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INDIA'S COASTAL REGULATION ZONE NOTIFICATION 2011-TIPPING
THE SCALES TOWARDS ENVIRONMENTAL SUSTAINABILITY?

Sushmita Purohit and Till Markus

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1

INTRODUCTION

India's coastline and its nearshore marine environment are increasingly being pressurised by multiple uses and exploitation interests. Such pressures are increasing at a fast pace due to India's rapidly growing economy and the widespread use of advancing technologies in traditional industries such as fisheries or mining. *Prima facie*, development interests seem to be guiding current regulatory approaches and in many cases these interests are prioritised over environmental conservation needs. This article primarily aims at describing the current status of India's law that regulates coastal use, development and protection. It also analyses India's capacity to manage and balance use and conservation interests in a sustainable way. First, it will give an overview of the anthropogenic pressures on India's coasts and coastal waters as well as the conflicts arising out of these increasing pressures. Second, it will provide an introduction to India's coastal and marine environmental law and governance structures. Third, it will outline the legislative and executive competence order in the area of marine environmental law provided by India's Constitution. In addition, a short overview of the existing Union legislation relevant for marine and coastal conservation will be given. It will then focus on the development and content of the Coastal Regulatory Zone (CRZ) Notification, given its status as India's most specific and developed legislative instrument designed to manage and steer human activities in both the coastal areas and India's territorial sea. Finally, it will highlight the positive developments under the new CRZ Notification 2011, but also mention the legislative gaps and implementation deficits that may be seen as obstacles to achieving sound and sustainable coastal management. It is hoped that this article will help ignite an urgently required debate regarding the management of India's coastal and marine riches that helps to truly balance development interests and environmental concerns.

2

OVERVIEW OF INDIA'S COASTAL USES AND COASTAL CONFLICTS

India has a long coastline of 7517 km,¹ which leaves it with an Exclusive Economic Zone (EEZ) of approximately 2.02 million sq. km.² Its coastal areas have a rich biodiversity both on land and under the sea, and include estuaries, lagoons, mangroves, backwaters, salt marshes, rocky coasts, sandy beaches and coral reefs. These diverse coastal ecosystems, however, are exposed to increasing pressures. The following section will give a brief overview of recent developments in this regard.

2.1 Anthropogenic Pressures

Human activities along India's coastal areas have impacted and in some areas heavily damaged coastal and marine ecosystems.³ There are a plethora of scientific studies there with respect to the increasingly harmful impacts of human activity on India's marine environment.⁴ For example, one of India's renowned research institutes, The Energy and Resources Institute (TERI) in 2003 presented a

1 For more details, see, Government of India, Ministry of the Environment, State of the Environment (2009), p. 3, available at <http://www.moef.nic.in/downloads/home/home-SoE-Report-2009.pdf>.

2 *Id.*

3 V.K. Pillai, 'Marine Pollution in the Coastal Waters of India', in N.G. Menon and C.S.G. Pillai eds, *Marine Biodiversity: Conservation and Management* 143, 151 (Cochin: Central Marine Fisheries Research Institute, 1996).

4 For more details of harmful impacts, see T. Basudev and P.S. Rajasekhar, 'Natural and Anthropogenic Threats to Olive Ridley Turtles (*Lepidochelys Olivacea*) at the Rushikulya Rookery of Orissa, India' 38/4 *Indian Journal of Marine Science* 439, 443 (2009), S.S. Sawant, L. Prabhudessai and K. Venkat, 'Eutrophication Status of Marine Environment of Mumbai and Jawaharlal Nehru Ports' 127 *Environmental Monitoring and Assessment* 283, 291 (2007) and V.P. Upadhyay, R. Ranjan and J.S. Singh, 'Human-mangrove Conflicts: The Way Out' 83/11 *Current Science* 1328-1336 (2002), available at <http://repository.ias.ac.in/72920/1/72920.pdf>.

pertinent evaluation that identified several significant pressures on the marine environment.⁵

The first pressure is titled 'Population density and urbanisation'. Most of India's coastal regions are low lying and densely populated. The nine coastal states of India have a combined population of about 440 million people out of which 330 million people live within 150 km of the coast. These numbers are expected to rise rapidly. Resource rich coastal land is a huge draw, not only for people, but also for the related dense infrastructure necessities such as dwelling structures, road and rail transport, production and service industries, port facilities, petroleum industries and refineries, among others.

The second pressure is identified as 'Intensive aquaculture and agriculture'. In the 1960s, high yielding varieties of crops, which were highly responsive to fertilizers, pesticides, and new irrigation techniques, were introduced to India's agriculture (so called 'Green Revolution').⁶ At present, many of the intensive agricultural activities pose substantial threats of eutrophication and pollution of marine waters.⁷ In addition, according to a FAO report of 2005, the aquaculture industry in India has seen enormous growth over the last two decades.⁸ One of the major consequences of the intensive shrimp farming industry in India, for

instance, has been the destruction of mangrove forests along the coast.⁹

The TERI Report also states that 'Industrial activities' remain one of the major competitors for the use of coastal areas. According to TERI researchers, the major advantages of the coastal location for industries are transportation, water use, and waste disposal.¹⁰ Adverse effects of industrial activities include decreasing ground water quality and quantity, as well as land cover changes, including change in coastal biodiversity.¹¹

'Shipping and port activities' also contribute to pressurising coastal and marine areas. According to the Government of India,¹² approximately 90 per cent of the country's trade by volume (70 per cent in terms of value) is moved by sea.¹³ In addition, the Indian maritime sector also provides a variety of other services, such as cargo handling services, shipbuilding and ship repairing, freight forwarding, lighthouse facilities, etc.

The fifth major pressure is summarised as 'Density of tourist infrastructure'. In 2006 alone, international tourist arrivals in Southern Asia grew by 10 per cent and India was responsible for half of those arrivals.¹⁴ More pertinently, 50 per cent of all tourists to India visit the coastal areas.¹⁵

5 L. Noronha et al., A Framework of Indicators of Potential Coastal Vulnerability to Development (New Delhi: The Energy and Resources Institute, Working Paper, 2003), available at <http://www.teriin.org/teri-wr/coastin/papers/teripaper1.pdf>.

6 *Id.*

7 Other threats on land are, inter alia, groundwater depletion, soil degradation, and land cover change, see M.R. Jorge et al., Measuring, Monitoring and Managing Sustainability in Indian Coastal Areas: The Socioeconomic Dimension (Proceedings of the 6th Conference Littoral 2002: the changing coast, Porto: EUROCOAST- Portugal, 237, 247, 2002), available at <http://www.teriin.org/teri-wr/coastin/littoral.pdf>.

8 K. Anjani, P.K. Joshi and S.B. Pratap, 'Fisheries Sector in India: An Overview of Performance, Policies and Programmes', in K. Anjani, K.K. Pradeep and P.K. Joshi eds, *A Profile of People, Technologies and Policies in Fisheries Sector in India* 1,16 (New Delhi: Workshop Proceedings National Centre for Agricultural Economics and Policy Research, 2003), available at http://www.ncap.res.in/upload_files/workshop/wspten.pdf; see Noronha et al., note 5 above.

9 See Jorge et al., note 7 above. The negative environmental impacts of the aquaculture industry were assessed and discussed in detail by the Indian Supreme Court in a landmark case, *S. Jagannath v. Union of India*, AIR 1997 SC 811. This Supreme Court judgment led to the establishment of the Aquaculture Authority in 1997. The Central Government, in 2005, passed the Coastal Aquaculture Authority Act, 2005.

