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**IMPLEMENTATION OF COASTAL REGULATION ZONE
NOTIFICATION 2019: CHALLENGES AND THE WAY FORWARD**

Under the Guidance and Supervision of

Dr. JACOB JOSEPH

Assistant Professor

The National University of Advanced Legal Studies, Kochi

Submitted by:

Rosa Chandy

Register Number: LM0123020

Roll No: 10588

LL.M (Constitutional and Administrative Law)

CERTIFICATE

This is to certify that **Mrs. ROSA CHANDY, REG NO: LM0123020** has submitted her dissertation titled **“IMPLEMENTATION OF COASTAL REGULATION ZONE NOTIFICATION 2019: CHALLENGES AND THE WAY FORWARD”** in partial fulfilment of the requirement for the award of Degree of Master of Laws in Constitutional Law and Administrative Law to the National University of Advanced Legal Studies, Kochi under my guidance and supervision. It is also affirmed that the dissertation submitted by her is original, bona fide and genuine.

Dr. Jacob Joseph
Guide and Supervisor
NUALS, Kochi

DECLARATION

I declare that this dissertation titled “IMPLEMENTATION OF COASTAL REGULATION ZONE NOTIFICATION 2019: CHALLENGES AND THE WAY FORWARD” is researched and submitted by me to the National University of Advanced Legal Studies, Kochi in partial fulfilment of the requirement for the award of Degree of Master of Laws in Constitutional and Administrative Law, under the guidance and supervision of Dr. Jacob Joseph, Assistant Professor. It is an original, bona fide and legitimate work pursued for academic interest. This work or any type thereof has not been submitted by me or anyone else for the award of another degree of either this University or any other University.

Rosa Chandy

REG NO: LM0123020

LL.M, Constitutional Law and Administrative Law

NUALS, Kochi

Date: 20.06.2024

Place: Ernakulam

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Rosa Chandy

ABBREVIATIONS

CZMA	Coastal Zone Management Authority
CZMP	Coastal Zone Management Plan
CVCA	Critically Vulnerable Coastal Areas
DLCC	District Level Coastal Committee
EIA	Environmental Impact Assessment
ESA	Ecologically Sensitive Areas
HTL	High Tide Line
IPZ	Island Protection Zone
LTL	Low Tide Line
SCZMA	State Coastal Zone Management Authority
KCZMA	Kerala State Coastal Zone Management Authority
MoEF	Ministry of Environment and Forest
MoEF&CC	Ministry of Environment and Forest and Climate Change
NCZMA	National Coastal Zone Management Authority
NDZ	No Development Zone
ICZM	Integrated Coastal Zone Management
i.e	That is
et.al	And others
Ibid	In the same place

LIST OF CASES

1. Andhra Pradesh Pollution Control Board v. M. V. Naidu AIR (1999) SC 812
2. Ansari Kunnoth V. State of Kerala 2011(1) KLT 1043
3. Antony A.V.V. Corporation of Cochin 2015 (1) KLT 178
4. Citizen Interest Agency V Lakeshore Hospital and Research Centre, Pvt. Ltd.
5. Coastal Protection case (1996) 5 SCC 281
6. Council for Enviro-Legal Action v. Union of India (1996)5 SCC 281
7. Environsare Foundation V. UPI, 2003(2) Bom.I.R.R 519
8. Essar Oil Limited v. Halar Ukarsh Samiti AIR (2004) SC 1834
9. Fermento Resorts and Hotels v. Miguel Martins, 209
10. Goa Foundation v. Goa State Coastal Zone Management 2001 2 SCC 108
11. Goa Foundation v Diksha Holdings Pvt. Ltd AIR (2001) SC 184
12. Institute of Social welfare v. State of Kerala 1997(2) KLJ 153
13. Jacob Vadakkancherry v. State of Kerala AIR (1998) Ker.114
14. S. Jagannath v. Union of India AIR 1997 SC811
15. Indian Council for Enviro-Legal Action v. Union of India (1996) 5SCC 281
16. Bombay Environment Action Group v. State of Maharashtra AIR (1991) Bom 301
17. Ms. Betty C. Alexander v. The state of Goa Ors. MISC Application No.32 of 2014 (WZ)
and MISC Application No.33 of 2014 (WZ)
18. Kerala Coastal Zone Management Authority v. State of Kerala (2019) 7 SCC 248
19. Libertina Fernandez v. Goa Coastal Zone Management Authority 2015 SCC online NGT
61
20. Lourde D Costa v. Neendakara Grama Panchayat O.P no.2507 of 1997. Dated July 20
1997
21. M. C. Mehta v. Kamal Nath 1997 (1) SCC 388
22. Meenava Thanthai K.R.Selvaraj v. Chief Secretary Government of Tamil Nadu (2022)
23. Municipal Council, Ratham Municipality v. Vardhichand and others AIR 1989 SC 171

