COASTAL ZONE MANAGEMENT ON ADMINISTRATIVE ASPECT

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ABSTRACT:

Coastal Nations have particular interest in safeguarding their coastlines. India has a coastline of about 7,500 kilometres of which the mainland accounts for 5,400 kilometres, Lakshadweep coast extends to 132 kms and Andaman and Nicobar Islands have coastline of about 1,900 kms. India is one of the leading coastal nations in the world. Coastal zones also play an important role because it is a meeting point for land, sea, and inland water. It is defined from a geomorphological, biological, and juridical point of view. Coastal zones cover with coastal ecosystems like mangroves, coral reefs, sea grasses, salt mares, sand dunes etc. Coastal zones are to be protected to prevent biodiversity and ecological environment but due to the increased development of harbours and urban centres in coastal belt led to the degradation of natural habitat and eco system. `Pollution from municipal wastes, deadly chemicals and effluents increased. Many cases started arising one of the important cases was the construction of harbour in Pondicherry in 1989 in which 8 kms of beach was diapered and 30 kms of Pondicherry and neighbouring coastal lines of Tamil Nadu seems to be drastically eroded. In order to restore the beach, The PondyCAN also formulated many policies and plans for restoration. Where the role of administration played a vital role. In order to regulate the condition of coastline activities they started Coastal Regulation Zone (CRZ) notification in the year 1991. It lays down procedure for coastal zone protection. So, this article studies the aspects related to Coastal Zone Management, its impact on environment, role of administration in regulating coastal development. steps taken to prevent the eradication, challenges faced in balancing environmental and ecological interest.

Keywords: Coastal Zone Management, biodiversity, Coastal Regulation Zone (CRZ), pondyCAN, harbour, Pondicherry, coral reefs, Environment Protection Act.

INTRODUCTION:

We all love nature and the people like to go to beaches for recreation. All these factors will have to be considered and coastal lines must be protected and maintained. In order to avoid building of new industries, harbours, extension of industries or any other construction which is going to affect the soil, the salinity of water, aquatic creatures etc. The Coastal Zone Management (CZM) was formulated in the year 1991 for the regulation of coastline activities. Many committees were also formed after the big incident which was happened in Pondicherry where the beach was disappeared because of the construction of harbour where more than 10 fishing villages were lost, 7000 families lost their livelihood etc. So pondyCAN (Citizen Action Network) took initiative in the year 2007, PondyCAN believes that the issue needs to be studied carefully and policies need to be formulated to allow economic development while at the same time protecting the environment and well-being of the coastal areas and communities. So, in order to restore the beach promenade, the role of administration has played a major role in protecting the coastal zones. Ministry of Environment and Forest to handle CZM, National Board for Sustainable Coastal Zone Management and National and State /Union Territory level CZM authorities. So, this article covers the aspect of how Coastal Zone Management plans are administered, challenges its impact on environment, role of administration in regulating coastal development. steps taken to prevent the eradication, challenges faced in balancing environmental and ecological interest.

WHAT IS COASTAL ZONE MANAGEMENT?

The legal regime of coastal management in India came to force in the year 1991. The Central government issued the Coastal Regulation Zone (CRZ) Notification by virtue of its power under Environment Protection Act - (EPA), to take all measures that are necessary and expedient for the purpose of protecting and improving the quality of the environment.[1] The CRZ Notification declares limits of, and prohibition in coastal regulation zones. It highlights the regulation of permitted activities and classifies the zones into four categories:

1. CRZ -I (Ecologically sensitive)

[1] The Environment (Protection)Act 1986, s3(1)

2. CRZ -II (Built up area)

3. CRZ - III (Rural Area)

4. CRZ -IV (Water area which includes the water areas up to 12 Nautical miles (Nm) of the territorial waters and the tidal influenced water bodies).