10 See Jorge et al., note 7 above.

11 See Noronha et al., note 5 above.

12 The growth profile of the shipping sector in India shows that there has been a 53-fold increase in the Gross Registered Tonnage (GRT) since India's independence (1947). See Government of India, Ministry of Shipping, Indian Shipping Statistics (2010), available at <http://shipping.nic.in/writereaddata/l892s/shipstat-12478603.pdf>.

13 *Id.*

14 M. Markovic et al., *Sustainable Coastal Tourism: An Integrated Planning and Management Approach* 16 (Paris: United Nations Environment Programme, 2009), available at <http://www.unep.fr/shared/publications/pdf/DTIx1091xPA-SustainableCoastalTourism-Planning.pdf>.

15 See Noronha et al., note 5 above.

Additional challenges on India's coasts are also increasingly imposed by climate change. A recent report released by the Indian Network for Climate Change Assessment estimated that annual temperatures in the 2030s (when compared to the temperatures of the 1970s) will rise between 1.7 – 2.2 °C, with extreme temperatures increasing by up to 4 °C, with the maximum increase in the coastal regions.¹⁶ The study also found that the sea level along the Indian coast has been rising at the rate of 1.3 mm per year and is likely to rise in consonance with the global rise in sea level in the future.¹⁷

2.2 Overview of Conflicts Arising from Increasing Pressures on India's Coasts

As human activity escalates on India's coastline, several conflicts arise due to the abovementioned competing pressures. For instance:

- Coastal forests are threatened by competing natural resource demands for human consumption and for urban infrastructure development.¹⁸
- Conflicts arise between smaller, more traditional fishing interests and larger, more industrial fishing interests over the areas in which fishing is permitted, as well as the size of the fishing quota in those areas.¹⁹

- 'Traditional usage' conflicts with 'development' among people residing in coastal areas.²⁰
- Interest in economic growth conflicts with the increasing inability to accept the pollution caused by the industries that are driving current growth.²¹

Such conflicts leave experts, policymakers and lawmakers with the challenge to strike a balance between development interests and conservation needs.²²

3

LEGISLATIVE AND INSTITUTIONAL ORDER GOVERNING INDIA'S MARINE AND COASTAL ENVIRONMENT

Activities affecting India's coastal ecosystems are governed by a broad set of legislative instruments and institutions. For example, legislation on freshwater, waste management, the protection of biodiversity, ports, shipping, fisheries, and military uses all affect the wellbeing of coastal and marine

16 Ashwini Kulkarni, Climate Change Scenarios 2030s. (Paper presented at the workshop entitled Climate Change and India – A 4x4 Assessment organized by the Indian Institute of Tropical Meteorology, New Delhi 16 November 2010), available at <http://moef.nic.in/downloads/public-information/fin-rpt-incca.pdf> and R.J. Nicholls, et al., 'Coastal Systems and Low-lying Areas', in M.L. Parry ed., *Climate Change 2007: Impacts, Adaptation and Vulnerability: Working Group I Contribution to the Fourth Assessment Report of the IPCC* 316, 356 (Cambridge: Cambridge University Press, Volume 4, 2007).

17 See Markovic et al., note 14 above.

18 R.S. Rodrigues, A. Mascarenhas and T.G. Jagtap, 'An Evaluation of Flora From Coastal Sand Dunes of India: Rationale for Conservation and Management' 54(2) *Ocean & Coastal Management* 181,188 (2011) and B.A. Polidoro et al., 'The Loss of Species: Mangrove Extinction Risk and Geographic Areas of Global Concern' 5(4) *PLoS ONE* e10095 (2010).

19 N. Aswathy, T.R. Shanmugam and R. Sathiadhas, 'Economic Viability of Mechanized Fishing Units and Socio-economics of Fishing Ban in Kerala' 58(2) *Indian Journal of Fisheries* 115, 120 (2011).

20 A. Lakshmi and R. Rajagopalan, 'Socio-economic Implications of Coastal Zone Degradation and Their Mitigation: A Case Study from Coastal Villages in India' 43(8-9) *Ocean & Coastal Management* 749, 762 (2000).

21 P.B. Sahasranaman, *Oxford Handbook of Environmental Law* (New Delhi: Oxford University Press, 2009).

22 Throughout the last decades, various international conventions, national programmes and scientific reports have highlighted the need to consider the interplay between different exploitation and use activities and their effects on the marine environment. See, Agenda 21, in Report of the United Nations Conference on Environment and Development, Rio de Janeiro, UN Doc. A/CONF. 151/26/Rev.1 (Vol. 1), Annex II (1992), Plan of Implementation of the World Summit on Sustainable Development, in World Summit on Sustainable Development, Johannesburg, UN Doc. A/CONF. 199/20 (2002), Marine and coastal biodiversity: sustainable fisheries and addressing adverse impacts of human activities, voluntary guidelines for environmental assessment, and marine spatial planning, in Report of the Eleventh Meeting of the Conference of the Parties to the Convention on Biological Diversity, UN Doc. UNEP/CBD/COP/DEC/XI/18 (2012), A. Underdahl, 'Integrated Marine Policy: What? Why? How?', 4(3) *Marine Policy* 159,169 (1980).

ecosystems. The following section will provide a brief overview of the existing legal and institutional order regarding the activities, areas, and issues that are vital for the environmentally sound development of coastal ecosystems.

3.1 Constitutional Competence Order in the Area of Marine and Coastal Legislation

The Constitution of India is the Supreme Law of the land and every power (executive, legislative or judicial) whether it belongs to the federation or component States is subordinate to and directed by the Constitution.²³ The Indian Constitution empowers the Union Parliament and the state legislatures to enact and implement laws relating to activities under their domain.²⁴ It divides areas of jurisdiction under three legislative lists: 'Union', 'State', and 'Concurrent' lists.²⁵ The Central and state governments have exclusive authority over the Union and State lists respectively, and both levels of government have jurisdiction over the activities in the Concurrent list, with the Central Government retaining overriding powers. The residual power to legislate on subjects not covered in the three lists is delegated to the Centre by Article 248. Article 249 empowers the Centre to legislate on any subject in the State list in the 'national interest'; it can also enact laws on state subjects if two or more state legislatures provide consent to such legislation (Article 252).²⁶

With regard to governing marine and coastal areas, the Union list comprises:

- International treaties, agreements and conventions²⁷

²³ D.D. Basu, *Introduction to the Constitution of India* (Nagpur: LexisNexis Butterworths Wadhwa, 20th edn. 2011).

²⁴ Subject matter of the laws made by Parliament and by the Legislatures of States under Article 246 of the Constitution of India.

²⁵ *Id.*

²⁶ Legislation for giving effect to international agreements under Article 253 of the Constitution of India.

²⁷ The Ministry of Environment and Forests, Government of India provides comprehensive information on national laws, international environmental treaties and declarations signed and/or ratified by India, available at <http://www.moef.nic.in>.

- Shipping and navigation on inland water ways (national waterways)²⁸
- Maritime shipping and navigation, including shipping and navigation on tidal waters²⁹
- Major ports and port authorities³⁰
- Regulation and development of inter-state rivers and river valleys³¹
- Fishing and fisheries beyond territorial waters³²

The State list of the Seventh Schedule comprises:

- Fisheries within territorial waters³³

The Concurrent list of the Seventh Schedule comprises:

- Shipping and navigation on inland water ways³⁴

²⁸ For complete listing of Shipping and Navigation Acts and Rules *see*, Ministry of Shipping, Government of India, New Delhi, available at <http://shipping.nic.in/index1.php?lang=1&level=0&linkid=36&lid=48>.

