Integrated Coastal Zone Management has assumed a lot of significance during recent years because ICZM is essentially a "production function" that combines "inputs" (labour, natural resources, capital, time) to produce desired outputs. Coastal areas are rich in resources and also attract large population. When population swells and aspirations for economic growth and development become stronger, pressure to overexploit coastal resources intensify. Faster pace of development and overexploitation of resources create many issues like pollution, environmental degradation and conflicts etc., that require remedial actions.

There are two main approaches to properly undertake the remedial actions and these are categorised as non-regulatory approach and regulatory approach respectively. In the first category implementation of management plans becomes difficult because of coordination problems among the agencies. For the second category, law and regulations provide boundaries for acceptable and non-acceptable behaviour and governments impose a command-and-control technique by the use of regulations.

In India, coastal regulations are imposed in the form of CRZ act which became effective with the publication of Coastal Regulation Zone Notification in the Gazette of India (Extra Ordinary), Part II, Section 3 – Sub Section (ii) by the Union Ministry of Environment & Forests (Department of Environment & Forests) at New Delhi on 19th February 1991. The act was amended by a notification dated 18.08.1994 and by the Supreme Court judgment dated 18.04.1996 and is issued through a notification under Environment (protection) Act 1986.

The act declares the coastal stretches of seas, bays, estuaries, rivers and backwaters which are influenced by tidal action (in the landward side) up to 500 meters from the High Tide Line (HTL) and the land between the Low Tide Line (LTL) and the HTL and the HTL as Coastal Regulation Zone, and imposes with effect from the date of notification, specified restrictions on the setting up and expansion of industries, operations or processes etc., in the said Coastal Regulation Zone (CRZ).

The HTL is defined as the line on the land up to which the highest water line reaches during the spring tide and shall be demarcated uniformly in all parts of country by the demarcating authority so authorised by the Central Government in consultation with the Survey of India.

In the Act, it has also been specified by a note that the distance from the High Tide Line shall apply to both sides in case of rivers, creeks and
backwaters and may be modified on a case by case basis for reasons to be recorded while preparing the Coastal Zone Management Plans. However, this distance will not be less than [100] meters on the width of the creek, river or backwater, whichever is less. The distance up to which development along rivers, creeks and backwaters is to be regulated shall be governed by the distance up to which the tidal effect of sea is experienced in rivers, creeks and backwaters, as the case may be and should be clearly identified in the Coastal Zone Management Plans.

The Act further elaborates the prohibited activities, regulation of permissible activities in the coastal zone, Procedure for monitoring and enforcement as well as classification of coastal stretches into four categories is also given in the act. The Prohibited Activities defined in para 2 of the act are:

i. Setting up of new industries and expansion of existing industries, except those directly related to water front or directly needing foreshore facilities;


iii. Setting up and expansion of fish processing units including warehousing (excluding hatchery and natural fish drying in permitted areas;

iv. Setting up and expansion of units/mechanism for disposal of waste and effluents, into the water course with approval under the water (Prevention and Control of Pollution) Act 1974 and except for storm water drain;

v. Discharge of untreated wastes and effluents from industries, cities or towns and other human settlements. Scheme shall be implemented by the concerned authorities for phasing out the existing practices, if any, within a reasonable time period not exceeding three years from the date of this notification;

vi. Dumping of city or town waste for the purpose of land filling or otherwise; the existing practice, if any, shall be phased out within a reasonable time, not exceeding three years from the date of this notification;

vii. Dumping of ash or any waste from thermal power stations;

viii. Land reclamation, building or disturbing the natural course of sea water with similar obstructions, except those required for control of coastal erosion and maintenance or cleaning of waterways, channels and ports and for prevention of sand bars and also except for tidal regulators, storm water drains and structures for prevention of salinity ingress and for sweet water discharge;
Mixing of sands, rocks and substrata materials, except for those rare minerals not available outside CRZ areas;

Harvesting or drawl of ground water and construction mechanism thereof within 200 m of HTL; in 200-500 m zone it shall be permitted only when done manually through ordinary wells for drinking, horticulture, agriculture and fisheries;

Construction activities in ecologically sensitive areas as specified in Annexure – I of this notification;

Any construction activity between Low Tide Line and High Tide Line except facilities for carrying treated effluents and waste water discharges into the sea, facilities for carrying sea water for cooling purposes, oil, gas and similar pipelines and facilities essential for activities permitted under this notification;

Dressing or altering sand dunes, hills, natural features including landscape charges for beautification, recreational and other such purposes, except as permissible under this notification.

