislation is very much out of date, predating even the introduction of the EEZ regime, but also because it needs to bring in modern management concepts such as the objective of long term sustainable use, the precautionary approach to fisheries management, and the need for an ecosystem approach to fisheries.

The Wild Animal Reservation and Protection Act 1992 is used to protect animals designated as “Protected Wild Animals” or “Reserved Wild Animals” and to implement the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES).²⁰ Wild animals are defined as including aquatic animals, which obviously brings fisheries resources (fauna only) under the control measures stipulated under the Act. The Act empowers jointly, the Director Generals of the Royal Forest Department and Department of Fisheries to implement certain provisions of the Act but it implicitly gives the power to implement the provisions of the Act to the Director General of Department of Fisheries where aquatic animals are involved.²¹

National parks are designated and managed under the National Park Act B.E. 2504 (1961). Land can be designated as National Park by Royal Decree.²²

²⁰ Wild Animal Reservation and Protection Act, Section 24.

²¹ This information is derived from Kuemlangan, Preliminary Review of the Fisheries Legal framework of Thailand 1999 (FAO/Fishcode)

²² Kuemlangan

The National Park Committee is established under the Act²³ to advise the Minister on the determination of land to designate as a national park, the protection and maintenance of national parks, and such other matters that the Minister consults the Committee on.²⁴

Marine areas have been designated as National Parks under the Act. These areas include areas that have been fished or are being fished, albeit illegally, and which would otherwise be managed under the Fisheries Act 1947. Fisheries officers are designated as National Park Officers (competent officials) under the Act to also manage marine national parks. The Department of Fisheries is represented on the National Park Committee.²⁵

It is doubted whether the National Park Act was intended to create national parks in marine areas as the Act is designed for, and appears more relevant to, the creation of national parks on land. For example, “land” is defined as “surface of land in general and includes mountain, creek, swamp, canal, marsh, basin, water way, lake, island and seashore”²⁶ and the list does not include marine areas.²⁷

Enhancement and Conservation of National Environmental Quality Act 1992

The following summary is provided by APCEL Alan Tan Faculty of law University of Singapore

The main framework environmental legislation is the Enhancement and Conservation of the Natural Environmental Quality Act of 1992 (hereinafter "EQA). The EQA is a substantive piece of legislation which contains several

²³ Section 9

²⁴ *ibid* Section 15.

²⁵ Kuemlangan

²⁶ National Park Act, Section 4

²⁷ Kuemlangan

progressive provisions designed to enhance the protection of the environment. The interesting features of the EQA include:

- *the provision of the right of individuals to information, compensation and redress against violators, and the duty of individuals to assist and cooperate in enhancing and protecting the environment;*
- *a recognition of the role and standing of environmental NGOs;*
- *the provision for the Prime Minister or the delegated provincial governor to deal with emergencies or public danger arising from natural disasters or environmental pollution;*
- *the creation of a high-level multi-representational National Environmental Board (NEB) to oversee the coordinated response of ministries inter se and between central and provincial authorities;*
- *the establishment of an Environmental Fund from which resources will be drawn to combat environmental incidents and to enhance environmental protection efforts like research and training, disbursements of loans and grants, education, NGO funding etc.;*
- *the formulation of a National Environmental Management Plan and the subsequent duties of government agencies to implement the Plan and of provinces to draw up corresponding Changwat Action Plans, if required;*
- *the provision for the NEB to declare Pollution Control Areas (PCAs) in localities where particularly serious pollution concerns have arisen - contingent upon the declaration of a PCA, special measures may be taken to redress the problem in the area concerned, and a duty is henceforth imposed upon the provincial governor to draw up a Changwat Action Plan to redress the situation;*
- *the provision for the declaration of Conservation and Environmentally Protected Areas in environmentally-fragile areas where special measures can be taken to protect sensitive natural ecosystems and wherein a Changwat Action Plan would have to be formulated by the provincial governor to address the concerns;*
- *the provision for the NEB (instructing the MOSTE) to assume jurisdictional competence over changwats (provinces) where the provincial authorities demonstrate an unwillingness or incapacity to deal with a particular incident or to come up with suitable provincial plans;*
- *the prescription of a fairly-detailed environmental impact assessment (EIA) process which incorporates public participation and views of experts in decision-making;*

- *the establishment of a multi-agency Pollution Control Committee to oversee pollution control matters, including the enactment of discharge standards;*
- *the regulation of air, noise, water and hazardous waste pollution, as well as other forms of pollution;*
- *the duty to use central waste treatment facilities, the expense for which is borne by the user (pursuant to the "polluter pays" principle);*
- *the prescription of various civil, criminal and administrative remedies for environmental violations.*

The Law as it stands is quite comprehensive. The main problem, however, appears to be in its implementation.