24. M.K.Salim v. State of Kerala (2021) WP no. 19850 of 2019
25. Mohammed Salim v. State of Uttarakhand, (2017) SCC online Utt.367
26. P. A Fazal Gafoor v. State of Kerala SL (Civil)No.50388/2002-25 April 2003
27. Pidade Filomina v. State of Goa AIR 2004 SC 3112
28. Pooja Kumar v. Union of India (2022) O.A. No. 23 of 2017
29. Rural Litigation and Entitlement Kendra and Ors. v. State of UP AIR 1987 SC 359
30. Sagara Beach Resorts v. State of Kerala WP No. 35243/2011
31. Secretary, KCZMA v. DLF Universal Ltd. 2018 (2) SC 203
32. Shailesh. R. Shah v. State of Gujarat, (2002) SCC Online. Guj.164
33. Subhash Kumar v. State of Bihar AIR 1991 SC 420
34. Vamika Island v. Union of India, (2013) 8 SCC 736
35. Vellore Citizen Forum v. Union of India (1996) 5 SCC 647
36. Wilfred J v. MoEFCC (02.09.2016-NGT) MANU/GT/0113/2016

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CHAPTER 1: INTRODUCTION

*“Nature never did betray the heart that loved her”.*¹

- William Wordsworth

Introduction

Environmental protection refers to the practices, policies and actions aimed at conserving and preserving the natural world. The Environmental Protection Act was enacted by the Parliament in the year 1986. The EPA defines the term ‘environment’ as one which *includes water, air and land and the interrelations which exist among and between water, air and land, and human beings, other living creatures, plants, microorganisms and property.*²

This inter-relationship and inter-dependency between human beings, nature and other life forms is the essence of well-being of the human race. The environment embraces all forms of life on this planet. The anthropocentric philosophy propounds that man is superior and other living beings are protected for his well-being. The eco-centric philosophy treats man and all life forms on equal footing for protection. Humans are part of nature. They may have obligations to non-humans. When we adopt the eco-centric philosophy there arises a symbiotic relationship of man with other living creatures, plants and property. Environment law is thus defined as the *law of planetary housekeeping, protecting the planet and its people from activities that upset the earth and its life-sustaining capacities.*³

The EPA was enacted in pursuance of the decisions taken at the United Nations Conference on human environment held at Stockholm in June 1972. The first Coastal Zone Regulation (CRZ)

¹ William Wordsworth, Tintern Abbey

² 2(a) EPA Act, 1986.

³ William H. Rogers, Jr, *Environmental Law*, West Publishing Co, St. Paul, 1977, p1.

notification was issued in 1991. It was based on Section 3(1) and Section 3(2)(v) of the Environmental Protection Act, 1986.

The mesmerising beautiful beaches and the incredible coastlines of the world are rich treasures of biodiversity. The vibrant ecosystems in the coasts include wetland ecosystems, mangroves, mudflat ecosystems, sea-grass ecosystems, salt marsh ecosystems etc. They are home to different types of plants, animals and microbes. Coastal ecosystems are under a threat due to change in the environment, climate, human activity and other factors like the Eutrophication⁴, introduction of new species etc.

Coastal Zones

Coastal zones include areas where land meets the sea, like beaches, dunes, estuaries, wetlands, coastal forests. It has a dynamic and diverse ecosystem and supports a wide range of plant and animal species. Coastal zones are significant for human activities like tourism, fishing, shipping and other economic activities.

India has a coastline of about 7,516 kms of which the main land accounts for 5400 kms, Lakshadweep Coast extends to 132 kms and Andaman and Nicobar Islands have a coastline of about 1,900 kms.⁵ Our country is one of the leading coastal nations in the world. The coastal zones are rich in minerals and has a potential for production of tidal energy and ocean thermal energy for the purpose of development.