The Act continues in the 3rd para for regulation of permissible activities and states that all other activities except those prohibited in para 2 above will be regulated. In the 4th para procedure for monitoring and enforcement is specified. It states that “Ministry of Environment & Forests and the Government of State or Union Territory and such other authorities at the State or Union Territory level, as may be designated for this purpose shall be responsible for monitoring and enforcement of the provisions of this notification within their respective jurisdictions”.

Finally, the act provides coastal area classification and development regulations. For regulating development activities, coastal stretches within 500 m HTL on the landward side are classified into four categories, namely CRZ I, II, III & IV. The act guidelines are provided for the development of beach resorts/hotels in the designated areas of CRZ III for temporary occupation of tourists/visitors with prior approval of the Ministry of Environment & Forests.

The main guidelines of classification in to the four categories specified above are as follows:

- **CRZ-I**: Area between the LTL and HTL falls under the CRZ-I category. Since these areas are ecologically sensitive and important in the context of national parks/ marine parks, sanctuaries, reserve forests, wildlife habitats, mangroves, reefs, breeding and spawning fish and other marine life, natural beauty/historical heritage, rich genetic diversity, etc., this has been declared as no development zone. But this zone has been permitted to provide facilities for carrying treated effluents and wastewater discharges into the
sea, facilities for carrying sea water for cooling purposes, oil, gas and similar pipelines, etc.

- **CRZ-II**: CRZ-II includes the areas that have already been developed up to or close to the shore line. For this purpose, "developed area is referred to as the area within which are the municipal limits or in other legally designated urban areas which are already substantially built up and which has been provided drainage and approach roads, and other infrastructural facilities such as water supply and sewage."

- **CRZ-III**: These are the areas that are relatively undisturbed and those which do not belong to either CRZ-I or CRZ-II. This includes coastal zone in rural area (developed and undeveloped) and also areas within municipal limits or other legally designated urban areas which are not substantially built up.

  In CRZ-III areas, up to 200 meters from the HTL is earmarked as "No Development Zone". No construction shall be permitted within this zone except for repairs of existing authorized structures not exceeding floor space index (FSI) etc. However, the following usages are permissible in this zone: agriculture, horticulture, gardens, pastures, parks, playfields, forestry and salt manufacture from seawater.

  Construction/re-construction of dwelling units between 200 meters to 500 meters of HTL can be permitted so long as it is within the ambit of traditional rights and customary uses such as existing fishing villages and Gothans.

- **CRZ-IV**: These are the coastal stretches in the Andaman and Nicobar, Lakshadweep-, and small islands except those designated as CRZ-I, CRZ-II and CRZ-III. Under this zone, depending upon the merit of the proposed projects which have eco-friendly approach, permission is given after ascertaining EIA and EMP studies.

  Keeping the principles of Integrated Coastal Zone Management for smooth implementation of coastal planning, a 12 member National Coastal Zone Management Authority has been constituted on 26.11.98 under EPA (Environmental Protection Act). On one side, the authority has powers to take action against those who violate EPA and on the other side it can examine proposals for change and modification in the classification of CRZ areas in consultation with 13 independent state level authorities. National authority also considers specific recommendations received from state level authorities to finalise CZMP.

  Recently, the Union Ministry of environment and forests has appointed a committee composed of scientists and chaired by former Mumbai municipal commissioner to revamp the CRZ act to make it more region specific. Modifications recommended in the report suggest that a blanket 500 meters
buffer along the coastline all over the country is too strict. The committee has suggested a scientific survey of the country, on the basis of which the rules could be modified to be more flexible to local climatic conditions and physical features. It has also been suggested that more powers should be vested with state and local authorities rather than Union ministry.

The example of the CRZ act confirms that it is necessary to adopt the appropriate policy, legal and institutional framework to attain sustainable and integrated use of the resources.