²⁹ The Major Ports Trust Act, 1963.

³⁰ *Id.*

³¹ For details on water related law and policy *see*, Ministry of Water Resources, Government of India, New Delhi, available at <http://mowr.gov.in/index.asp?langid=1>.

³² Department of Animal Husbandry, Dairying & Fisheries, Ministry of Agriculture, Government of India, New Delhi, available at <http://dahd.nic.in/dahd/default.aspx>. Some relevant central legal frameworks are: 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; Comprehensive Marine Fishing Policy, 2004; The Indian Fisheries Act, 1897; CRZ Notification, 2011 No. S.O. 19(E) & S.O. 20(E), Ministry of Environment and Forests, Government of India [hereafter CRZ Notification, 2011] and The Wetlands (Conservation and Management) Rules, 2010 No. G.S.R. 951(E), Ministry of Environment and Forests, Government of India.

³³ The Departments of Fisheries, under various State Governments, are responsible for managing fisheries resources through enacting legislation and regulations. Some examples are: The Maharashtra Marine Fishing Regulation Act, 1981; The Maharashtra Fisheries Act, 1960; The Kerala Marine Fishing Regulation Act, 1980 and The Orissa Marine Fishing Regulation Act, 1981; more information available on respective states fisheries departments' websites.

³⁴ For complete list of regional acts, rules and regulations related to inland waterways *see*, Inland Waterways Authority of India, Ministry of Shipping, Government of India, available at <http://iwai.nic.in>.

- Minor and Private Ports³⁵

Generally, the Indian Constitution has a strong Union bias.³⁶ This also applies to rules governing activities affecting coastal and marine uses and development as well as environmental conservation. It should finally be noted that 'environmental protection' has not yet been placed in any of the legislative lists (Union, State, or Concurrent) of the Constitution.³⁷

3.2 Laws Governing Coastal Activities and Institutions Responsible for Their Implementation

The distribution of the executive powers between the Centre and individual States largely resembles legislative powers concerning the subjects in the Union and State lists. However, with respect to the subjects in the Concurrent list, the executive function ordinarily remains with the States, but it is up to the discretion of the Central Government to take up the administration of the laws relating to any subject in the Concurrent list. The Central Government ensures that states are in compliance with the Union laws. Next to the CRZ Notification, 2011 the following laws are particularly relevant for the management of India's coasts in the areas of environmental protection, shipping³⁸, agriculture, and defence.³⁹ Such laws include, for example, the:

- Forest (Conservation) Act, 1980
- Water (Prevention & Control of Pollution) Act, 1974

35 Minor Ports under State's jurisdiction are governed by policy and directives of respective State Governments nodal departments/ agencies. Department of Economic Affairs, Ministry of Finance, Government of India, The Ports Sector in India (Position paper from the Department of Economic Affairs, December 2009), available at http://www.pppinindia.com/pdf/ppp_position_paper_ports_122k9.pdf.

36 See Basu, note 23 above.

37 *Id.*

38 For details on all related laws, see Ministry of Shipping, Government of India, note 28 above.

39 Ministry of Defence, Government of India, New Delhi, available at <http://mod.nic.in/>; see also, Indian Coast Guard, Ministry of Defence, Government of India, New Delhi, available at <http://indiancoastguard.nic.in/>.

- Hazardous Waste Management & Handling Rules, 1989⁴⁰

- Environmental Impact Assessment Notification, 1994⁴¹

- Environment (Protection) Act, 1986⁴²

- Indian Wildlife (Protection) Act, 1972⁴³

- Biological Diversity Act, 2002.

- Indian Ports Act, 1908.

- Deep Sea Fishing Policy, 1991.

- Indian Fisheries Act, 1987.

- Coast Guard Act, 1978.

- Maritime Zones (Regulation) of Fishing by Foreign Vessels) Act, 1981⁴⁴

4

MARINE PROTECTION AND COASTAL MANAGEMENT UNDER THE COASTAL REGULATION ZONE NOTIFICATION

As indicated by the list of legislative instruments above, the existing system of legislation governing activities in India's coastal areas is largely sector-specific. From an international comparative perspective, sectoral policies tend to neglect

40 Hazardous Wastes (Management and Handling) Rules, 1989 No. S.O. 594(E), Ministry of Environment and Forests, Government of India.

41 Environmental Impact Assessment Notification, 1994 No. S.O. 60(E), Ministry of Environment and Forests, Government of India.

42 The Environment (Protection) Act, 1986.

43 Wild Life (Protection) Act, 1972.

44 See also the Territorial Waters, Continental Shelf, Exclusive Economic Zone and other Maritime Zones Act, 1976.

environmental concerns; sector specific interests of, for example, fisheries, tourism, or the shipping sector usually outweigh environmental concerns.⁴⁵ Where measures are adopted to protect the environment, they often lack an ecosystem perspective, taking into account neither the interdependency of all ecosystem elements nor the cumulative effects of the different pressures on them. There is a genuine need to adopt an environmental conservationist approach to govern the use of coastal and marine areas. Among the abovementioned laws and policies, the CRZ Notification is the only law that has been specifically established to control and regulate growth and development of different activities along India's coasts. Recently, it has also taken into account the nearshore marine environment up to 12 nautical miles. Accordingly, it could be argued that the CRZ Notification is an indicator of how far India has moved towards an integrated coastal zone and marine management. The following section will concentrate on the scope, content, and implementation challenges of the CRZ Notification, 2011. But first, it will provide a brief history of the development of the CRZ Notification since its inception in 1991.

4.1 Background on the CRZ Notification from 1991 to 2010

Under the Environment (Protection) Act,⁴⁶ the MoEF issued the Coastal Regulation Zone Notification 1991 (CRZ 1991 or 1991 Notification) for the protection of the coastal areas.⁴⁷ The

regulatory approach of the CRZ 1991 was rather simplistic: it was aimed primarily at permitting only those activities that are absolutely dependent on being located in the coastal environment and to keep out the rest.⁴⁸ Accordingly, various activities were restricted, while others were permitted but subjected to specific obligations and conditions. In addition, the entire Coastal Regulation Zone was classified into different zones, i.e., CRZ-I, CRZ-II, CRZ-III and CRZ-IV based on ecological considerations and the extent of the development of human settlement (urban or rural).⁴⁹ The zones differed with regard to which activities would be allowed within their geographical scope.

Under the 1991 Notification, the responsibility for implementation was primarily assigned to the State Governments.⁵⁰ The 1991 Notification stated that the respective coastal State Government should identify, classify, and record all the CRZ areas in the State Coastal Zone Management Plans (SCZMP) and have them approved by the MoEF.⁵¹

Throughout the following years, however, it became obvious that the CRZ 1991 faced severe implementation deficits.⁵² Some of these challenges were due to various factors:

- The notification stipulated uniform regulations even for unique and ecologically sensitive areas such as the islands of Andaman and Nicobar.
- There were no appropriate clearance procedures for high-impact activities around the coast.

⁴⁵ See Article 253 of the Constitution of India.

⁴⁶ The Environment (Protection) Act, 1986. The Environmental Protection Act was adopted in 1986. It constitutes an umbrella regime that empowers the Central Government to formulate regulations in order to protect and conserve the environment. The intent of the Environment (Protection) Act and its Rules is that the Central Government may promulgate necessary rules and regulations 'for the purpose of protecting and improving the quality of the environment and preventing, controlling and abating environmental pollution'.