CZMP – COASTAL ZONE MANAGEMENT PLANS:

The CRZ Notification imposes on the coastal states and the union territories, the responsibility of preparing coastal zone management plans (CZMPs). The states and the union territories are required to identify their own CRZ. The plans must be approved by the central government. After all theses the responsibility to regulate the regulatory powers of developmental activities and to exercise them in accordance with the guidelines in the CRZ Notification. The responsibility of monitoring and enforcing are on the Ministry of Environment and Forest, government of the state or union territories, such other authorities which are created for that purpose.[2]

PHYSICAL LIMITS OF ZONES:

A Coastal Regulation Zone (CRZ) consists of coastal stretches of seas, bays, creeks, rivers, and backwaters which are influenced by tidal action. They extend up to 500 meters from the High Tide Line (HTL). The land between the Low Tide Level (LTL) and High Tide Level (HTL) is declared as Coastal Regulation Zone (CRZ). The line up to which the highest water flow reaches the land during the spring tide is known as the HTL. The distance from the HTL shall apply to both sides in case of rivers, creeks, and backwaters. On sufficient reasons to be recorded, this can be modified on the case-to-case basis in the Coastal Zone Management Plan (CZMP) of the states or union territories. However, the distance shall not be less than 100 meters or the width of the creek, river, backwater, whichever is less. The distance up to which the tidal effect of the sea is experienced, governs the regulation of development. This is clearly stated in CZMP – Coastal Zone Management Plan.

[2]Sriganesh Jeygopal, Management of Coastal Erosion Along Pondicherry Coast, October 2014

PROHIBITIONS AND EXCEPTIONS ACCORDING TO Coastal Zone Management-(CRZ) NOTIFICATION:

The CRZ Notification lays down not only certain prohibitions but also exceptions to the prohibition;

- Setting up of new industries and expansion of existing are prohibited. However, projects of the department of atomic energy and non-polluting industries in the field and other services in the CRZ of special economic zone (SEZ) are not prohibited.

- Some, desalination plants and storage of non-hazardous cargo such as edible oil, fertilisers, and food grain within notified ports.

- Transfer of hazardous substance from ships to ports, terminals and refiners and vice versa are allowed.

- Facilities for receipt of re-gasification which may be permitted other than CRZ-1 which consist of ecologically sensitive and important areas.

- There is total prohibition of dumping ash or any wastes thermal power stations.

- Land reclamation or such other acts disturbing the natural course of sea water are allowed only for the purpose of construction of ports, harbours, jetties, bridges, and other facilities. Mining of sands, rocks and other substrata minerals are not available outside CRZ is prohibited.[3]

REGULATION OF PERMISSIBLE ACTIVITIES: ENVIRONMENTAL CLEARANCE:

All permissible activities are regulated by mechanism. The assessment is to be completed within the period of 90 days from receipt of requisite document and data from the project authorities the decisions can be conveyed within 30 days. Clearance shall be valid for 5 years from the

[3] P Leela Krishnan, Environmental Law in India, LexisNexis, 3rd ed 2008.

commencement or operation. Even the courts in India have authority to scrutinise various aspects of Coastal Zone Management.

MAJOR ISSUE IN WHICH CZM PLAYED AN IMPORTANT ROLE:

"PONDICHERRY BEACH DISSAPPERED" HOW DID THE CZM ADMINISTERED THE ISSUE AND WHAT ARE THE CRUCIAL STEPS TAKEN BY THEM TO RESTORE THE BEACH BACK?

History:

Puducherry is popularly known as "French Riviera of India" It is gifted with abundant scenery, mesmerising beaches, tree lined boulevards, colonial heritage buildings and spiritual legacy etc. The Pristine coastline of Puducherry which is the lifeline of this small coastal towns is facing significant erosion over the last three decades, which has threatened development and resulted in substantial protection works. As on date1989, eight km length of the coastline is protected by seawall and groyne field. The beautiful historical beach in front of the town has disappeared, leaving only the rock wall which prevents the access to the seaside, and is out of harmony with the city's tourism aspirations. Soon we lost our entire beach threatening to eat into the infrastructure," said Probir Banerjee, president of Pondicherry Citizen's Action Network (pondy CAN), a Puducherry based environmental Organisation. Finally, NIOT implemented its project, which has borne fruits he added. Hence, the restoration of the beaches has become one of the top priorities for the Puducherry Government.

How did the beach Vanish?

Things started to change when the Centre was giving funds to various state governments to build harbours and ports. Harbour construction started in 1989. According to Banerjee, when the harbour was proposed, the Central Water and Power Research Station (CWPRS) knew longshore drift will be affected. Hence in the design document, dredging of sand – sand bypass system- was a part of the project. As per it, sand must be regularly dredged from the south of the harbour and pumped into the north to ensure that beach does not disappear. But the same was not carried out and beach vanished completely within next few years.

