

# MARINE ENVIRONMENT: LEGISLATIVE POLICY AND JUDICIAL RESPONSE

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## I. INTRODUCTION

Since the dawn of culture and civilization, man has tried to excel itself by conquering nature. He has done so for his protection, promotion, development or for the sake of enjoyment. For the fulfillment of his selfish interest, he has affected his surrounding environment very badly. It is generally considered that economic stability provides the basis for progress and development in other spheres of life. Economic development is attained through increase in agricultural and industrial productions. In this process, man causes disturbance in the biosphere, affects its composition without having regard to its replenishment. Consequently, the constitution of environment is badly affected. In the name of progress and development, man has done much damage to forests, wildlife, land surface, water resources and to atmosphere. Man has polluted marine environment too. It is significant to protect, preserve and conserve biosphere. Equally important is the protection, preservation and conservation of marine ecosystem. There is yet little knowledge about this ecosystem. However, it is in no way less significant.

Pollution of the world's oceans is quickly becoming a major problem on Earth. Marine pollution includes a range of threats including from land-based sources, oil spills, untreated sewage, heavy siltation, eutrophication (nutrient enrichment), invasive species, persistent organic pollutants (POP's), heavy metals from mine tailings and other sources, acidification, radioactive substances, marine litter, overfishing and destruction of coastal and marine habitats.

## II. THE UNITED NATIONS CONFERENCE ON THE HUMAN ENVIRONMENT, 1972

Marine pollution was a concern during several United Nations Conferences on the Law of the Sea beginning in the 1950s. In the late

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1950s and early 1960s, there were several controversies about dumping radioactive waste off the coasts of the United States by companies licensed by the Atomic Energy Commission, into the Irish Sea from the British reprocessing facility at Windscale, and into the Mediterranean Sea by the French Commissariat a l'Energie Atomique. After the Mediterranean Sea controversy, for example, Jacques Cousteau became a worldwide figure in the campaign to stop marine pollution. Marine pollution made further international headlines after the 1967 crash of the oil tanker Torrey Canyon, and after the 1969 Santa Barbara oil spill off the coast of California. Marine pollution was a major area of discussion during the 1972 United Nations Conference on the Human Environment, held in Stockholm. That year also saw the signing of the Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter, called the London Convention. The London Convention did not ban marine pollution, but it established black and gray lists for substances to be banned or regulated by national authorities. The London Convention applied only to waste dumped from ships, and thus did nothing to regulate waste discharged as liquids from pipelines.

To protect and promote environment at international level, a declaration was adopted in 1972. The Declaration adopted by the United Nations Conference on the Human Environment took place at Stockholm from 5th to 16th of June, 1972<sup>1</sup>.

The proclamation contained certain common convictions of the participant nations and made certain recommendations on development and environment. The common convictions stated include the conviction that the discharge of toxic substances or of other substances and the release of heat in such quantities or concentrations as to exceed the capacity of environment to render them harmless must be halted in order to ensure that serious or irreversible damage is not inflicted upon eco systems. It also directs the States to take all possible steps to prevent pollution of the seas so that hazards to human health, harm to living resources and marine life, damage to the amenities or interference with other legitimate uses of seas is avoided.<sup>2</sup>

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<sup>1</sup> In this Proclamation, the Indian delegation led by the then Prime Minister of India, Mrs. Indira Gandhi took a leading role.

<sup>2</sup> Principle 7 of the Declaration.

### III. PROVISIONS UNDER THE INTERNATIONAL CONVENTIONS ON THE LAW OF SEA

The International law and International Conventions have made elaborate provisions for protection and preservation of the marine environment.<sup>3</sup> The Convention on the High Seas, 1958 has made provisions with the object of prevention of pollution of the seas.<sup>4</sup>

Article 24 directs every State to draw up regulations to prevent pollution of the seas by the discharge of oil from ships or pipelines or resulting from the exploitation and exploration of the seabed and its subsoil, taking into account of existing treaty provisions on the subject.

Further, Article 1 of Convention on the Fishing and Conservation of the Living Resources of the High Seas, 1958 declared that all States had the duty to adopt, or cooperate with other States in adopting such measures as may be necessary for the conservation of the living resources of the High Seas.

The International Convention relating to Intervention on the High Seas in cases of Oil Pollution Casualties, signed in 1969 and in force as of June 1975, provides that the parties to the Convention may take such measures on the High Seas as may be necessary to prevent, mitigate or eliminate grave and imminent danger to their coastline or related interests from pollution or threat of pollution of the sea by oil, following upon a maritime casualty or acts related to such a casualty, which may reasonably be expected to result in major harmful consequences.