⁴⁷ Coastal Regulation Zone Notification, 1991 No. S.O. 114(E), Ministry of Environment and Forests, Government of India, [hereafter CRZ Notification 1991], See also, Sec. 6(1) of the Environment (Protection) Act, 1986 which provides, 'The Central Government may, by notification in the Official Gazette, make rules in respect of all or any of the matters referred to in Sec. 3' and P.B. Sahasranaman, note 21 above.

⁴⁸ A. Sridhar, 'CRZ 1991-2010: Anti-people? Anti-environment? Or Anti-climax?' *Infochange News & Features*, January 2011, available at <http://infochangeindia.org/Environment/Coastal-commons/CRZ-Notification-1991-2010-Anti-people-Anti-environment-Or-anti-climax.html>.

⁴⁹ For details see Ministry of Shipping, Government of India, note 28 above.

⁵⁰ See CRZ Notification 1991, para 3, note 47 above.

⁵¹ *Id.* para I(ii) and para 3(3)(i) state that the Coastal Zone Management Plans should identify and classify the various CRZ areas.

⁵² Ministry of Environment and Forests, 'Frequently Asked Questions on the Coastal Regulation Zone Notification, 2011 and 52 Protection Zone Notification, 2011' available at, <http://moef.nic.in/downloads/public-information/FAQ-CRZ.pdf>.

- There was a lack of monitoring mechanisms and enforcement mechanisms to check violations.
- Pollution from land-based activities was not taken into account.
- Interests of traditional coastal communities living in ecologically sensitive areas were not taken into account.
- Frequent amendments to the law (25 times in 19 years).

Particularly many amendments of the CRZ 1991 are indicative of the fact that the MoEF has been constantly attempting to (re)balance the evolving and increasing use and conservation conflicts in coastal areas. Several critics and analysts have pointed out that these amendments have rather lowered conservation standards and legal certainty,⁵³ and made room for lobbying groups that favored industrial interests over environmental standards.⁵⁴

The biggest problem, however, was that the existence of the CRZ Notification was almost completely ignored by the State Government's authorities responsible for implementation. This particularly came to light through a proceeding before the Indian Supreme Court, *Indian Council for Enviro-Legal Action v. Union of India*.⁵⁵ The petitioner was a non-profit organisation working for the cause of environmental protection. The petitioner primarily contended, in this 'Public

Interest Litigation (PIL)',⁵⁶ that the CRZ Notification, 1991 had not been implemented or enforced for several years after being formulated. The petitioners argued that due to the non-implementation of the CRZ Notification, 1991, developmental activities within the coast remained unregulated, thus allowing further environmental degradation. The Union of India in this case responded that they had experienced practical difficulties in implementing the Notification.⁵⁷ The Supreme Court in its judgment concluded that 'Even though, laws have been passed for the protection of environment, the enforcement of the same has been tardy, to say the least. With the governmental authorities not showing any concern with the enforcement of the said Acts, and with the development taking place for personal gains at the expense of environment and with disregard of the mandatory provisions of law...'.⁵⁸ The Supreme Court eventually called for proper and detailed implementation of the law.⁵⁹

Another landmark decision that drew attention to the lack of implementation was the PIL, *S. Jagannath v. Union of India*.⁶⁰ In this case the petitioner (again, a non-profit organisation) sought the enforcement of the CRZ Notification, 1991 before the Supreme Court of India. The petitioner argued that intensive and semi-intensive shrimp farming in the ecologically fragile coastal areas must be prohibited under Para 2 of the CRZ Notification 1991.⁶¹ Para 2(i) of the 1991 Notification bans the 'setting up of new industries and expansion of existing industries, except those directly related to waterfront or directly needing foreshore facilities'. The petitioner argued that the shrimp culture industry was not directly related to water or directly needing foreshore facilities.⁶² In

53 S. Narayanan, 'New Rules for Coasts', *Down To Earth*, 15 February 2011, page 41, available at <http://www.downtoearth.org.in/content/new-rules-coasts>, S. Narayanan, 'Road Open for Development', *Down To Earth*, 15 February 2010 page 18, available at <http://www.downtoearth.org.in/node/915> and C. Sharma, 'CRZ Notification 2011: Not the End of the Road', 46/7 *Economic & Political Weekly* 31 (2011), available at http://www.indiawaterportal.org/sites/indiawaterportal.org/files/CRZ_Notification_Chandrika_Sharma_EPW_2011.pdf.

54 'Amendment to the CRZ Notification', released 8th March 2010, *Press Information Bureau*, Government of India, New Delhi, available at <http://pib.nic.in/newsite/erelease.aspx?relid=59201>.

55 *Indian Council for Enviro-Legal Action v. Union of India & Others*, Supreme Court of India Judgement of 13 February 1996, AIR 1996 SC 1446.

56 Right to constitutional remedy under Article 32 of the Constitution of India and N.B. Rakshit, 'Right to Constitutional Remedy: Significance of Article 32', 34/35 *Economic & Political Weekly* 34 (1999), available at <http://www.jstor.org/stable/4408327>.

57 See *Indian Council for Enviro-Legal Action v. Union of India & Others*, note 55 above, para 24 *et seq.*

58 *Id.* para 47.

59 *Id.* directions (1) to (6) and A.K. Tiwari, *Environmental Laws in India* 295 (New Delhi: Deep & Deep Publications, 2006).

60 *S. Jagannath v Union of India and Others*, Supreme Court of India, Judgement of 11 December 1996, AIR 1997 SC 811.

61 *Id.* para 21.

62 *Id.* para 21 and 22.

addition, the petitioner sought the establishment of a National Coastal Zone Management Authority to safeguard the marine and coastal areas. On the other side, the representative of the shrimp industries primarily claimed that shrimp farms are directly related to the waterfront and cannot exist without foreshore facilities.⁶³ The Court held in favour of the petitioner that shrimp farms do not need waterfront facilities. Further, the Court observed that the purpose of the CRZ Notification is to protect the fragile coastal areas, and those activities that cause environmental degradation cannot be permitted.⁶⁴ Most importantly, the Court ordered the Central Government to

‘constitute an authority under Section 8(3) of the Environment (Protection) Act, 1986 and to confer on the said authority all the powers necessary to protect the ecologically fragile coastal areas, seashore, waterfront and other coastal areas and specially to deal with the situation created by the shrimp culture industry in the coastal States/Union Territories’.⁶⁵

In the aftermath of these decisions, the National Coastal Zone Authority (NCZMA) and State Coastal Zone Authorities (SCZMA) were set up in order to administer and implement the CRZ Notification.⁶⁶ As will be shown below, several steps have been taken under the CRZ Notification, 2011 to improve monitoring, control, and enforcement, as well as to increase transparency.⁶⁷ However,

executing the provisions laid down in the CRZ Notification has generally shown to pose serious challenges. For example, in the recent case of a newly constructed 31-floor high-rise in the city of Mumbai (Adarsh Housing Society), the builders violated the CRZ Notification on many counts, including constructing 25 extra floors for which they were not given permission.⁶⁸ Currently, the case is pending before the Bombay High Court as the MoEF is considering the demolition of the building.⁶⁹ In the coastal state of Goa, several recent news reports stated that the High Court has issued orders for the demolition of thousands of illegal structures that were constructed in violation of the CRZ Notification as identified by the State government.⁷⁰ As the demands of growth and development assert their pressures on the coastal environment, the challenge of implementing coastal zone regulations will likely mount upon enforcement authorities.