Critical habitats

Angell (p.45) has reported that there are measures afoot under the Ninth National Economic and Social Development Plan which will improve the coastal environment:

Sustainable use of coastal resources and environmental protection are embodied in action plans formulated under the Ninth National Economic and Social Development Plan.²⁸ The action plans will considerably improve the coastal environment if they can be implemented as planned. In summary, the ways in which the objectives of the Plan are to be achieved are:

1. Protect conservation zones by promoting sustainable utilization:

- *Complete zoning of mangrove areas,*
- *Set up a mechanism for mangrove forest management to reduce conflicts between government and local people,*
- *Local participation in reforestation programs,*
- *Declare marine protected areas and fisher resources conservation area as well as establish fishing zones and management for small scale fisheries.*

2. Rehabilitate coastal resources through:

- *establishing a Sea Rehabilitation Plan covering conservation, rehabilitation and utilization of coastal and marine resources, tourism and small scale fisheries,*
- *Eliminate the use of destructive fishing gear,*
- *Establish coastal zones to protect coral reefs, sea grass beds and seaweeds,*
- *Restore erosion damaged beaches,*

²⁸ Thailand National Report, BOBLME

- *Provide waste disposal and treatment facilities along the coast.*

Once again, there are steps underway to protect certain critical habitats. The problem appears to have more to do with effective implementation.

Land-based sources of pollution

Kaly reports mixed conclusions on the extent of land based pollution, though the risks of environmental damage are ever present. However, the Environmental Quality Act should provide at least an adequate legal basis for dealing with land-based pollution – provided that the administrative capacity is present to take advantage of it.

Tan lists the laws set out below as laws having a relevance to the environment. It will be apparent that many of these could play a part in dealing with land-based pollution.

APPENDIX
SELECTION OF MAJOR ENVIRONMENTAL LAWS
Framework Laws

- Enhancement and Conservation of the National Environmental Quality Act 1992
- Notification of MOSTE on Types and Sizes of Projects or Activities of Government Agencies, State Enterprises or Private Persons Required to Prepare an Environmental Impact Assessment Report 1992 (24 August 1992)

Pollution Control

- Factories Act 1992
- Notification of the Ministry of Industry Concerning Factory Wastes 1988
- Public Health Act 1992
- Cleanliness and Orderliness of the Country Act 1992
- Hazardous Substances Act 1992
- Notification of Ministry of Industry Concerning Storage and Disposal of Toxic Substances 1982
- Poisonous Substances Act 1967, amended in 1973
- Notification of Ministry of Industry Concerning Industrial Effluent Standards 1982
- Notification of Ministry of Industry concerning manufacture and use of toxic substances 1982

Energy

- Energy Conservation Promotion Act 1992
- Notification Concerning Duty Reduction on Energy Efficiency and Environmental Technology 1988

Conservation of Natural Resources

- Wildlife Conservation and Protection Act 1992
- Conservation of Wild Elephants Act 1921 (second issue 1960)
- Forestry Act 1947, amended in 1989
- Forest Plantation Act 1992
- Forest Reserve Act 1964
- National Park Act 1961

Fisheries

- Fishery Act 1945, amended in 1985

Mining

- Mineral Act 1967
- Petroleum Act Nos. 1 - 5 (1971, 1973, 1979, 1989, 1991)

Land Use and Planning

- Construction Building Control Act 1979
- City Planning Act 1975
- Land Reform for Agriculture Act 1975
- Investment Promotion Act 1977
- Industrial Estate Authority of Thailand Act (No. 3) 1996

Water Resources and Marine Environment

- Groundwater Act 1977
- Groundwater Act (No. 2) 1992
- Navigation in Thai Waterways Act 1913
- Prevention of Ships Collision Act 1979
- Regulations on Prevention and Combating of Oil Pollution

Cultural/Natural Heritage

- Archaeological Sites, Antiques, Art Objects and National Museum Act 1961

Traditional ownership and customary use systems

The Thai Constitution, as revised in 1997 contains some provisions which have a bearing on traditional rights. These are explained in the following terms:

Section 56 of the 1997 Thai Constitution provides the right of a person and communities to participate in the preservation and exploitation of natural resources. Persons part of "a traditional community" have the explicit right to participate "in the management, maintenance, preservation, and exploitation of natural resources and the environment" as provided by law (Section 46). Participatory rights in governmental decision-making are also provided in Section 60 and Section 56, paragraph two. Tied to the rights of the Thai people are the duties on the Thai people (chapter IV). The duties include obeying the law (Section 67) and to conserve and protect natural resources and the environment (Section 69).