It may be stated that the "existing treaty provisions" in Article 24 of the High Seas Convention, 1958 and "generally accepted international standards" in Article 211 (2) of the International Convention on the Law of Sea, 1982 have reference to international conventions to prevent pollution from oil spillage in the sea and other source of pollution of the sea.

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<sup>3</sup> See, J. Barros and D.M. Johnston, *THE INTERNATIONAL LAW OF POLLUTION* (Macmillan, London, 1974) 299-293; D.M. Johnston (ed.), *THE ENVIRONMENT LAW OF THE SEA* (1981); J. W. Kindt, *MARINE POLLUTION AND THE LAW OF THE SEA* (1986); R. Soni, *CONTROL OF MARINE POLLUTION IN INTERNATIONAL LAW* (1985); R..A. Malviya, *ENVIRONMENT POLLUTION AND ITS CONTROL UNDER INTERNATIONAL LAW* (Chugh Publications, Allahabad, 1987).

<sup>4</sup> Convention on the High Seas, 1958, Articles 24 and 25.

This has obviously a reference to the International Convention for the Prevention of Pollution of the Sea by Oil, 1954, and two other conventions adopted at Brussels after the massive oil spillage from Liberian Tanker *Torry Canyon* in 1967, to deal with oil pollution casualties of *Torry Canyon* genre: the International Convention relating to Intervention on the High Seas in cases of Oil Pollution Casualties and the International Convention on Civil Liability for Oil Pollution Damage. The Intervention Convention was of limited scope, giving certain rights to State parties to take certain defensive measures against pollution or threatened pollution only by oil. The Liability Convention applied to pollutants and hazardous or injurious products other than oil, which may cause injury and harm to humans and marine resources, damage to amenities and interference with the use of the sea. It was subsequently supplemented by a Protocol relating to Intervention on the High Seas in Cases of Marine Pollution by Substances other than Oil, 1973.

Further, there are certain significant multilateral conventions on marine environment, viz,

- (i) Oslo Convention for the Prevention of Marine Pollution by Dumping from Ships and Aircraft, 1972, confined to North Sea and North East Atlantic;
- (ii) London Convention on the Prevention of Marine pollution by Dumping of Wastes and other Matter, 1972;<sup>5</sup>
- (iii) International Convention for the Prevention of Pollution from ships, 1973;
- (iv) Paris Convention for the Prevention of Pollution from Land-based Sources, 1974 (related to Pollution of the sea from rivers, etc.);<sup>6</sup>
- (v) The Convention for the protection of the Mediterranean Sea against Pollution, 1976.<sup>7</sup>

In 1978 *Amoco Cadiz*, a Liberian registered tanker owned by a United States company was wrecked on the Brittany coast. It had lost most of its 230,000 tons of cargo of crude oil. It made significant impact on the codification of provisions on marine pollution in the International Convention on the Law of Sea, 1982.<sup>8</sup>

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<sup>5</sup> 11 ILM 1291 (1972).

<sup>6</sup> 13 ILM 352 (1974).

<sup>7</sup> 15 ILM 290 (1976).

<sup>8</sup> S.K. Verma, AN INTRODUCTION TO PUBLIC INTERNATIONAL LAW ( New, Delhi, 1998) 328-329.

The U.N. Convention on the Law of Sea, 1982 has made elaborate provisions in Part XII on the protection and preservation of the marine environment. It is one of the longest parts in the Convention, having Articles 192-237. It lays down generally agreed provisions on this aspect. The Convention expressly states that the "States have the obligation to protect and preserve the marine environment" while pursuing their sovereign right to exploit their natural resources.<sup>9</sup> It is an obligation of the States to prevent, reduce, and control pollution of marine environment individually and jointly at a global, and, as appropriate, on regional levels.<sup>10</sup>

Article 195 provides that in taking measures to prevent, reduce and control pollution of the marine environment, States shall act so as not to transfer, directly or indirectly, damage or hazards from one area to another or transform one type of pollution into another. Article 196 deals with marine pollution resulting from the use of technologies or introduction of alien or new species to a particular part of the marine environment, which may cause significant and harmful changes.

Article 197 direct the States to cooperate on a global and regional basis, directly or through competent international organizations, in formulating and elaborating international rules, standards and recommended practices and procedures consistent with this Convention, for the protection and preservation of the marine environment, taking into account characteristic regional features. Article 202 provides for scientific, educational and technical assistance to developing States for prevention, reduction and control of marine pollution.

Article 203 says that developing States shall, for the purposes of prevention, reduction and control of pollution of the marine environment or minimization of its effects, be granted preference by international organizations in the allocation of appropriate funds and technical assistance; and the utilization of their specialized services.