As per 2011 report and National Centre for Sustainable Coastal Management concluded that the "shoreline of Puducherry has undergone high erosion on a long-term basis. The coast adjacent to the south break water, sediments are trapped on the southern side of the breakwater and as a result there is no net sediment movement towards the north of the movement that is Puducherry port, causing erosion on the north breakwater.

HARBOURS OF TROUBLE:

It was Schiavina who spotted the root of the problem in the construction of the harbour. When the new port proposal was advanced, PondyCAN went to court against it. The second harbour was shelved after much wrangling. Schiavina and others in Pondy CAN gathered information about the faulty design of the old harbour and developed plans for restoration effort. took years to win over the authorities. In 2017, India's Ministry of Earth Sciences and the National Institute of Ocean Technology agreed to implement the beach reconstruction project.

PROJECT ON RESTORATION OF BEACH:

The centre piece of the project, an artificial submerged reef, is the first of its kind in India. It is a 900-ton wedge shaped to divert water and sediment to the north of the beach. The project involves carrying out coastal protection measure along the Puducherry Beach near Gandhi Statue to solve the severe coastal erosion problem and restore the beach. To restore the lost beach along Puducherry a hybrid solution with two reefs and beach nourishment is proposed based on the learning from the experimental beach nourishment, process-based nourishments, and numerical studies.

PROPOSAL:

The proposed solution involves:

- Construction of one nearshore wedge reef opposite to the chief secretariat on the north end of Pondicherry town foreshore, with the crest at chart datum.

- Construction of one offshore reef placed at the south end at 300 m north of the pier, with the crest at 1m above chart datum.

- Sand nourishment using 450000 m3 of the sand between northern and southern reef along the coastline of Pondicherry town near Gandhi Statue.

THREE IMPORTANT COMPONENTS:

MAIN PURPOSE:

The main goal is to provide a mild barrier to sediment losses, thus enabling sand to move naturally to the north while slowing the losses of sand from the town foreshore.

The goal at the offshore reef at the south is to create a salient or tombolo which will hold the sand on the town beaches which also prevents the sand losses from the town to the port.

National Institute of Ocean Technology (NIOT) under the Ministry of Earth sciences has monitored the coastal processes responsible for shoreline changes from 2012 and has prepared a comprehensive shoreline Management Plan for Puducherry in May 2015.Based on the detailed

Hydrodynamic and coastal process studied carried out, NIOT has designed and implemented the project Restoration of Puducherry Beach. The project was commenced in march 2017 and construction of Northern reef and sand nourishment is under progress. M.V. Ramana Murthy, director of the National Centre for Coastal Research who designed and implemented this project sand nourishment.

The beach nourishment using 3 lakh cubic metres is implemented by the Puducherry government in two ways. They are also planning to cover existing stone walls with 1.5 lakh m3 of sand. The beach is already taking shape near the seawall and with the steady progress of the beach restoration project the city's coastline could soon travel back in time to its sandy past.[4]

PROJECT HAS NOT BEEN COMPLETED YET:

A wedge reef is just one component of the beach restoration project at Puducherry. The entire Coastal protection project involves three components- wedge reef, south reef, and beach nourishment component. The wedge component had to be implemented by the NIOT, which has been done. The rest two components are to be implemented by the stable government, but **delayed due to lack of funds**. All the three components combined are expected to protect the coastal stretch of about 1.5 to 2 kilometres.

As per news report, Lieutenant Governor Kiran Bedi has asked the union ministry of Earth sciences to "allocate adequate funds for extension of the beach on the southern side." But the ministry's role was limited to the wedge reef component of the project and the other components had to be implemented by the Puducherry Government. But the beach was restored back.[5]

After a year of the project's initiation, the first signs of the beach reappearance became visible. By the middle of 2021, nearly 200 feet of the shore was back, replete with resident lugworms and shells. Not only was the beach returning, but its composition was correct. People have returned to enjoy the beach pleasure. The next step is to extend the beach to Auroville,the experimental

[4] Success story of Restoration of Puducherry Beach available at https://dste.py.gov.in/PCCC/pdf/Reports/
[5] https://www.environment.tn.gov.in/crz

township six miles north that faced similar erosion. When the project is complete, Pondicherry will have more than patches of sand. It will regain a long shoreline, making it once again.[6]

CASE FILED BEFORE NATIONAL GREEN TRIBUNAL:

C.H. Balamohan v Union of India:

This application seeks direction to stop construction of structures such as seawalls and groynes which may disrupt natural movement of sand along the coasts of Districts of Cuddalore, Puducherry and Villupuram and to provide beach nourishment to these stretches on the coast line, to mitigate human induced coastal erosion.

