2. REVIEW OF LITERATURE

- General
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REVIEW OF LITERATURE

Coastal ecosystem is very fragile ecosystem. Considering its important role, Ministry of Environment and forest, Government of India has passed regulation pertaining to coastal region of India. In 1991 Government of India issued notification which is known as Coastal Regulation Zone.

Coastal Zone is always on the forefront of civilization and has been by far the most exploited geomorphical unit of earth. It’s easy access and resourcefulness have always attracted human activities, but its complexity in understanding has led to misuse and abuse. In recent time, the coastal zone of world is a productive area, supporting wealth of living marine resources. Thus there is urgent need to conserve the coastal ecosystems and habitats by implementing the coastal regulation zone notification and integrated coastal zone management study. (Dr. R. B. Singh and S. S. Chauhan, 2004)

This law was meant to control and minimize impacts on sensitive ecosystems. The CRZ Notification is significantly comprehensive and clear in most respects, and can be classified as equal to and even better than laws of other maritime countries of the world. Nevertheless, it came under attack from various stakeholders. As such, there have been conflicts on the need for buffer zones, controversies about high tide line position, limits of tidal action in rivers, and doubts whether sand dunes deserve protection. Competition over limited coastal spaces, discordant views on crucial coastal issues, lack of political initiative, and deceptive enforcement of prevailing laws have resulted in a haphazard growth of coasts and infringements of coastal regulations. Unplanned development has resulted in significant alterations of landforms where sand dunes, in particular, have borne the brunt of human actions and are rapidly being eliminated. (A. Mascarenhas, G. Kalavampara 2005)

One of the objectives of this study is to ease Coastal Regulation Zone management. For the effective coastal regulation zone management it is important to understand it’s all aspects. According to Dr. M. Baba et. al. benefits of CRZ includes awareness on coast, conservation of traditional rights, control on industries, natural hazard protection, livelihood security. Failures of CRZ includes its arbitrary zone, mainly violated, no participation, too restrictive, goals undefined, no incentives and

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no enforcement. Areas of particular concern in CRZ are coastal municipalities and corporations, Coastal panchayats with population density more than 400 persons per sq. km., ports and harbors, notified tourism areas, mining sites, notified industrial estates, Special Economic Zones, heritage areas, notified archaeological sites under Protected Monuments Act, defense areas or installations and power plants. Facilities or Activities which requires access to the shoreline are port and harbors, including refueling facilities, dredging and reclamation, Fish landing sides, public toilets, lighthouses and light towers, beach tourism and water sports facilities, salt pans, mining of minerals other than beach sand, rocks, gravel and sea-shells, ship building and repair facilities, coastal protection structures, Hydrocarbon exploration and production, defence installations, discharge pipelines for treated effluent and swage, approach roads, railways, pipelines, power transmissions and distribution lines to various services mentioned above.

The coastal zone represents varied and highly productive ecosystems such as mangroves, coral reefs, sea grasses and sand dunes. These ecosystems are under pressure on account of increased anthropogenic activity on the coast, as a result of globalization. It is necessary to protect these coastal ecosystems to ensure sustainable development. This requires information on habitats, landforms, coastal processes, water quality, natural hazards on a repetitive basis. In India, remote sensing data, especially Indian Remote Sensing (IRS) data, having moderate to high spatial resolution, can be use to generate database on various components of coastal environment of the entire country. However, the moderate resolution data provide macro-level information on 1:250,000 and 1:50,000 scale about the condition of habitats, type of landforms and areas under erosion and deposition. The major advantage of remote sensing data is monitoring of change periodically. The combination of moderate and high-resolution data provided detailed coastal land use maps on the 1:25,000-scale for implementing coastal regulation measures. The classification accuracy can be achieved is 85 per cent or better at 90 per cent confidence level. Mangrove areas classified up to community level through contextual editing. Various zones of coral reef can be identified, however, species level information is not possible to generate using such data. The knowledge about bio-optical properties of water is vital for coral reef and sea grass bed monitoring.
Satellite data also provide useful information on the phytoplankton and suspended sediments. The information on phytoplankton and sea surface temperature (SST) can be used to predict potential fishery zones routinely. The information on sediments provides some insight into the movement of sediments along the coast. Satellite-derived information when integrated with the other collateral information through GIS can be used to select sites for aquaculture, zoning of coastal zone for regulatory purpose and assess possible impact of sea level rise. Realizing the value of the remote-sensing derived information, the state and central agencies responsible for the conservation of these ecosystems are increasingly adopting remote sensing data for their routine use. (S. Nayak, 2003)

There are some previous studies done on Coastal Regulation Zone of Gujarat state by ISRO and Bhaskaracharya Institute of Space Application Geo-informatics. Previous work includes coastal vegetation studies (S. Nayak, A. Bahuguna, 2001), zoning and monitoring of mangrove (D. Shah, A. Bahuguna, B. Deshmukh, S. Nayak, 2005). However, in present study very high spatial resolution data and multi temporal satellite data has been used.