Thus, the Convention on the Law of Sea, 1982 has adopted a positive approach for protection and preservation of seas from pollution, advancement of human knowledge about the added value of sea for betterment of human life through marine research and for making all coastal

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<sup>9</sup> U.N. CONVENTION ON THE LAW OF SEA, 1982, Article 192.

<sup>10</sup> *Id.*, Article 193.

States and users of the sea to acquire international standards for keeping appropriate marine environment by easily acquiring marine technology for that purpose.<sup>11</sup>

#### IV. STATUTORY PROVISIONS TO PROTECT AND PRESERVE ENVIRONMENT.

##### A. *The Water (Prevention and Control of Pollution) Act, 1974*

Recognizing the importance of the prevention and control of pollution of water for human existence Parliament has enacted the Water (Prevention and Control of Pollution) Act, 1974.<sup>12</sup>

Section 2 of the Act defines “pollution” as such contamination of water or such alteration of the physical, chemical or biological properties of water or such discharge of any sewage or trade effluent or of any other liquid, gaseous or solid substance into water (whether directly or indirectly) as may or is likely to, create a nuisance or render such water harmful or injurious to public health or safety, or to domestic, commercial, industrial, agricultural or other legitimate uses, or to the life and health of animals or plants or of aquatic organisms.

##### B. *The Environment (Protection) Act, 1986*

In order to implement the result of the decisions taken at the United Nations Conference on the Human Environment held at Stockholm in June, 1972 in which India participated, Parliament has passed the Environment (Protection) Act, 1986. The Act was brought into force throughout India with effect from Nov. 19, 1986. Section 2 defines the expression ‘environment’ and other significant expressions which are as under:-

2. Definitions.-In this Act, unless the context otherwise requires:

- (a) “environment” includes water, air and land and the inter-relationship which exists among and between water, air and land, and human beings, other living creatures, plants, micro-organism and property;

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<sup>11</sup> *Id.*, Articles 194-201.

<sup>12</sup> The object of the Water Act, 1974 is to provide for the establishment of Boards for the prevention and control of water pollution and the maintaining or restoring of wholesomeness of water.

- (b) “environmental pollutant” means any solid, liquid or gaseous substance present in such concentration as may be, or tend to be, injurious to environment;
- (c) “environmental pollution” means the presence in the environment of any environmental pollutant;
- (e) “hazardous substance” means any substance or preparation which, by reason of its chemical or physico-chemical properties or handling, is liable to cause harm to human beings, other living creatures, plants, micro-organism, property or the environment.

Section 3 directs the Central Government to take measures to protect and improve environment. Section 7 and 8 make provisions for persons carrying on industry, operation, etc. which are as under:-

- 7. No person carrying on any industry, operation or process shall discharge or emit or permit to be discharged or emitted any environmental pollutant in excess of such standards as may be prescribed.
- 8. No person shall handle or cause to be handled any hazardous substance except in accordance with such procedure and after complying with such safeguards as may be prescribed.

Section 15 of the Act lays down that contravention of the provisions of the said Act shall be punishable with imprisonment for a term which may extend to five years or with fine which may extend to one lakh rupees or with both.

## V. THE COASTAL ZONE MANAGEMENT

Coastal States have a significant role in protecting and preserving their coastlines. With unique environmental characteristics, the coastal zone is a meeting point for land, sea and inland waters. Coastal zones are highly productive and biologically diverse ecosystems that offer crucial habitats for marine species and have an instrumental bearing over the economy of the nation. Integrated Coastal Zone Management (ICZM) is a globally accepted concept that aims at protection of coastal areas, coastal communities and promotion of sustainable development. It involves a process of participatory governance and consists of legal, policy and institutional framework necessary to integrate economic development,

environmental management and social goals. The UN Conference on Environment and Development, 1992 recognized the CZM approach and Chapter 17 of the Agenda 21 set out the policy for integrated management and sustainable development of coastal areas. The Convention on Biological Diversity 1992, and the Jakarta Mandate 1995 on Integrated Marine and Coastal Area Management (IMCAM) further strengthened the need for integrated coastal management based on sound scientific and ecological principles.