Against this background, the severe challenges that coastal management in India has to overcome become visible. The above information provides a picture of what the CRZ Notification, 2011 needs to address. The following section will examine the current status of India's central legislative instrument for targeting growth and development alongside its coasts in greater depth.

63 See CRZ notification 1991, note 47 above, para 2 and *Jagannath v Union of India and Others*, note 60 above.

64 See *Jagannath v Union of India and Others*, note 60 above and Tiwari, note 59 above.

65 See *Jagannath v Union of India and Others*, note 60 above.

66 See CRZ Notification, 2011, note 32 above. Under Para 6, the SCZMA's were directed to prepare Coastal Zone Management Plans in order to identify and classify the CRZ areas in the respective States.

67 To ensure the transparency in the working of the CZMA's all violations, decisions taken, actions taken, clearance letters, court cases etc., are to be made public on the respective SCZMA's website. The MoEF has issued directions, under Sec. 5 of the Environment Protection Act, regarding identification of violations under CRZ Notification, 1991. See Ministry of Environment and Forest, 2011, Government of India, New Delhi, available at http://moef.nic.in/downloads/public-information/Direction_EPA.PDF.

68 NetIndian, 'MoEF to give fresh hearing to Adarsh society members on its notice', *United News of India*, 8 March 2011, available at <http://netindian.in/news/2011/03/08/00011578/moef-give-fresh-hearing-adarsh-society-members-its-notice>.

69 In the city of Mumbai alone many more complaints of violations are being reported. See, Shalini Nair, 'Many More Adarsh-like Projects in City', *The Indian Express*, 10 March 2011.

70 Herald Reporter, '5-star Hotels Within CRZ Will Go', *Herald Goa*, 4 November 2010, Herald Reporter, 'CRZ Violation: 30 Structures Served Demolition Notices at Agonda', *Herald Goa*, 26 November 2009, G. D'souza, 'Court Reins in Goa Coast Violations', *Down To Earth*, 15 August 2010 page 20, available at <http://www.downtoearth.org.in/node/1651> and For more details on violations of the CRZ Notification, see D. Nandakumar and M. Muralikrishna, Mapping the Extent of Coastal Regulation Zone Violations of the Indian Coast (Thiruvananthapuram: National Fishworkers Forum, Report 1999), available at http://www.ceeiindia.org/cee/pdf/files/cmz_violation_studyby_thomas_kocherry.pdf.

4.2 Development of the Coastal Regulation Zone Notification 2011

More recently, on 6 January 2011, yet another amended CRZ Notification was published in the Gazette of India.⁷¹ With regard to drafting the amended Notification, the MoEF has relied extensively on scientific input and wide stakeholder involvement. In 2009, the MoEF established a committee under the leadership of the renowned scientist M.S. Swaminathan to review the scientific, legal, and policy provisions of the CRZ Notification, 1991.⁷² The committee consisted of policy and legal experts, as well as other experts from various fields such as marine science and engineering, and environmental planning. Following a scientific report, a draft Notification was issued by the MoEF in May 2010. Between May 2010 and January 2011, the MoEF held public consultations and deliberations with stakeholders representing different sectors and various regions. In comparison to the 1991 Notification, the 2011 Notification has in particular the following new features:

- It extends the scope of the Notification to include territorial waters within the CRZ.⁷³
- The islands of Andaman and Nicobar and Lakshadweep, owing to the unique and ecologically sensitive nature of their environment, and the marine areas surrounding these islands up to their territorial limits have been separately covered under the purview of the Island Protection Zone Notification.⁷⁴
- The Notification introduces the concept of a 'hazard line' that would be demarcated by

the MoEF.⁷⁵ Natural disasters such as tsunamis and floods cause major devastation in the coastal zone; the main purpose of defining a hazard line is to indicate threatened areas and thus to protect the life and property of the coastal communities as well as the coastal infrastructure. Accordingly, the guidelines for the preparation of Coastal Zone Management Plans suggest that, 'no developmental activities other than those listed above shall be permitted in the areas between the hazard line and 500 m or 100 m or width of the creek on the landward side'.⁷⁶

- The CRZ 2011 lays down a detailed procedure for obtaining approval for developmental projects falling within the limits of the Coastal Regulation Zone. Moreover, post clearance monitoring and enforcement mechanisms have been established.⁷⁷
- A new category called 'areas requiring special consideration' has been introduced in the 2011 Notification. Its purpose is to provide a special regime for the most critical coastal environments, which consist of (i) the CRZ areas of Greater Mumbai, Kerala and Goa, and (ii) the extremely vulnerable coastal areas such as Sunderbans.⁷⁸
- The 2011 Notification provides states with clear guidelines for the preparation of Coastal Zone Management Plans.⁷⁹
- The 2011 Notification puts in place concrete measures to combat industrial pollution from land-based activities in order to prevent erosion and other forms of environmental degradation in coastal areas.⁸⁰

71 See CRZ Notification 2011, note 32 above.

72 M.S. Swaminathan, Final Frontier, Agenda to Protect the Ecosystem and Habitat of India's Coast for Conservation and Livelihood Security (New Delhi: Ministry of Environment and Forests, Government of India Report, 16 July 2009), available at http://www.indiaenvironmentportal.org.in/files/cmz_report.pdf.

73 See CRZ Notification 2011, note 32 above at Para 1.

74 Island Protection Zone Notification, 2011 No. S.O. 20(E), Ministry of Environment and Forests, Government of India.

75 *Id.*

76 See CRZ Notification 2011, note 32 above at Annexure-I, Para D II (8), Annexure-I, Para D II (8).

77 *Id.* Para 4.2, 'Procedure for clearance of permissible activities'.

78 *Id.* Para 7, 'Classification of CRZ'.

79 *Id.* Annexure I.

80 *Id.* Para 3.

The basic structure of the regulatory approach of the CRZ Notification, 1991, however, was maintained under the CRZ Notification, 2011.

4.3 Overview of the Structure and Content of the CRZ Notification, 2011

The main objectives of the CRZ Notification, 2011 as stated by the MoEF⁸¹ are: a) to ensure livelihood security to the fishing communities and other local communities living in the coastal areas, b) to conserve and protect coastal stretches, and c) to promote development in a sustainable manner, based on scientific principles and taking into account the dangers of natural hazards in the coastal areas and sea level rise due to global warming. In principle, the Notification now defines the CRZ (and thus its geographical scope) as:⁸²

- The land area from the High Tide Line (HTL) to 500 m on the landward side along the waterfront.
- The land area between HTL to 100 m on the landward side along the tidal influenced water bodies that are connected to the sea. Tidal influenced water bodies means seas, bays, estuaries, creeks, backwaters, lagoons, etc.
- The land area falling between the 'hazard line' and 500 m from HTL on the landward side.
- The land area between HTL and Low Tide Line (LTL) – termed as the intertidal zone.
- The water and bed area between the LTL to the territorial water limit (12 nautical miles) in case of sea and water area between the LTL to LTL in case of tidal influenced water bodies.