The two clear messages from the 1997 Constitution that relate to fisheries are: i) public participation is to be promoted, and ii) natural resources and the environment are to be conserved and protected.²⁹

Overall conclusion on Thailand. What is interesting about this legal regime is that, despite the fact that fisheries in Thailand is of considerable economic and cultural significance, the legal regime barely acknowledges the EEZ regime. No doubt, this is in part influenced by the fact that much of the waters around Thailand overlap with the zones of other countries. The fisheries law is completely out of date and needs to be revised to give effect to the EEZ regime as well as enabling Thailand to control the actions of fishers on the high seas. It should also include modern management objectives such as long term sustainable use, precautionary approaches to fisheries management, and ecosystem considerations. It should also give effect to the 1993 FAO Compliance Agreement and the 1995 UN Fish Stocks Agreement which would enable Thailand to participate more effectively in regional fisheries bodies.

The basic environmental law is very detailed, and if effectively implemented, could provide a basis for the control of land-based pollution. It also provides a basis for protecting critical habitats, though in this respect, the results are mixed.

One major problem is that, in Thailand, the bureaucracy is very sectoral in its approach, possibly more so than in most other countries of BOBLME. This makes a multisectoral cross cutting approach, difficult enough in its own right, especially difficult to implement.

Overall assessment of the legislative regime in BOBLME countries:

²⁹ Final Report on Legal Advice to Thailand Mission (April, June, July, August, 2000) (FISHCODE GCP/INT/648/NOR-SUB-PROJECT C1)

The pattern throughout the countries of the BOBLME region as regards legislation is remarkably similar.

All countries have enacted basic EEZ type laws to give effect to the EEZ concept, broadly along the lines of the 1982 UN Convention. However, for some, these laws are merely proclamatory of the right of the State in question to the resources of the Zone. In such States, it is necessary to go beyond these basic laws and look at the specific laws governing fisheries, or marine pollution. For others, however, these laws provide a rudimentary rule or regulation making power which might be the only basis on which they can take action over certain activities, especially non fisheries activities.

Apart from Malaysia, which has legislation in its final stages, there is no country which has so far addressed controlling fishing on the high seas. However, it can be expected that several of the countries do have vessels or fleets operating in such areas.

In some countries, there exist general environmental laws, however, the scope of some of these laws is uncertain, and it is not always clear if they extend to the EEZ. On the other hand, such laws do provide a basis for the coordination of actions by relevant agencies to address environmental matters. In addition, while most countries will have some legislation that is capable of addressing the problem of land based pollution, no country appears to have a systematic legal regime for controlling such a source of pollution. On the other hand, the environmental laws would provide the best means available to bring about controls in this area. More information on the existing laws applicable to land-based pollution is needed.

Very little in the way of direct evidence of traditional ownership and customary use systems could be found, though it would be realistic to expect that, especially in remote places, customary uses would prevail. More information is needed on this.

Critical habitats were at least capable of some, if not complete, protection under the laws of most countries, even if not under a law that referred to such an entity. For

many, the basic fisheries law or a national parks or environmental law could provide the basis for exercising necessary control.

However, the evidence of laws dealing directly with such matters is limited and patchwork at best. In this regard, BOBLME countries do not differ significantly from other countries and regions.

Thus, from the point of view of utilizing national legislation in order to bring about a sustainable regime for the management of the BOBLME, one that facilitated the introduction of ecosystem considerations, we find a patchwork of laws that, when put together, do not add up to a composite whole.

Looked at from another point of view, we find that the laws reflect the various sectors set out in the 1982 UN Convention. This is only to be expected, but it does make it very difficult looked at from the view point of national law alone for a country to adopt effective measures to deal with a geographical phenomenon such as an LME.