The Government of India has made efforts for the preservation, protection and promotion of coastal ecology. The Ministry of Environment and Forests undertook an exercise regarding the protection and development of the coastal areas. The legal regime of coastal management came into force in the year 1991. The Central Government issued the Coastal Regulation Zone (CRZ) Notification<sup>13</sup> by virtue of its power under Environment Protection Act, 1986, to take all such measures that are necessary and expedient for the purpose of protecting and improving the quality of the environment.<sup>14</sup> The CRZ Notification declares limits of, and prohibition in, coastal regulation zones. It provides the regulation of permitted activities. Further, it classifies the zones into four categories for the purpose of regulation.<sup>15</sup>

By this Notification, Government declared the coastal stretches of seas, bays, estuaries, creeks, rivers and backwaters which were influenced by tidal action (in the landward side) up to 500 meters from the High Tide Line and the land between Low Tide Line (LTL) and High Tide Line (HTL) as Regulation Zones. It imposed various restrictions on the setting up and expansion of industries, operation or processes etc. in the said Regulation Zones. It was specified that for the purposes of the main notification, high Tide Line (HTL) was defined as the line up to which the highest high tide reaches at spring times. The CRZ Notification was finalised in the year 1991, but amended several times afterwards. The recently notified Coastal Regulation Zone (CRZ) Notification, 2011 and Island Protection Zone (IPZ) Notification, 2011 strives to protect livelihoods of traditional fisherfolk communities, preservation of coastal ecology and promotion of economic activity that have necessarily to be located in coastal region.

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<sup>13</sup> SO 114 (E) issued by the Ministry of Environmental and Forests on 19 February, 1991.

<sup>14</sup> The Environment (Protection) Act, 1986, Section 3(1).

<sup>15</sup> *Supra* n. 13.

### **A. Prohibited Activities: Para 2 of the CRZ Notification**

The general characteristic of the main Notification is that a number of activities are declared as prohibited in the Regulation Zones. The Notification provides not only certain prohibitions, but also exceptions to the prohibitions. Setting up of new industries and expansion of existing industries are prohibited.<sup>16</sup> However, projects of the Department of Atomic Energy and non-polluting industries in the field and other services in the Coastal Regulation Zone (CRZ) of special economic zone (SEZ) are not prohibited. Some other exceptions are salt harvesting by solar evaporation of sea-water, desalination plants and storage of non-hazardous cargo such as edible oil, fertilizers and food grain within notified ports. Manufacture or handling or storage or disposal of hazardous wastes and substances<sup>17</sup> also fall within the prohibition.<sup>18</sup>

Mechanisms for disposal of wastes and effluents into watercourse can be set up or expanded only with approval under the Water (Prevention and Control of Pollution) Act, 1974. Those industries which are directly related to water front or needing directly foreshore facilities are exempted. In *S. Jagannath v. Union of India*,<sup>19</sup> a Division Bench of the Supreme Court held that the aquaculture industry is not the one which is directly related to water front or which directly needs foreshore facilities.

All exempted activities are to be undertaken without adverse impact upon the ecology of the coastal zone. Prohibition against fish processing units does not extend to fish cultivation and natural fish drying in separate

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<sup>16</sup> *Id.*, para 2 (i). This includes fish processing units and their warehousing.

<sup>17</sup> *Id.*, para 2 (ii). There are separate notifications dealing with the substances. Activities specified in these Notifications were prohibited in CRZ. See, SO 594 (E) dated 28 July 1989; SO 966 (E) dated 27 November, 1989; and GSR 1037 (E) dated 5 December, 1989.

<sup>18</sup> It may be pointed out that transfer of hazardous substances from ships to ports, terminals and refineries and *vice versa* is permitted. Facilities for receipt of petroleum products and liquefied natural gas (LNG) and facilities for re-gasification may be permitted within areas other than CRZ I which consists of ecologically sensitive and important areas. This permission is subject to safety regulations and subject to further terms and conditions for implementing ameliorative and restorative measures in relation to the environment as may be stipulated by the Ministry of Environment and Forests.

<sup>19</sup> (1997) 2 SCC 87.

permitted areas or to their modernization. Therefore, conditional exemption is granted in these cases.<sup>20</sup>

Discharge of untreated wastes and effluents from industries, cities or towns and other human settlements and dumping of city or town wastes for the purpose of land filling, or otherwise is prohibited.<sup>21</sup> There is total prohibition on dumping of ash or any wastes from thermal power stations.<sup>22</sup> Land reclamation, bunding or disturbing the natural course of sea water with similar obstruction are allowed only for purposes of construction of ports, harbours, jetties, wharves, quays, bridges and sea links and for other facilities.<sup>23</sup> Other facilities include activities permissible under the notification for control of coastal erosion and maintenance or cleaning of waterways, channels and ports or for prevention of sand bars or for tidal regulators, storm water drains or for structures for prevention of salinity ingress and for sweet water recharge.