Coastal Degradation & the Emergence of CRZ

Coastal zones are the cradle of civilisations where abundant human activities take place. The excessive anthropological interferences led to ecological degradation in Coastal zones. The development of harbours and urban centres in the coastal belt caused degradation of natural habitats and ecosystems. Mechanisation of the fishing industry pushed away traditional fisher folk from the coast and deprived them of their livelihood. The deteriorating conditions of the coastlines necessitated careful planning and regulation of coastal activities. This led to the

⁴ Excessive plant and algae growth due to increased availability of nutrients.

⁵ P. Leela Krishnan, ENVIRONMENT LAW IN INDIA, Fifth Edition P.75

enactment of Coastal Regulation Zone (CRZ) Notification in the year 1991⁶. This notification defined and classified coastal zones and laid down procedures for their protection. Later on, an expert committee was constituted under the chairmanship of eminent scientist M.S Swaminathan to examine the working of this CRZ regime. The committee suggested a paradigm shift from coastal zone regulation to sustainable coastal zone management.⁷

CRZ notifications is a significant regulatory framework which aims to protect the coastal environment. It formulates guidelines to maintain ecological balance and preserve the coastal area's natural beauty.

HTL - High Tide Line

HTL means the line on the land up to which the highest water line reaches during the springtide.

LTL - Low Tide Line.

LTL means the line on the land up to which the lowest waterline reaches during the Spring tide.

According to the CRZ Notification 1991, the coastal land up to 500m from the High Tide Line (HTL) and a stage of 100m along banks of creeks, estuaries, backwater and rivers subject to tidal fluctuations is called the Coastal Regulation Zone.

The Purpose of CRZ Notification

- To protect the coastal ecosystem and coastal environment.
- To enhance sustainable development.
- To regulate human and industrial activities near the Coastline.
- To improve the lives of coastal communities.
- To develop measures to deal with the effects of climate Change, and high intensity cyclones and Tsunamis.

⁶ SO. 114 (E) issued by the Ministry of Environment and Forests on 19 February 1991.

⁷ Swaminathan Report P.3.

This dissertation focuses on the implementation of CRZ Notification 2019. The study will be specifically focused on the implementation of CRZ Notification, 2019 in Maradu Municipality of Ernakulam district.

Objectives

1. To understand the purpose and scope of the CRZ Notification, 2019.
2. To identify the impediments in implementing the requirements laid down in the CRZ Notification, 2019.
3. To gather perspectives from various stakeholders such as Environmental NGO's, Coastal inhabitants, real estate developers and government officials to gain insight into the divergent interests and concerns relating to the implementation of the CRZ Notification, 2019.
4. To find solutions to remove these impediments.

Research Questions

1. What is the scope and extent of the protection afforded to coastal areas by the CRZ Notification, 2019?
2. What are the obligations of the coastal inhabitants and government officials under the CRZ Notification, 2019?
3. What are the challenges faced by Coastal inhabitants in complying with the requirements of the CRZ Notification, 2019?

Hypothesis

The implementation of CRZ Notification-2019, faces significant challenges including regulatory complexity, enforcement issues, and socio-economic conflicts and economic concerns. The poor implementation of CRZ rules and regulations negatively affect the protection of CRZ areas, the natural ecosystems, communities, living in these zones and developmental activities. The present CRZ notification 2019 dilutes the protection provided in earlier notifications. The review of CRZ rules, especially its implementation mechanisms or processes will help resolve this.

Research Methodology

The study employs a doctrinal method. Legislations, case laws and Government directives is analysed to understand the scope and extent of the legal framework under CRZ Notification, 2019.

Legislations, case laws, government directives, authoritative books, articles, reports etc. are analysed to understand the scope and extent of the legal framework under CRZ Notification, 2019.