To steer and regulate land use at the coast, the CRZ Notification, 2011 establishes a regulatory 'three-

⁸¹ See Ministry of Environment and Forests note above.
⁸² See Para 7, 'Classification of CRZ'.

step' approach. First, it generally prohibits and permits specific activities in the entire CRZ area (these provisions include either exceptions to prohibited activities or grants permission for activities with specific conditions respectively).⁸³ Second, it provides a more specific regime by continuing the demarcation of the CRZ area into different zones and by defining what kind of activities are prohibited and permitted in these areas, namely, in CRZ-I to CRZ-IV as well as two other specific zones.⁸⁴ Third, it further includes provisions regarding the clearance of activities permissible under the Notification.⁸⁵ Apart from the question of which activities are allowed and under what conditions, it provides rules on the preparation of Coastal Zone Management Plans⁸⁶ as well as on the enforcement of the CRZ Notification.⁸⁷

4.4 Activities Generally Prohibited in the Coastal Regulation Zone

Paragraph 3 of the CRZ Notification, 2011 establishes a general ban on the establishment of large-scale industries and specifically harmful activities in coastal areas. It prohibits, inter alia, the setting up or expansion of new or existing industries, waste disposal and effluent mechanisms, port and harbor projects, land reclamation, as well as the dressing or alteration of sand dunes, hills, and other natural features including landscape change.

This list acknowledges important pressures on India's coasts and its nearshore marine environment. The general ban, however, is qualified by far reaching exceptions attached to every individual type of undertaking or activity. The list of exceptions includes particularly those activities of interest to the energy industry, as well as those of the transport and tourism sector.⁸⁸

⁸³ See CRZ Notification 2011, note 32 above at Para 3 and 4.

⁸⁴ See CRZ Notification 2011, note 32 above.

⁸⁵ *Id.* Para 4.2, 'Procedure for clearance of permissible activities'.

⁸⁶ *Id.* Para 5.

⁸⁷ *Id.* Para 6.

⁸⁸ *Id.* Para 3(i),(a),(b),(c),(d), Para 3(ii), (a),(b), Para 3(iv),(a),(c), Para 3(v),(c), Para 3(x),(a),(b).

4.5 Activities Generally Permitted Under the CRZ Notification, 2011

Paragraph 4 of the CRZ Notification, 2011 lays down those activities that are generally permitted within the CRZ areas. However, it subjects these activities to prior clearance from the concerned state authority.⁸⁹ Activities that are permitted and require clearance include, for example, projects that require waterfront and foreshore facilities, specific housing, construction or operation schemes, (as specified in CER-II to CRZ-IV), as well as various types of projects listed in the CRZ Notification that also attract clearance under the Environmental Impact Assessment (EIA) Notification, 2006.⁹⁰

Other large-scale or high impact activities are, in principle, allowed but require clearance from the MoEF.⁹¹ Activities include, inter alia, construction activities relating to projects of the Department of Atomic Energy or Ministry of Defence, and the laying of pipelines, conveying systems, and transmission lines. Other activities include the exploration and extraction of oil and natural gas and all associated activities and facilities, mining of rare minerals, and development of facilities for generating power by non-conventional energy sources, and desalination plants.

4.6 Permission and Restriction of Activities in the Different CRZ Areas

In addition to the general bans and permissions applicable to the entire CRZ, the CRZ Notification, 2011 adds area-specific regimes. Coastal stretches falling within the scope of the CRZ area can be defined into one of six categories of coastal habitats.

CRZ-I includes the 'areas that are ecologically sensitive and the geo-morphological features which play a role in the maintaining the integrity of the coast' for example, mangroves, corals and coral reefs

and associated biodiversity, sand dunes, etc.⁹² In addition, CRZ-I also includes the area between Low Tide Line and High Tide Line. The 2011 Notification states that the development or construction activities in CRZ-I shall be regulated by the concerned CZMA in accordance with the following norms:⁹³ No new construction shall be permitted in CRZ-I except projects relating to the Department of Atomic Energy and other major infrastructure projects such as, for example, pipelines, construction of trans-harbor sea link and roads, and the Green Field Airport (already permitted) at Navi Mumbai. Some minor projects such as the exploration and extraction of natural gas, and the construction of dispensaries, schools, public rain shelters, are permitted between the Low Tide Line and High Tide Line in areas which are not ecologically sensitive.

CRZ-II includes the areas that have been developed up to or close to the shoreline. 'Developed area' refers to that area within the existing municipal limits or in other existing legally designated urban areas that are substantially built-up and have been provided with drainage and approach roads and other infrastructural facilities, such as water supply and sewerage mains. Activities and structures permitted in CRZ-II are, for example, the construction or reconstruction of buildings, facilities for receipt and storage of petroleum products, and notified ports.

CRZ-III includes those areas that are relatively undisturbed and do not fall under Category I or II. It also includes rural and urban areas that are not substantially developed. For these areas, the Notification establishes a 'No Development Zone' within the area up to 200 m from the HTL on the landward side in the case of seafront and 100 m along tidal influenced water bodies or width of the creek, whichever is less.⁹⁴ In these areas, no construction shall be permitted except for the repair or

⁸⁹ *Id.* Para 4(i).

⁹⁰ Environment Impact Assessment Notification, 2006 S.O. 1533, Ministry of Environment and Forests, Gazette of India, Extraordinary, Part-II, and Section 3, Sub-section (ii) dated 14th September 2006.

⁹¹ See CRZ Notification 2011, note 32 above at Para 4(ii).

⁹² Such as areas under the provisions of the Wild Life (Protection) Act, 1972; The Forest (Conservation) Act, 1980; The Environment (Protection) Act, 1986 and Biosphere Reserves.

⁹³ See CRZ Notification 2011, note 32 above at Para 8, 'Norms for regulation of activities that are permissible under this Notification'.

⁹⁴ The 'No Development Zone' does not apply in areas falling within any notified port see, CRZ Notification 2011, note 32 above at Para 8(ii), III (i).

reconstruction of existing authorised structures. However, the construction or reconstruction of dwelling units of traditional coastal communities (including fisherfolk) may also be permitted. This (qualified) general ban is followed, again, by an extensive list of activities which may be permitted in the 'No Development Zone'. Projects besides small-scale projects include, inter alia, agriculture, horticulture, gardens, projects relating to the Department of Atomic Energy, the mining of rare minerals, salt manufacture from seawater, and facilities for generating power by non-conventional energy sources, bridges, and roads. In addition, projects such as the development of designated vacant plots for the construction of hotels or beach resorts for tourists, facilities for receipt and storage of petroleum products and liquefied natural gas are permitted in the area between 200 m to 500 m so long as they are within the ambit of traditional rights and customary usage.

CRZ-IV includes the water area from the Low Tide Line to twelve nautical miles on the seaward side. It also includes the water area of the tidal influenced water body from the mouth of the water body where it meets the sea up to the influence of the tide. In CRZ-IV areas, activities impugning on the sea and tidal influenced water bodies no untreated sewage, effluents, ballast water, ship washes, as well as solid waste from 'all activities' shall be let off or dumped. Coastal towns and cities are required to formulate sewage treatment plans and implement them within a period of one year. Traditional fishing rights of local communities shall not be restricted.

As already indicated above, the Notification introduces other additional zones.⁹⁵ According to Section 7, paragraph V, these areas include: a) any CRZ area within municipal limits of Greater Mumbai; b) the CRZ areas of Kerala including the backwaters and backwater islands; and c) the CRZ areas of Goa, as well as 'Critically Vulnerable Coastal Areas' (CVCA) such as Sunderbans region of West Bengal and other ecologically sensitive areas identified as under Environment (Protection) Act, 1986. The Notification also specifies the activities that are permissible within these areas such as, for

⁹⁵ *Id.* Para 7(v).

example, road construction, solid waste disposals, slum rehabilitation schemes, and redevelopment of dilapidated.