Further, reclamation for commercial purposes such as shopping and housing complex, hotels and entertainment activities is impermissible. Mining of sands, rocks and other substrata materials, except those rare minerals not available outside the CRZ, is within prohibitions.<sup>24</sup> Any construction activity is not allowed in an ecologically sensitive area or between the HTL and LTL. However, facilities shall be permitted between the Low Tide Line (LTL) and High Tide Line (HTL) for discharge of treated effluents or waste water discharges into the sea, for carrying sea water for cooling purposes, or for construction of oil, gas and similar pipelines.<sup>25</sup> Except those permitted under the CRZ Notification, dressing or altering of sand dunes, hills, natural features, including landscape changes for beautification, recreational and other purposes are prohibited.

Pollution and exhaustion of groundwater in coastal aquifers are potential hazards in the coast. Harvesting or drawing of groundwater and

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<sup>20</sup> SO 114 (E) dated 19 February, 1991, para 2 (iii), proviso.

<sup>21</sup> *Id.*, para 2 (v) and (vi).

<sup>22</sup> *Id.*, para 2 (vii).

<sup>23</sup> *Id.*, para 2 (viii).

<sup>24</sup> *Id.*, para 2 (ix). Under the proviso to para 2 (ix), mining of sands in Andaman and Nicobar islands was permitted subject to certain conditions in a regulated manner for the period up to 31 September, 2002.

<sup>25</sup> *Id.*, para 2 (xii).

construction of mechanism for such acts within 200 metres of HTL are prohibited.<sup>26</sup> However, if manually done, through ordinary wells, drawing of water for the purpose of drinking, horticulture, agriculture or fisheries is permitted in the zone between 200 metres to 500 metres. For drawing water for drinking and domestic purposes, the rigour of prohibition is relaxed to some extent.<sup>27</sup>

Where no other source of water is available and when done manually through ordinary wells and hand pumps, drawing of groundwater for drinking and domestic purposes is permitted. This permission is in the CRZs between 50 to 200 metres from HTL in cases of seas, bays and estuaries, and within 200 metres or CRZ, whichever is less from HTL, in case of rivers, creeks and backwaters, subject to restriction in areas affected by sea water intrusion.

### ***B. Regulation of Permissible Activities: Para 3 of the CRZ Notification***

Para 3 deals with regulation of permissible activities. It states that clearance shall be given for any activity within the Coastal Regulation Zone only if it requires water front and foreshore facilities. The assessment shall be completed within a period of ninety days from receipt of the requisite documents and data from the project authorities. The decision shall be conveyed within thirty days thereafter. Most of these activities require environmental clearance from the Ministry of Environment and Forest.

The coastal States and Union Territory Administrations were required to prepare, within a period of one year from the date of the Notification, Coastal Zone Management Plans identifying and classifying the CRZ areas within their respective territories in accordance with the guidelines given in Annexure-I and II of the Notification and obtain approval (with or without modifications) of the Central Government in the Ministry of Environment & Forests. Within the framework of such approved plans, all development and activities within the CRZ other than those covered in para 2 and para 3 (2) are to be regulated by the State Government, Union Territory Administration or the local authority as the case may be

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<sup>26</sup> *Id.*, para 2 (x).

<sup>27</sup> *Id.*, proviso to para 2 (x).

in accordance with the guidelines given in Annexures-I and II of the Notification.

The Ministry of Environment & Forests and the Government of State or Union Territory and such other authorities at the State or Union Territory levels, as may be designated for this purpose, are responsible for monitoring and enforcement of the provisions of this Notification within their respective jurisdictions.

### ***C. Annexure-I & II to the CRZ Notification***

Annexure I consists of para 6 (1) which relates to the classification of coastal regulation zone. The norms for regulation activities in the said zones are provided by para 6 (2) for regulating development activities. The coastal stretches within 500 metres of HTL of the landward side are classified under para 6 (1) into four categories.

Annexure II provides guidelines for development of beach resorts/hotels in the designated areas of CRZ-III for temporary occupation of tourist/visitors, with prior approval of the ministry of environment & forests.

Para 7(1) states that construction of beach resorts/hotels with prior approval of Ministry of Environment & Forest in the designated areas of CRZ-III for temporary occupation of tourist/visitors are subject to the conditions. It provides that the project proponents can not undertake any construction (including temporary constructions and fencing or such other barriers) within 200 metres (in the landward side) from the High Tide Line and within the area between the Low Tide and High Tide Line.

Para 7(2) states that in ecologically sensitive areas (such as marine parks, mangroves, coral reefs, breeding and spawning grounds of fish, wildlife habitats and such other areas as may be notified by the Central/State Government/Union Territories) construction of beach resorts/hotels shall not be permitted.