Terms of reference:

Identification of shared and trans-boundary issues relating to the management and enforcement of legislation on these three priority topics in the BOBLME region, and in particular those issues for which the existing legal and institutional framework does not permit or enable the implementation and enforcement of legislation relating to the three priority topics (hereinafter referred to as “these issues”);

It is useful to explain what one means by phrases such as shared and straddling stocks, as there is no uniform accepted usage. Sometimes the more general phrase “transboundary stocks” is used. Here, it is intended to utilize the distinction implicit in arts 63.1 and 63.2, where 63.1 refers to so called shared stocks, while 63.2 addresses straddling stocks. Highly migratory species are addressed in art 64. The only other category to mention (leaving aside marine mammals, anadromous stocks and

catadromous species for the moment) are the so called “discrete high seas stocks”, which is a relatively new term that is intended to refer to high seas stocks that are neither straddling nor shared, and are not highly migratory.

It is not proposed to assess the regional and sub regional institutions which could provide the basis for more effective cooperation as this is already covered in the Preston paper and will be specifically addressed in the Lugten paper.

Preston (p 18) has stated that “70 to 75% of the BOBLME lies within the EEZ’ of BOBLME countries, with the remainder being high seas area outside of any national jurisdiction.”

Preston (p.41) has also pointed out that the fisheries statistics are still very imprecise (p 39), and concludes “*The imprecise nature of the statistics introduces considerable uncertainty into any conclusions that may be drawn from them.*”

Preston (p.41) has identified the following possibilities for shared and straddling stocks:

Many of the stocks on which the BOB’s fisheries are based traverse the international boundaries of adjacent, and sometimes non-adjacent, countries. Large pelagic species such as tunas and billfishes may move over large ocean ranges and pass through the EEZs of many countries. Smaller pelagic species such as anchovies, herrings and shads are not individually mobile on such a large scale, but may still migrate through the coastal waters of two or more adjacent countries. Even resources which appear to be sessile or only locally mobile, such as reef fish, lobsters, and sea cucumbers, may have patterns of larval dispersal that give their distribution an international dimension. Fisheries based on these stocks in one country may be replenished by recruitment that originates in another country where fishing is lighter. Conversely, and far more likely in the BOB region, intensive fisheries in several countries that all target the same stock have the potential to cause rapid over fishing and stock decline or collapse.

1. A good example of such a case is the fishery for shad, which occurs throughout the BOB region. Five species of tropical shads (Clupeidae: Tenuulosa species) (known locally as Terubuk in Indonesia, Terubok in Malaysia, Hilsa in the Indian sub-continent and Pha Mak Pang in Thailand) live in the estuaries and coastal waters of the BOB region. The most widespread and well-studied species is Tenuulosa ilisha, which is found in all BOB countries except Maldives, and is the basis of important fisheries throughout its range. The closely related T. reevesi occurs intermittently along the South China coast and far up the Yangtze, Pearl

and Qiantang rivers. Once widespread, *Tenualosa toli* is now abundant common only in the estuaries and adjacent coastal areas of Sarawak. *T. Thibaudeaui* only lives in the lower and middle Mekong system and is believed to be close to extinction, and *T. macrura* lives in the coastal waters of Sumatra and Borneo. (Blaber, Brewer et al. 2001).

At p 42 he says:

There are numerous other examples where fisheries of several BOB countries target what are thought to be the same stocks, and where joint research and management action could provide multi-country benefits. The table below lists other fisheries that may fall into this category. Most of these shared stocks are from the group of small pelagics whose abundance usually depicts strong interannual fluctuations and is subject to climatic changes. The high variability in both stock abundance and migratory behaviour poses a particular challenge in their collaborative management. There is, however, little doubt from experiences elsewhere that in the absence of joint management, small pelagic species can be fished down to low and possibly unsustainable levels (Martusubroto 2002). At present, however, there are no clear institutional mechanisms through which such joint management could occur.

Highly migratory tuna and tuna-like species are of particular importance for the fisheries in Sri Lanka and the Maldives, and to a lesser extent in India, Indonesia, Malaysia and Thailand. North of the equator, the main concentrations of these species occur in the Western Indian Ocean. In the Eastern Indian Ocean, the concentrations are more in the southern areas and outside the Bay of Bengal LME. The extent of migration of these species is such that management needs to be approached on an ocean-wide basis. This is the function of the IOTC, but at present the Commission only counts four BOB countries (India, Malaysia, Thailand and Sri Lanka) as members.