4.7 Conditions for Clearance and Post Clearance Monitoring

In contrast to the 1991 CRZ Notification, the 2011 Notification establishes a specific procedure for obtaining clearance for the various permitted development activities in coastal areas.⁹⁶ The Notification specifies that a concerned state or the relevant Union Territory's Coastal Zone Management Authorities (CZMA) is in charge of assessing the proposed projects in their respective coastal zones. For those activities subject to a clearance obligation, the Notification requires the proponents to submit, inter alia, the following documents:

- Detailed information regarding the physical location, nature, and environmental impact of the activity.⁹⁷
- Comprehensive Environmental Impact Assessment (EIA).
- Disaster and risk assessment as well as a management plan.
- CRZ map that indicates all CRZ-I, II, III and IV and other notified ecologically sensitive areas.
- 'No Objection Certificates' from the concerned State Pollution Control Board.

The concerned authority is required to examine the documents in accordance with the approved CZMP and the CRZ Notification⁹⁸ and then make recommendations to the State Government or the MoEF to proceed for the further consideration of the proposed project. The clearance accorded to the projects is valid for five years.⁹⁹

⁹⁶ *Id.* Para 4.2 'Procedure for clearance of permissible activities'.

⁹⁷ *Id.*

⁹⁸ *Id.* Para 4(2)(ii).

⁹⁹ *Id.*

A post clearance mechanism that requires developers to submit half yearly compliance reports has also been established.¹⁰⁰ All such compliance reports submitted by the project proponent shall be made public. Furthermore, in order to maintain transparency in the working of the CZMA, it shall be the responsibility of the CZMA to create a dedicated website and post the minutes, decisions, clearance letters, violations (and official responses), court matters, and the approved CZMP of the respective State Government or Union Territory.

4.8 Preparation of Coastal Zone Management Plans

The Coastal Regulation Zone Notification envisages preparation of Coastal Zone Management Plans (CZMP) by all the coastal states. These plans guide the regulation of the development of those activities listed in the CRZ Notification. State Governments and Union Territories are required to prepare CZMPs for their respective coastal areas. Paragraph 5 of the CRZ Notification, 2011 provides that the CZMPs may be prepared with the help of reputed and experienced scientific institution(s) or agencies, and in consultation with the concerned stakeholders.¹⁰¹ Each CZMP shall be submitted to the concerned CZMA for appraisal.¹⁰² Then the CZMA of the State Government or Union Territory shall submit the draft CZMP to the MoEF along with its recommendations and include suggestions and objections from stakeholders on the CZMP within a period of six months.¹⁰³ The MoEF shall thereafter consider and approve the CZMP.¹⁰⁴ All development activities listed in the Notification shall be regulated within the framework of such approved CZMPs.¹⁰⁵ The CRZ Notification also includes guidelines for the preparation of CZMPs in Annexure I.¹⁰⁶

¹⁰⁰ *Id.* Para 4.2(v) 'Post-clearance monitoring'.

¹⁰¹ *Id.* Para 5(ii).

¹⁰² *Id.* Para 5(iii to vii).

¹⁰³ *Id.* Para 5(viii).

¹⁰⁴ *Id.* Para 5(ix).

¹⁰⁵ *Id.* Para 5(x).

¹⁰⁶ *Id.* Annexure I – Guidelines for Preparation of Coastal Zone Management Plans.

5 ASSESSMENT

The following section will analyze the positive developments and the weaknesses of the CRZ Notification as well as identify steps to improve existing deficits.

5.1 Positive Developments

This article made clear that the CRZ Notification went through a long and cumbersome political, legislative, and judicial process that shaped its present content and design. In pursuing its overall goal the Notification came a long way responding to the major flaws inherent to its 1991 version. Compared to the CRZ Notification, 1991 the present version now includes more specific measures for particularly vulnerable areas, clearance procedures for permitted projects, monitoring schemes, targets major land-based pollutants, and also increasingly recognises the rights of traditional coastal communities.

From a general perspective several aspects of the CRZ Notification, 2011 can be valued positively. First, the Notification's regulatory approach to ban specific activities, and permit others but subject the latter to a specific permit regime is simple and clear. Complementing this basic approach with an area specific regime also acknowledges the special conditions, developmental stages, and conservation needs of specific coastal areas. Second, the CRZ Notification, 2011 now covers areas extending up to 12 nautical miles into the sea. This adds to the Notification's scope areas that are highly affected by and inextricably linked to land based coastal activities. Third, the Notification also acknowledges, at least to some extent, the need to coordinate and align project clearance with other administrative decision-making bodies and legislative requirements. As described above, the clearance mechanism requires that project proposals that are subjected to, inter alia, comprehensive EIAs and have to include 'no objections certificates' from the concerned State Pollution Control Board. Fourth, the requirement provided in the post-clearance mechanism to make specific project information publicly available bears

the potential to promote effective implementation through increasing transparency. The Notification also includes a mechanism that provides structure for strategic planning of coastal activities. Paragraph 5 and the guidelines in Annexure I of the CRZ Notification, 2011 requires that the Coastal Zone Management Plans are science based, that they target coastal hazards, and that they are based on stakeholder involvement, and are reviewed and approved by the MoEF. Coastal Zone Management Plans then form the basic framework by which all development activities will be regulated. Finally, it should also be valued positively that the Notification acknowledges to some extent the special situation of local coastal communities.

Despite all these positive aspects and developments, several elements and regulatory approaches of the CRZ Notification need to be critically assessed and countermeasures considered.

5.2 Targeting the Lack of Orientation

In general, planning requirements under the CRZ Notification remain somewhat open ended and unspecific; the CRZ Notification lacks a clear vision of how and to what extent threatened coastal areas need to be protected and which measures are actually required¹⁰⁷ Accordingly, it does not provide a coherent and well-structured legislative framework to plan and govern developments in India's coastal zones. It particularly lacks an overall vision of what good environmental status in coastal areas could and should be. It does neither establish clear standards of protection, neither provides plain objectives and principles to steer administrative decision making, nor does it describe specific programs to achieve or maintain that standard of protection.

It is argued here that Indian coastal management and planning should first and foremost aim at identifying a goal to strive for. To guide environmental and particularly sectoral legislation, the governing bodies need to decide what kind of environmental status should be achieved or maintained (reference level).

¹⁰⁷S.M. Marale and R.K. Mishra, 'Status of Coastal Habitats and its Management in India', 1/1 *International Journal of Environmental Protection* 31, 45 (2011).

Such a reference level should be based on the assumption that growth and usage of coastal areas must be commensurate with the carrying capacity of the ecosystem. In addition, ecosystem requirements need to be considered. Several components of an integrated approach to coastal and marine management follow from these premises.¹⁰⁸

- There needs to be a scientific assessment of the state of the coastal and marine environment.¹⁰⁹
- Sustainable use and exploitation limits that take into account carrying capacity of the ecosystem as well as 'good environmental status' need to be defined.
- Measures that effectively protect the coastal environment to maintain ecosystems, guarantee long-term benefits from ecosystem services, and finally achieve and maintain good environmental status must be adopted.
- Sectoral laws affecting coastal and marine areas need to be adapted to respect measures and objectives adopted under environmental legislation.