## **VI. REPORTS OF THE CENTRAL BOARD FOR THE PREVENTION AND CONTROL OF WATER POLLUTION, 1982, 1986-87 AND 1995**

The Central Board for the Prevention and Control of Water Pollution has recommended that continuous monitoring of the coastal waters especially heavy metals and pesticides in the biota should be carried out

to detect possible biomagnifications of some toxic chemicals and to provide early warning.<sup>28</sup>

Again in 1986-87, the Central Pollution Control Board in its report sought preservation and protection of the ecologically fragile areas. It pointed out that the mangrove forest and the wildlife sanctuary in Coringa Island, the Pulicat Lake and the bird sanctuary at Nelapattu are the ecologically sensitive areas warranting special attention and protection. In these areas no industrial activity which may pose a danger to the ecosystem should be permitted.<sup>29</sup>

In its 1995 Report, Central Pollution Control Board pointed out that the effluents from aquaculture forms are discharged into the coastal waters practically without any treatment.<sup>30</sup>

## VII. REPORT OF THE FAO, 1995

The Food and Agriculture Organization published a Report in April, 1995 on a Regional study and workshop on the Environmental Assessment and Management of Aquaculture Development. India was one of the 16 countries who participated in the workshop. Dr. K. Alagarwami, Director, Central Institute of Brackish Water Aquaculture, Madras presented a paper titled "the current status of aquaculture in India, the present phase of development and future growth potential". It has been published as an Annexure to the workshop-report published by the Food and Agriculture Organization.

Para 5.1.2 of Alagarwami Report provides various types of technologies and the change in them adopted by the aquaculture industry in India. It was pointed out that the initial concept and practice was to develop tide-fed systems, this slowly gave way to pump-fed systems. Presently, the emphasis is on seawater based farming systems for *P. monodon* with a water intake system extending far into the sea with submerged pipelines, pier system and gravity flow. From sandy clay soils, the present coastal farms are located in sandy soils also with seepage control provisions.<sup>31</sup>

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<sup>28</sup> REPORT OF THE CENTRAL BOARD FOR THE PREVENTION AND CONTROL OF WATER POLLUTION, "Coastal Pollution Control Series COPOCS/1/1982.

<sup>29</sup> *Id.*, COPOCS/5/1986-87.

<sup>30</sup> *Id.*, Pollution Potential of Industries in Coastal Areas of India, Nov. 1995.

<sup>31</sup> Para 5.1.2 of Alagarwami Report, published in the FOOD AND AGRICULTURE ORGANIZATION REPORT, April, 1995.

Alagaraswami report also highlighted various environmental and social problems created by the coastal aquaculture and suggested that protection of mangroves should receive attention. The agitations made by the environmentally conscious people of the coastal-areas against polluting aquaculture technologies has been pointed out by Alagaraswamy report as:

People in general have become aware of the environmental issues related to aquaculture. A current case in point is the agitation against a large commercial farm coming up in Chilka Lake (Orissa). People have demanded an EIA of the project. People in Nellore District in Andhra Pradesh have raised environmental issues and called for adoption of environmentally-friendly technologies and rejection of "imported" technologies from regions which have suffered environmental damage. Protests have been voiced by the local people in Tuticorin area in Tamil Nadu. Both print and visual media take up environmental issues with a great deal of zeal. This appears to augur well for regulating coastal shrimp farming with eco-friendliness.<sup>32</sup>

Alagaraswamy report suggested future management strategies for farms and Government in resolving any conflicts or environmental problems.

Alagaraswami's report identifies salinisation of land, salinisation of drinking water wells, obstruction of natural drainage of flood water, passage of access to sea by fishermen and public, self-pollution of ponds, pollution of source water, destruction of mangroves, land subsidence and pressure on wild seed resources and consequences thereof as environmental issues in shrimp culture.

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<sup>32</sup> *Ibid.* The intensive farming technique and the pollutants generated by such farming have been noticed by Alagaraswamy which is as under:-

In intensive farming, stocking densities are on the increase. In one instance, *P. Indicus* was stocked at 70 post larvae/m<sup>2</sup>, almost reaching the levels of Taiwan before the disease outbreak in 1988. This necessitates heavy inputs of high energy feeds, the use of drugs and chemicals and good water exchange. The organic load and accumulation of metabolites in the water drained into the sea should be very high as could be seen from the dark-brown colour and consistency of the drain water.

### VIII. REPORT OF THE UNITED NATIONS RESEARCH INSTITUTE

The Report of the United Nations Research Institute for Social Development dated June, 1995<sup>33</sup> states the picture regarding polluted waters and depleted fisheries. The United Nations Report states that intensive ponds have a maximum life of only 5 to 10 years. Abandoned ponds can no longer be used for shrimp and there are few known alternative uses for them except some other types of aquaculture. Apparently they can seldom be economically rehabilitated for other uses such as crop land.