According to the applicants, coastal environment is threatened by human induced erosion and destruction due to construction activities. Littoral drift is taking place disturbing the equilibrium of the coastal environment and the habitat. Sedimentary budget is required to be maintained of the river sand along the coast. The area of east coast is particularly eco-sensitive and fragile and erosion is also taking place by construction of artificial harbour near Puducherry town to have safe entrance of barges and seagoing crafts. Breakwaters have been constructed which can cause massive erosion as sand will accumulate and would silt up to littoral drift. Measures are required to remedy the situation.

The MOEF&CC has constituted a NCZMA under Section 3(3)(1) of the Environment (Protection) Act, 1986 headed by Secretary, MOEF&CC and its function include coordination with the State/UT Coastal Zone Management Authorities (CZMAs) to examine the change and modification in the CZMPs and to provide technical assistance to the States/UTs CZMAs and approve the specific management plans and ICZM Plans submitted by States/UTs and to deal with the environmental issues referred to it by the Central Government.[7]

CHALLENGES FACED DUE TO LACK OF PROPER ADMINISTRATION:

1. Absence of inter departmental and centre-state coordination is the biggest obstacle at present in

[6] Neha Bhatt, In India, a city takes its beach back from the sea, published 2nd March, 2022
[7] C.H. Bala Mohan v. Union of India, National Green Tribunal, Jan 2019

fostering a sustainable coastal zone management strategy. Lack of proper legislation and enforcement.

2. Lack of funding. The recommendation that the Ministry of Environment and Forest should have funding mechanism is pragmatic. The existing CRZ regime left the total financial responsibility on the shoulders of the states. This state affairs must change and the centre should take charge in giving assistance.

3. Limited understanding about the coastal and marine processes. They should have a wider knowledge about the subject matter.

4.Limited understanding and experience in the Integrated Coastal Area Management (ICAM).

5. Lack of trained personnel, equipments and technology.

THE CHANGING ROLE OF AUTHORITIES:

- The role of the Coastal zone Managing authorities needs to be enlarged from the sole function of policing the coast conservation to one of the sustainable and integrated management.

- Authorities at National, state and district levels are to be reconstituted such that they have representatives of local communities, community - based organisations and non-governmental organizations.

- Institutional structures shall consist of;

  1. A separate division in the Ministry of Environment and Forests to handle CZM.

  2. National Board for Sustainable Coastal Zone Management; and

  3. National and State/Union Territory level CZM authorities.

- The funding mechanism is to be improved and centre should give assistance.

- The Integrated coastal area management (ICMA) should consider coastal resources as a common property. Region specific planning, participatory and decentralised decision – making strategy and fair, transparent, and due hearing from clearing projects were recommended as compulsory parts of potential development activities in the coast. Every effort should be made towards sustainable utilisation of all coastal resources.

SUGGESTION:

To improve the Coastal Zone Management, one suggestion is to implement effective beach nourishment projects to combat erosion and maintain healthy coastlines.

Implementing strict regulations on the administration of coastal development to minimize the impact of natural habitats.

Creating marine protected areas to preserve diversity and ensure the sustainability of marine resources.

Additionally, promoting public awareness and education about the importance of coastal conservation can encourage sustainable practices and responsible development.

CONCLUSION:

As we wrap up this article on Coastal Zone Management and the Pondicherry Beach Restoration Project serves as a shining example of effective coastal zone management. By implementing sustainable practices and engaging the local communities, the project has not only restored the natural beauty of the beach but also a testament for preserving our coastal areas for future generations. It has also focused on the role of administration in restoring the coastlines, it has also yielded remarkable results in the management of plans and regulatory Notification proposed and the efforts taken by both the centre and the state for the proper implementation for coastal conservation. PondyCAN, Environment Protection Act, Ministry of Earth Sciences and the National Institute of Ocean Technology etc have taken initiatives to restore the beach and to protect the environment. Even though the administration lacks sometimes but without proper

administration of management and plans the Coastal Zone Management could have not been developed. This project focuses on ecosystem health, community involvement, and long-term sustainability sets a benchmark for coastal conservation initiatives. Let us continue to protect and cherish our coastal treasures!