Implementing these steps, legislation should include clear and judicially reviewable principles and concepts which effectively guide administrations. Accordingly, normative concepts such as 'sustainable exploitation', the 'precautionary approach', and the

¹⁰⁸The model has been developed in the context of fisheries regulation. Here it has been adapted to ecosystem services in general. See T. Markus, 'Towards Sustainable Fisheries Subsidies – Entering an New Round of Reform Under the Common Fisheries Policy', 34/6 *Marine Policy* 1117, 1124 (2010), T. Markus, S. Schlacke and N. Maier, 'Legal Implementation of Integrated Ocean Policies: the EU's Marine Strategy Framework Directive', 26 *International Journal of Marine and Coastal Law* 21, 32 (2011) and T. Markus, 'Changing the Base: Legal Implications of Scientific Criteria and Methodological Standards on What Constitutes Good Marine Environmental Status', 1 *Transnational Environmental Law* 1, 21 (2013).

¹⁰⁹The CRZ Notification 2011 currently fails to take into account the impacts of anthropogenic development on the health of the coastal ecosystem. See Jorge, note 7 above.

'ecosystem approach'¹¹⁰ should be made effective. To this end, law governing coastal and nearshore areas must provide them with some specific features. First, the legislator should provide the normative concepts with a legal effect, i.e. make them legally binding principles. Principles are understood here as those norms that have legal effect, are committed to an objective, and are open for balancing against other legal principles.¹¹¹ By contrast, policies are not intended to be binding.¹¹² Laws must then provide clear priorities to weigh the competing objectives of sustainability, i.e. economic, environmental and social objectives, as well as clearly explain how the precautionary and ecosystem approaches relate to these economic and social conditions. In that regard, laws must acknowledge that there usually is a limit where the level of pressure (use, exploitation or pollution) jeopardises the future existence of ecosystems or resources. Accordingly, activities are no longer regarded as sustainable when they exceed the critical point at which ecosystems or resources are threatened by a substantial decline or collapse. Since any meaningful application of the precautionary approach requires the avoidance of critical use and exploitation levels, this reference point must also serve as a reference point for the precautionary approach. A safety margin or precautionary buffer that takes into account uncertainties, especially the unpredictable nature of ecosystems, must be factored into the sustainable exploitation rate. With regard to the inclusion of the ecosystem approach, it must be acknowledged that the concept is still far from having a clear content. Nevertheless, the ecosystem approach acknowledges the need to take into account the effects of individual activities on the ecosystem as a whole. To give substance to the ecosystem approach, management laws shall include clear and judicially reviewable legal commitments to reduce the overall pressure on coastal and marine ecosystems and protect habitats and species.

110 P. Birnie, A. Boyle and C. Redgwell, *International Law & the Environment* 106, 210 (Oxford: Oxford University Press 3rd ed. 2009).

111 R. Alexy, *Theorie der Grundrechte* 71 (Frankfurt am Main: Shurkamp, 2nd ed. 1994) and G. Winter, 'The Legal Nature of Environmental Principles in International EC and German Law', in R. Macrory ed, *Principles of European Environmental Law* 11, 42 (Groningen: Europa Law Publishing, 2004).

112 See Winter, *id* at 13-15.

5.3 Increasing Clarity

Another point which needs to be addressed is that though, in principle, the regulatory structure of the Notification is rather simple, both clarity and accessibility are heavily confined by the wide use of vague legal terms and the very broad and far reaching exemptions to the general and area-specific restrictions. Accordingly, structure and content of the law must be made clear and simple.¹¹³ The use of clear, precise and comprehensible terms creates clarity and certainty regarding rights, duties and competences for those who implement the Notification and those who are affected by it. Regarding structure, the law should begin with general principles that guide decision-making bodies. With regard to complexity it should also be noted that the structure of the law must be self-explanatory and systematically sound. Future revisions should particularly avoid the current approach of adopting multi-layered exceptions which tend to make the law and particularly implementation intransparent.

5.4 Develop a Culture of Compliance

As stated above, the CRZ Notification has faced serious implementation deficits since its inception in 1991. Some traditional mechanisms that are widely deemed to foster compliance are public participation in the law-making process, transparency in the application process, access to courts for public environmental litigation, and adequate administrative capacities.¹¹⁴ Accordingly, rights and obligations for individuals or the public laid down in the Notification should have a clear and increasingly comprehensive content which is

113 G. Winter, 'Towards a Legal Clinic for Fisheries Management', in G. Winter ed, *Towards Sustainable Fisheries Law* 324 (Gland, Switzerland & Bonn, Germany: IUCN, 2009).

114 U. Berghöfer, 'Participation' in Development Thinking – Coming to Grips with a Truism and its Critiques', in S. Stoll-Kleemann and M. Welp eds, *Stakeholder Dialogues in Natural Resources Management, Theory and Practice* (Heidelberg: Springer, 2006) and I. Kapoor, 'Towards Participatory Environmental Management?', 63/3 *Journal of Environmental Management* 269, 279 (2001); I. Kolstad and A. Wiig, 'Is Transparency the Key to Reducing Corruption in Resource-Rich Countries?' 37 *World Development* 521, 531 (2009).

eventually enforceable in the courts (either by the administrations, private entities or third parties in public interest litigation).¹¹⁵

5.5 Protect the Rights and Usage of Traditional Coastal Communities

Finally, the coastal areas that have been customarily inhabited by traditional fishing communities are faced with challenges of large-scale industrial growth and development.¹¹⁶ Since the inception of the CRZ Notification, particularly fishing communities of several states have been trying to negotiate with the MoEF for the protection of their customary rights and representation in the decision-making process.¹¹⁷ To maintain social stability and promote distributional justice, local coastal communities should be assigned clearly drafted, specific use and property rights with regard to specific areas. Given that coastal communities often have established experience and practices to manage local ecosystems sustainably, in many cases assigning exclusive rights to local communities can also help to protect coastal ecosystems.¹¹⁸

coordinated approach to manage the increasing use and protection interests and requirements in India's coastal areas. The 2011 version of the Notification includes many basic concepts and approaches for a good legislative coastal management practice. However, the regulatory approaches are either not fully developed or else are extensively extenuated by broad or unsystematic exception clauses. In order to balance use and conservation interests sustainably, India must develop a clear vision of how its coasts should look, and by whom and by which means and measures this vision should be achieved. In addition, clear and judicially reviewable objectives, rules, indicators, and programmes of measures must be adopted and effectively implemented. Only where there is a clear reference point which is then operationalised by precise and judicially reviewable objectives and measures, other (sectoral) policies may be directed to contribute to an environmentally sound and sustainable coastal management. Hopefully the adoption of a law by the Parliament in the near future provides the opportunity to improve the CRZ Notification and thus help to prevent coastal degradation.

6 CONCLUSION

The development of the CRZ Notification from 1991 to 2011 basically reflects the demand for a

115 See for example, A.H. Desai and S. Muralidhar, 'Public Interest Litigation: Potential and Problems', in B.N. Kirpal ed, *Supreme but not Infallible – Essays in the Honor of the Supreme Court of India* 159 (New Delhi: Oxford University Press, 2000).

116 See Sharma, note 53 above and Special Correspondent, 'Pre-draft CRZ Notification Rejected', *The Hindu*, 18 June 2010, available at <http://www.thehindu.com/news/states/predraft-crz-notification-rejected/article470117.ece> and The National Fishworkers' Forum (NFF), 'Save the Coasts – Save the Fishers', available at <http://www.coastalcampaign.page.tl/Home.htm>.

117 See Sharma, note 53 above.

118 See E. Ostrom, *Governing the Commons: the Evolution of Institutions for Collective Action* (New York: Cambridge University Press, 1990).

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