### IX. JUDICIAL APPROACH FOR PROTECTION OF MARINE ENVIRONMENT

The Supreme Court has given landmark judgments for the protection, preservation and promotion of natural environment and marine environment. It has issued effective directions and laid down marvelous principles to protect and preserve environment.

In *Indian Council For Enviro-Legal Action case*<sup>34</sup>, a three Judges Bench of the Supreme Court held that the Coastal Regulation Zone (CRZ) Notification, 1991 was issued under Sections (3) and 3(2) (v) of the Environment Protection Act, presumably after a lot of study had been undertaken by the Government. That such a study had taken place is evident from the bare perusal of Notification itself which shows how coastal areas have been classified into different zones and the activities which are prohibited or permitted to be carried out in certain areas with a view to preserve and maintain the ecological balance<sup>35</sup>.

It was held that the newly added proviso in Annexure II in paragraph 7 in sub-paragraph (I) (Item i) which gives the Central Government arbitrary, uncanalized and unguided power, the exercise of which may result in serious ecological degradation and may make the NDZ ineffective is *ultra vires* and is hereby quashed. No suitable reason had been given which can persuade the court to hold that the enactment of such a proviso was necessary, in the larger public interest, and the exercise of power

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<sup>33</sup> The United Nations Research Institute for Social Development in collaboration with the World Wide Fund for Nature International has conducted a study and published a report dated June 19, 1995 called SOME ECOLOGICAL AND SOCIAL IMPLICATIONS OF COMMERCIAL SHRIMP FARMING IN ASIA. The report is prepared by Solon Barraclong and Andrea Finger - Stich (the UN Report).

<sup>34</sup> *Indian Council for Enviro-Legal Action v. Union of India*, (1996) 5 SCC 281.

<sup>35</sup> *Id.* at 295, para 32.

under the proviso will not result in large-scale ecological degradation and violation of Article 21 of the citizens living in those areas.<sup>36</sup>

The Court stated that violation of anti-pollution legislations adversely affects the existing quality of life. Further, the non-enforcement of the statutory provisions often results in ecological imbalance and degradation of environment. Consequently, its adverse effects will have to be borne by the future generations. The Court found that there is 6000 km long coastline in India. It is the responsibility of coastal states and Union Territories in which these stretches exist to see that both the notifications are complied with and enforced. Management Plans have to be prepared by the states and approved by the central government.<sup>37</sup>

*S. Jagannath*<sup>38</sup> is an important case decided by a division bench of the Supreme Court. Speaking on behalf of the Court, Kuldip Singh, J. stated that shrimp (prawn) culture industry is taking roots in India. Since long the fishermen in India have been following the traditional rice/shrimp rotating aquaculture system. Rice is grown during part of the year and shrimp and other fish species are cultured during the rest of the year. However, during the last decade the traditional system which, apart from producing rice, produced 140 kgs. of shrimp per hectare of land began to give way to more intensive methods of shrimp culture which could produce thousands of kilograms per hectare. A large number of private companies and multinational corporations have started investing in shrimp farms. In the last few years more than eighty thousand hectares of land have been converted to shrimp farming. More and more areas are being brought under semi-intensive and intensive modes of shrimp farming. The environmental impact of shrimp culture essentially depends on the mode of culture adopted in the shrimp farming. Indeed, the new trend of more intensified shrimp farming in certain parts of the country- without much control of feeds, seeds and other inputs and water management practices - has brought to the fore a serious threat to the environment and ecology.<sup>39</sup>

It was held that a shrimp farm on the coastal area by itself operates as a dyke or a band as it leaves no area for draining of the flood waters.

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<sup>36</sup> *Id.* at 298, para 38.

<sup>37</sup> *Id.* at 302, para 44.

<sup>38</sup> *S. Jagannath v. Union of India & ors.*, (1997) 2 SCC 87.

<sup>39</sup> *Id.* at 91, para 1.

The construction of the shrimp farms, therefore, was violative of clause (viii) of para 2 of the Coastal Regulation Zone Notification. It was held that such activity were also violative of Coastal Regulation Zone, 1991, issued under Rule 5(3) (d) of the Environment (Protection) Rules, 1986. Therefore, it could not be permitted to operate. The Apex Court pointed out that at universal level, coastal pollution is an emerging problem. India is already suffering from a serious environmental problem.

The Court issued a number of directions to be followed by the Government of India and Governments of Coastal States and directed that any violation or non-compliance of the directions of the Apex Court shall attract the provisions of the Contempt of Courts Act, 1971.