2. At p.139, Preston lists the following as possibly being subject joint management arrangements.

There is thus a strong argument for the establishment of joint management arrangements for a number of stocks, resources or fisheries. Candidate fisheries include (but are not necessarily limited to) the following:

- *hilsa*
- *bottom trawl fisheries in adjacent countries*
- *oil sardine*
- *short mackerel*
- *Indian mackerel*
- *demersal reef fisheries in neighbouring countries*
- *penaeid prawns*

There is no need to labour the obvious point that emerges from this, namely that there are sufficient opportunities for cooperation between the countries of BOBLME with respect to the marine living resources of the Bay of Bengal. However, as regards fisheries, while there exist a number of regional fisheries bodies, cooperation in order to promote the objectives of an ecosystem approach will be difficult for the following reasons:

First, not all countries are parties to the 1995 UN Fish Stocks Agreement (Only India, Maldives, and Sri Lanka are currently Parties). This would mean that there would be no obligation for those states not members to accept decisions of such bodies (though NB art 8, which attempts to give members of organizations a certain advantage in gaining access. However, there will remain a problem with this for some time in light of the *pacta tertiis* point – namely that treaties can only bind those States which are parties to it. It will probably take a decision of ITLOS or the ICJ to sort this one out, as academic writing and state practice is not united on this issue).

Secondly, as has already been explained above, the various legislative regimes of the individual countries will not provide a comprehensive basis for taking the necessary action to address marine ecosystem issues.

Thirdly, even if all of the legislative regimes were in a perfect state and the level of enforcement was effective in all areas, the present state of international law would not facilitate the countries in effectively establishing an LME. This is because the present state of international law does not permit effective action on the high seas areas, except in certain limited aspects.

Even within EEZs, there are limitations on what a State can do with respect to freedom of navigation. This would point toward the need to examine the prospects for a cooperative approach which drew on the so called soft law instruments, or which drew

on the progress made in the fora which negotiated these soft law instruments in order to fashion an instrument for the region, or which focused efforts on making existing instruments, both soft and hard, more effective. There is a view that there are already too many instruments which have not been given full effect to, and what is needed is a greater focus on making these instruments more effective rather than merely creating new instruments unless there is a good reason to do so.

The zonal approach of the 1982 UN Convention is also a problem, despite the recognition in the preamble that *“the problems of ocean space are closely interrelated and need to be considered as a whole”*.

Also, it is important here to distinguish between so called “soft” and “hard” law. There are numerous soft law instruments which promote ecosystem approaches, either generally or specifically such as UNCED, Code of Conduct for Responsible Fisheries, IPOA-IUU, the Washington Declaration on Protection of the Marine Environment from Land-based Activities, Reykjavik Declaration on the Ecosystem, and WSSD.

It is, however, very important to get the balance right between these soft instruments and the binding (hard) instruments, such as treaties. These soft law instruments are playing an important role in filling the gaps left by 1982 UN Convention, and the 1995 UN Fish Stocks Agreement, and by promoting a more holistic approach to marine affairs. To discuss this without reference to the important progress made in these soft law instruments is very misleading. However, to go the next step and to treat them as if they are quasi-binding in character can also lead to a distortion of judgement - and disappointment.

Terms of reference.

Analysis of the root causes as to why the existing legal and institutional framework does not adequately permit or enable the implementation and enforcement of legislation relating to the three priority topics;

This has partly been covered in the previous part.

However, the root causes could be summed up in two sentences: First, the zonal approach set out by the 1982 UN Convention will of necessity be a root cause as to why the adoption of an ecosystem approach will always be difficult, especially when it comes to high seas areas, or to managing instances of overlapping jurisdiction.

The second root cause is the inability of many of the coastal countries to take effective action even where there is in place well drafted legislation to control, for example, land based pollution. This however, is a problem which is not confined to the region. Thus, in an important instance where the 1982 UN Convention departs from a strict zonal approach – namely with respect to land based sources of pollution, it has proved very difficult to get States to agree on solutions in a binding context.

Thus, despite all the progress being made in the area of soft law instruments, this will not mean much if states do not at least utilize their existing legislative powers. While new, more comprehensive powers may well be necessary, this should not hide the need for more to be done now on the basis of what already exists.