Chapterisation

1. Introduction: Objectives, Research Questions, Research Methodology, Hypothesis etc.
2. An overview of the Origin and Purpose of CRZ rules and regulations.
3. Analysis of CRZ notification 2019: Enforcement and Implementation.
4. Contribution of Indian Judiciary towards Protection of Coastal Areas.
5. Implementation of CRZ Notification 2019: Challenges and Remedies

Chapter 2: Gives an overview of the origin and purpose of CRZ rules and regulations. This chapter discusses the origin of Coastal Zone Regulations, The International Agreements on Environment, Coastal Regulation in different Countries like Australia, Canada, The United Kingdom, Japan, Netherlands, Brazil, New Zealand etc. A brief overview of the history of Coastal Regulations India is also included centred around CRZ Notification 1991, Integrated Coastal Zone Management, CRZ Notification 2011 and CRZ Notification 2019. Changing environmental concerns, development pressures and legal challenges affecting coastal zones are also looked into. Global warming, Climate change, sea-level rise and changing coastline, population growth also are points of discussion in this chapter. Salient features of the CRZ notifications also came under the purview. Environment concerns and protection goals of the notification like conservation and sustainable use, pollution control, coastal erosion prevention, marine conservation, climate resilience, preservation of cultural heritage, stakeholder involvement, consultation process also came under scrutiny. Brief overview of the committees

formed under MoEF&CC to look into the implementation of the CRZ notifications like Dr. Swaminathan Committee Report, Shailesh Naik Committee report etc are also discussed.

This chapter gives a general overview of the relevance of Environment Protection with special emphasis on the protection and preservation of the coastal areas and coastal ecosystems. It also discusses the potential of CRZ areas and its contribution to human activities like tourism, fishing, shipping and other economic activities; how anthropological interventions contribute to degradation of ecosystems; and the significance of CRZ-notification 1991, CRZ-notification of 2011 and the CRZ Notification of 2019. This chapter also defines terms like HTL, LTL, NDZ etc and explains the purpose of CRZ notifications.

Chapter 3: This chapter analyses CRZ Notification 2019 and also discusses the policies and methods CRZ rules of implementing regulations. The CRZ Notification 2019 was the result of the Report of Shailesh Naik Committee in 2014. Development with sustainable coastal management is the crux of the notification. The Chapter charts out the classification and zoning of coastal areas and the objectives of the notification, provisions for coastal zone protection, prohibited activities within CRZ etc. There is also a brief discussion on Coastal Zone Management Plan (CZMP) to improve the conditions in Coastal regions. CRZ clearance is needed for permitted and regulated activities. Post clearance monitoring, enforcement and implementation are also discussed. Regulatory Authorities for Coastal Zone Management are the Central and State Governments. Critically Vulnerable Coastal Areas (CVCA) are marked and their management is also carefully incorporated. Methods of Conservation of coastal environment, “Blue Flag Certification” etc., are also incorporated. Many changes are brought about by CRZ notification 2019 like streamlining of coastal clearance, rural area development, urban area development, tourism infrastructure, island conservation, conservation of ecologically sensitive areas, pollution management, the provision of “No Development Zone” etc discussed in this chapter.

Chapter 4: This chapter tries to analyse the judicial intervention and subsequent case laws related to CRZ rules and regulations. Special emphasis is given to case laws related to the demolition of an apartment complex in Maradu Municipality. The courts of India have adopted

certain doctrines while interpreting environmental laws such as ‘The Polluter Pays Principle’, ‘The Precautionary Principle’, ‘Public Trust Doctrine’, ‘Sustainable Development’ etc., as envisaged in International Environment Law. Some of the cases discussed in this chapter are Ansari Kannoth v. State of Kerala⁸, Vamika Island (Green Lagoon Resort) v. Union of India⁹, Antony A.V. v. Corporation of Cochin¹⁰, Kerala Coastal Zone Management Authority v. State of Kerala¹¹ etc.

Chapter 5: Kerala’s coastal zone is blessed with a vast network of backwaters, creeks, bays, natural ponds, streams etc. These areas are rich in biodiversity with variant flora and fauna. Kerala has around 590 km coastal belt covering over nine coastal districts. The increasing population in coastal areas and migration to coastal areas exerts pressure on the coastal equilibrium. After the 2018 flood, grave ecological impacts are felt in coastal regions. Kerala is facing an irregular pattern of monsoon and it results in the loss of homes and livelihood of coastal people. The CRZ 2019 notification is not much concerned about the livelihood issues of the coastal people. People are unaware of the implications of the CRZ notification 2019. There are ambiguities regarding the various provisions. Though the rules and regulations appear to be strict and stringent to make a positive impact, the enforcement and monitoring mechanisms need to be strong to ensure compliance. The frequency and intensity of unseasonal and extreme weather events can upturn the implementation of the rules in strict compliance.