#### **X. COASTAL REGULATION ZONE (CRZ) NOTIFICATION, 2011**

The Ministry of Environment and Forests, the Central Government *vide* its notification number S.O.114 (E), dated 19th February, 1991 declared Coastal Regulation Zone. It imposed certain restrictions on the setting up and expansion of industries, operations and processes in the said Zones for its protection.

In compliance to the Orders of the Hon'ble Supreme Court, the coastal States and Union territory, prepared the Coastal Zone Management Plans which were approved with condition and modifications dated 27th September, 1996 by the Central Government.

The said notification was amended, from time to time, based on recommendations of various committees, judicial pronouncements, representations from State Governments, Ministries and Departments of the Central Government, and the general public, consistent with the basic objective of the said notification.

In exercise of powers conferred by clause (d) of sub rule (3) of Rule 5 of Environment (Protection) Rules, 1986 and all powers vesting in its behalf, the Central Government issued the Coastal Regulation Zone Notification 2011 and Island Protection Zone (IPZ) Notification 2011 which declared the following areas as CRZ and imposed with effect from the date of the Notification, restrictions on the setting up and expansion of industries, operations or processes etc., in the said CRZ: -

- (i) The land area from High Tide Line (HTL) to 500 mts on the landward side along the sea front.

- (ii) CRZ shall apply to the land area between HTL to 100 mts on the landward side along the tidal influenced water bodies that are connected to the sea. Tidal influenced water bodies means the water bodies influenced by tidal effects from sea. The distance up to which development along such tidal influenced water bodies is to be regulated shall be governed by the distance up to which the tidal effects are experienced which shall be determined based on salinity concentration of 5 parts per thousand (ppt) measured during the direst period of the yea and distance up to which tidal effects are experienced shall be clearly identified demarcated accordingly in the Coastal zone Management plans (CZMPs).
- (iii) The land area falling between the hazard line and 500 mts from HTL on the landward side. Hazard line means the line demarcated by Ministry of Environment and Forests (MoEF) through Survey of India (Sol) taking into account tides, waves and sea level rise and shorelines changes.
- (iv) Land area between HTL and Low Tide Line (LTL) which will be termed as the inter tidal Zone.
- (v) The water area between the LTL to the territorial water limit (12 Nm) in case of sea and the water area between LTL to LTL in case of tidal influenced water bodies.

These Notifications strives to protect livelihood of traditional fisher folk communities, preservation of coastal ecology and promotion of economic activity that have necessarily to be located in coastal regions.

## XI. CONCLUSION

In the 21<sup>st</sup> century, preservation and protection of marine environment are the most significant challenge before the international community. Recent studies show that degradation, particularly of shore line areas has accelerated drastically as industrial discharge and run off from farms and coastal cities has increased. The oceans around the world, today, are being used as garbage cans to dump all kind of wastes. These activities resulted in the degradation of wetlands, floodplains, sea grass beds and coral reeves. The land-based activities contribute a higher percentage of marine pollution than the pollution from sea-based activities. It is estimated that, at a global level, up to eighty percent of the total solid wastes found on beaches

had its origin at the nearest rivers, indicating that watersheds and nearby beaches are parts of a single, unified land-ocean system. But the international legal regime has more focused on pollution generated by sea-going vessels rather than land based sources. There are no comprehensive global norms to address this major source of pollution.

The International Law and International Conventions have made elaborate provisions for protection and preservation of marine environment. The Convention on the High Seas, 1958 has made provisions with the object of prevention of pollution of the seas. The International Convention on the Law of Sea, 1982 has made elaborate provisions in Part XII on the protection and preservation of the marine environment. Article 194 (1) specifically provides that States shall take individually or jointly as appropriate, all measures consistent with this Convention that are necessary to prevent, reduce and control pollution of the marine environment from any source, using for this purpose the best practicable means at their disposal and in accordance with their capabilities.

In India marine pollution due to spilling of oil exist mainly around the ports and harbours caused by ships plying near the coast by pumping the discharging oil due to leaks or wanton discharge of used crank-case and other oils. The management of marine pollution is regulated with the help of Coastal Regulation Zone Notification 2011.

Judiciary in various cases has issued directions for the protection of marine environment. The general public is becoming aware of the need to protect environment. With increasing threat to the environment degradation taking place in the different parts of the country, it may not be possible for any single authority to effectively control the same. Environment degradation is best protected by the people themselves. Without appropriate awareness of marine pollution, there may not be the necessary global will to effectively address the issue. Balanced information on the sources and harmful effect of marine pollution needs to become part of general public awareness and ongoing research is required to fully establish, and keep current, the scope of the issue.