Terms of reference

Prioritization of these issues in order of regional severity;

The most pressing priority is for the need to generate political will to apply existing laws and instruments. Most countries have at least basic legislation in place which could be used to bring about a more effective control of marine spaces.

Following that is the need for the preparation of more comprehensive environmental laws which can embrace the elusive issue of land based pollution, and can provide the basis for administrations to introduce ecosystem considerations.

Related to this is the need for comprehensive laws that permit a multisectoral approach to the extent that it is possible within existing international law. Most probably this

would have to be principally in the nature of a coordinating law. This could be achieved in some countries by amending the basic environmental law to ensure that it provides effectively for marine areas if it does not already do so. Such a law should ensure that ecosystem wide perspectives are given prominence in such a law, and in its implementation. This can in part be achieved by stating the importance of that and related objectives such as the precautionary approach and long term sustainable use in a clause which states clearly that the objective of the new legislation is to bring in such a perspective.³⁰

Terms of reference

Description of any knowledge gaps, policy distortions, legal and institutional deficiencies that impede the development of solutions to these issues;

Again these are to an extent implicit in the above discussions.

Terms of reference

- *Suggested actions that should be taken to eliminate such gaps, distortions and deficiencies;*

From a legal point of view, there is a continuing need for legal assistance in the preparation of up to date legislation in the areas under consideration. For example, in the area of fisheries, legislation should be introduced to give effect to the 1995 United Nations Fish Stocks Agreement and the 1993 FAO Compliance Agreement, in order that more effective action can be taken with other states in regard to highly migratory fish stocks and straddling fish stocks. Such laws should incorporate new concepts found there on the precautionary approach and the need to bring in ecosystem considerations.

³⁰ For a discussion of this, see Edeson, Freestone and Gudmundsdottir *Legislating for Sustainable Fisheries: A Guide to the Implementation of the 1993 FAO Compliance Agreement and the 1995 UN fish Stocks Agreement*. World Bank Law Justice and Development Series 2001 p.25 et seq.

However, this in itself is not a complete solution.

There should be consideration given to greater use of port state controls in the region as a means of controlling vessel sourced pollution as well as bringing about greater control over fishing.

Terms of reference

- *Priorities, in terms of regional need, for comprehensive, cross-sectoral ecosystem-based actions that integrate ecological and development considerations in response to these issues, including suggestions for sectoral interventions and for the national/regional legal and institutional mechanisms necessary for them to take place;*

At the regional level, the top priority probably should be to utilize an existing forum to which all BOBLME countries can belong and in which other nations with an involvement in the area can participate in order that an integrated approach can be adopted to LME issues. This has already been discussed in the Preston paper and in the Lugten paper.

The greatest single sectoral intervention is likely to be in respect of land based sources of pollution. However, this also creates the greatest problem in terms of coordination as many countries are very wary of permitting others to have control or influence over matters which they consider to be essentially domestic in character. This has traditionally been the greatest constraint in dealing with land based pollution. Thus, the mechanism most likely to be effective is one that is voluntary in character, and which can bring together a wide range of persons and capacities.

Terms of reference

Ways to assist the countries in the BOBLME region to better understand these issues and to work collaboratively to address them;

There will be a need for more legal training of persons working in these areas in order to enhance their capacities in preparing and implementing the legislation, (though obviously, this is not to suggest that the need is only in the legal area).

There could also be advantage in considering workshops that identify a particular solution and which work toward the preparation of a first draft of a new regime, whether treaty, voluntary instrument, or even the preparation of draft legislation that contains the essential elements of a law to deal with ecosystem issues. Such workshops of necessity need to be cross cutting, addressing environment, fisheries, critical habitats, land based pollution and vessel sourced pollution.

There may be an advantage in having workshops on law enforcement and in the bringing of prosecutions for environmental offences as these will of necessity raise some complicated specialist issues.

In sum, there is a need for greater capacity building across the marine and environmental sector.

Terms of reference

- *Suggestions for location of proposed activities to address these issues in two types of areas:*
 - *where maximum demonstration/replication value can be achieved if it is an innovative activity where the human need is the greatest.*

This will no doubt be addressed at greater depth in the Lugten paper. It would be reasonable to assume that there are in any event needs at the local level where there would be a dearth of persons with training in what might loosely be described as ecosystem perspectives. This could call for “training the trainers”.