The CRZ Notification is not addressing the climate and livelihood issues of coastal people. The implementation of mega projects like the construction of Vizhinjam Port and its implications compels us to think that the rules are made to protect the interest of industries and big investors. The poor fisher folk displaced from their habitats are still struggling in the cement godowns of the coastal belt. The laws are focusing more on the development aspects rather than environmental concerns. In the name of tourism and infrastructure development, coastal laws are not monitored or implemented. Frequent changes in the CRZ rules negatively impact the coastal inhabitants. Real estate lobby is trying to grab land from coastal inhabitants. The coastal people

⁸ 2011 KLT 1043

⁹ (2013) 8 SCC 388 2

¹⁰ 2015 (5) FLT 332, 2015(1) KLT 178

¹¹ (2019) 7 SCC 248.

are not aware of the implications of the notification and hence are exploited by various interested groups. The government has given priority to development rather than coastal protection. Though the CZMP should have been ready within six months of notification, it was prepared, finalised and submitted for ratification from the Ministry only after 4 years from the notification date.

Remedies/ Suggestions to address the challenges are also covered in this chapter. Strengthening institutional capacity through training and improving provisions is one of the strategies. To avoid overlaps and gaps in enforcement of CRZ rules and regulations, demarcation and allotment of roles of various agencies is essential. Local communities participation in decision making, conducting awareness campaigns to improve understanding of CRZ norms can pave the way for better implementation of CRZ Regulations. The planners should incorporate climate change projections into coastal planning and develop adaptable CRZ boundaries.

The authorities should also focus on revival of coastal ecosystems and to withstand climate impacts. More stringent penalties are needed for violations of CRZ rules. A balanced approach integrating economic development with environmental sustainability is the need of the hour. Consistent legal frameworks and strong political commitment can bring about positive results in this field. Frequent changes in policy priorities can affect the Consistent application of CRZ guidelines. A combination of institutional strengthening, community involvement, technological advancements and policy reforms can significantly improve the implementation of CRZ Notification 2019.

Literature Review

This dissertation is based on extensive research of multiple sources including scholarly articles on environment protection, coastal regulation, coastal management, climate change, various amendments to coastal laws, coastal zone management plan etc. Standard books written by eminent authors on the above subjects are also referred. Interviews with scientists in the field and other stakeholders also threw light on the practical difficulties faced by them in real life situations.

1. Shyam Divan, Armin Rosencranz. Environmental policy in India, Cases, Materials and Statutes - 2001.

Chapter 11 of this book is dedicated to protecting the Coastal Regions, Wetlands and Heritage. The importance of coastal ecology and the linkages between community life, economic development and the environment are discussed. Marine pollution, Ocean Resources, Coastal Development etc are dealt with. India's ocean resources are primarily threatened by terrestrial sources of pollution. The legislative framework for controlling marine pollution is provided by the Territorial Waters, Continental Shelf, Exclusive Economic Zone and other Maritime Zones Act of 1976. Until 1950, the coastal waters were fished by the traditional fisherfolk and later taken over by the big business people in the section. The clash between the two resulted in the enactment of the Kerala Marine Fishing Regulation Act, 1980 which was upheld by the Supreme Court. The ban of trawling in the monsoon season was a reasonable restriction on the freedom of trade since it was necessary for protecting the source of livelihood of traditional fisherfolk and also to save the pelagic fish wealth within the territorial water from depletion.¹²

Development along coastal stretches are severely restricted under a regime comprising the Coastal Regulation Zone Notification of 1991, the CZMPs etc. The chapter discusses the evolution of CRZ rules and its implications. Several cases also came up for adjudication like Indian Council for Enviro-Legal Action V. Union of India, S. Jagannath V. Union of India.¹³

**2. Jitendra K. Panigrahi & Ors, "Effectiveness of the Indian Coastal Regulation zones provisions for coastal zone management and its evaluation using SWOT analysis".
www elsevier.com**

An overview of the CRZ provision and background to the CRZ norms in India are presented. It examines the progress made in the CRZ provisions through various amendments since its implementation (1991) and also depicts the key attributes of the new CRZ (2011) notification. A Strength, Weakness Opportunity and Threat (SWOT) analysis is carried out in this article to identify strategic directions of CRZ practice/system. The analysis reveals that while considerable

¹² State of Kerala v. Joseph Antony AIR 1994 SC 721.