Recently environment and forest department has published the CRZ. in 2011.

Ministry of Environment and Forests Announces Coastal Regulation Zone (CRZ), 2011 and Island Protection Zone, 2011


Following is the full text of Minister’s statement:

“After a eighteen-month long process, the CRZ Notification, 2011 is being formally notified and published today. This replaces the CRZ Notification, 1991. In addition, for the very first time an Island Protection Zone Notification, 2011 is being notified and published covering Andaman and Nicobar Islands and Lakshadweep.
Both these new Notifications reconcile three objectives: (i) protection of livelihoods of traditional fisherfolk communities; (ii) preservation of coastal ecology; and (iii) promotion of economic activity that have necessarily to be located in coastal regions.

Apart from codifying the 25 amendments that were made to CRZ Notification, 1991 between 1991-2009, the CRZ Notification, 2011 has several new features.

- It has special provisions for Goa, Kerala, Greater Mumbai and critically vulnerable coastal areas (CVCAs) like Sunderban Mangrove Area, Chilka and Bhitarkanika (Orissa), Gulf of Khambat and Gulf of Kutchh (Gujarat), Malwan (Maharashtra), Karwar and Kundapur (Karnataka), Vembanad (Kerala), Coringa, East Godavari and Krishna Delta (Andhra Pardesh), Gulf of Mannar (Tamil Nadu).
- Clear procedures for obtaining CRZ approval with time-lines have been stipulated along with post-clearance monitoring and enforcement mechanisms.
- Water area upto 12 nautical miles in the sea and the entire water area of a tidal water body such as creek, river, estuary, etc would now be included in the CRZ areas, without imposing any restrictions of fishing activities.
- The concept of a Coastal Zone Management Plan (CZMP), to be prepared with the fullest involvement and participation of local communities, has been introduced.
- The concept of a hazard line to be demarcated over the next five years has been introduced to protect life and property of local communities and infrastructure along coastal areas.
- Measures have been put in place to combat pollution in coastal areas/coastal waters.
- The shorelines would be mapped through time-series satellite images with no foreshore development being permissible in high-eroding areas.
- The “no development zone” is being reduced from 200 metres from the high-tide line to 100 metres only to meet increased demands of housing of fishing and other traditional coastal communities.
Over the past 18 months, I have had public consultations on the new CRZ Notification in Goa, Mumbai, Kochi, Chennai and Puri. In addition, I have had five rounds of discussions with fishermen associations from across the country. The recommendations of an expert committee comprising of Dr. M.S. Swaminathan, Sunita Narain, Dr. Shailesh Nayak and Shri J.M. Mauskar submitted to the MoE&F in July 2010 have also been incorporated. This new CRZ Notification has been in the public domain in draft form since September 2010 and I have received a large number of suggestions that have been given due consideration.

I wish to state categorically that, barring cases of fishermen families, violations of CRZ Notification, 1991 will not be condoned or regularised with CRZ Notification, 2011 coming into force. Directions are being issued early next week by the MoE&F under Section 5 of the Environment Protection Act, 1986 to all State/UT Coastal Zone Management Authorities to (i) identify all such violations within a period of four months from today using latest appropriate maps, satellite imagery and information technology; and (ii) initiate necessary action in accordance with the Environment Protection Act, 1986 within a period of four months thereafter. Details of all such violations and action taken will be listed on the website of the CZMA concerned as well of the MoE&F. Action already initiated in the cases where violations have been established will continue unimpeded.

An important recommendation of the expert committee headed by Dr. M.S. Swaminathan is that Government should enact a law to protect the traditional rights and interests of fishermen and coastal communities. This law would be somewhat along the lines of the Forest Rights Act, 2006. Fishermen associations have supported this recommendation. The MoE&F has already prepared such a draft law in this regard and put it in the public domain for comments and suggestions.

There has been a demand from fishermen associations that instead of having a Notification under Environment Protection Act, 1986, Government should enact a coastal zone regulation law to be passed by Parliament. A Notification does provide considerable flexibility to the Executive but I do acknowledge and appreciate that a law passed by Parliament will enhance public confidence and trust that amendments are introduced after adequate debate and discussion. I have reassured the fishermen
associations that I am personally in favour of such a move and that I will attempt to take it forward.

In the end, I would like to reiterate why the CRZ Notification is so important. India has a long coastline of 7,500km, ranging from Gujarat to West Bengal, and two island archipelagos. Our coastal ecosystems provide protection from natural disasters such as floods and tsunamis to the 250 million people who live in our coastal areas. Coastal waters provide a source of primary livelihood to 7 million households. Our marine ecosystems are a treasure trove of biodiversity, which we are only beginning to discover and catalogue. Thus our coastline is both a precious natural resource and an important economic asset, and we need a robust progressive framework to regulate our coast.

The CRZ Notification, 2011 demonstrates that the MoE&F is conscious of and alive to the need to bring about modifications in laws and regulations to ensure a demonstrably better balance between the equally urgent imperatives of faster economic growth and deeper environmental conservation.”

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