¹³ The CRZ Notification Case, 1996 (5) SCC 281, AIR 1997 SC 811.

progress has been made in Indian CRZ provisions through successive amendments such as resource conservation and pollution control, Implementation of ICZM¹⁴ programme in various Coastal states and greater involvement of corporate sectors in CZM.¹⁵ There are several constraints ranging from improper scientific basis, lack of baseline information, ambiguity in project activities, ineffective implementation and enforcement. Increasing public awareness, initiative of environmental groups, integrating ICZM to plans and policies are vital to implement CRZ rules effectively. Recommendations/ Suggestions are made to improve the effectiveness of the CZM and CRZ provisions in India.

3. Rachel Carson, “The Silent Spring”¹⁶

Silent Spring is an environmental science book which documented the environmental harm caused by the indiscriminate use of pesticides, especially the pollution of water bodies and damage caused to the bird and animal population. It is a classic book which can create a bond between man and nature.

4. Shailesh Naik Committee Report on CRZ Notification 2011¹⁷

Shailesh Naik Committee was formed to examine the issues of Coastal States/UTs relating to CRZ Notification 2011 and to find out any errors and inconsistencies. The Shailesh Naik Committee submitted a draft notification to the Central Government based on several recommendations. Subsequently the Central Govt issued a new notification in suppression of the earlier notification of 2011 after considering the recommendations and objections received from the public. Thus, the new notification CRZ 2019 came into existence.

5. Leela Krishan Environment Law in India - Lexis Nexis

This book exhaustively deals with the constitutional mandate for environmental protection, judicial review of decisions affecting the environment, environmental impact assessment and public participation in the assessment process. Chapter 4. brings forth the classification of coastal

¹⁴ Integrated Coastal Zone Management - ICZM

¹⁵ CZM - Coastal Zone Management

¹⁶ A book on Environmental Conservation.

¹⁷ 2015, <http://www.indiaenvironmentportal.org.in>

regulation zones and the problems arising therefrom. It also goes into the decisions of courts on Coastal Zone Management.

6. Coastal Zone Management Plan of Maradu Municipality, Ernakulam District, Kerala (As Per CRZ notification 2011 in 1:25000 Scale). Prepared by National Centre for Earth Science Studies, Thiruvananthapuram.

The preparation of the CZMP for Maradu Municipality has been undertaken as part of the CZMP preparation for the coastal zone of Kerala, including urban and rural areas. The approach and methodology followed are the same for all the Corporations, Municipal Councils and rural areas in the State. The damages to the coastal zone and the impact of coastal hazards to communities and properties, to a certain extent, can be controlled by regulating high impact activities in the coastal zone.

CRZ Categories: The CRZ of Maradu consists of CRZ I (CRZ IA & CRZ IB), CRZ II, CRZ III and CRZ IV.¹⁸ The CRZ IA are those ecologically sensitive and the geomorphological features which play a role in maintaining the integrity of the coast as listed under para ‘7(i)A’ such as mangroves, corals, sand dunes, etc. The CRZ IB is area between Low Tide Line and High Tide Line. The CRZ II is those developed areas (with more than 50% built up area) in legally designated urban areas. Maradu being a Municipal area, the CRZ in Maradu which have more than 50% built up area, is CRZ II. The CRZ III is undeveloped areas in the CRZ of Maradu Municipal area. The CRZ IV is the nearshore waters, the inland water bodies and the bed. The details are given in the attached CRZ map (Fig 1) and Table 1 & 2. *Avicennia officinalis*, *Rhizophora mucranata*, *Acanthus ilicifolius*, *Bruguiera gymnorhiza*, *Acrostichus aureum*, *Lumnitzera racemosa*, *Bruguiera sexangula*, *Derris trifoliata* and *Barringtonia racemosa* are the dominant variety of mangroves. Tidal influence in some of canals and rivers is regulated by bunds/ sluices to regulate saline incursion. Many of such sluices have become non-functional. Reclamation of mudflats/ tidal flats and water bodies has caused significant changes in the morphology and HTL in many places. In that process mangrove also has been damaged.

¹⁸ As Per CRZ Notification 2011, CZMP for CRZ, 2019 is not finalised yet.

Maradu Municipality being highly developed with a very high potential for further development, the Kerala Coastal Zone Management Authority and the Govt of Kerala took the view that the CRZ in Maradu Municipality, other than CRZ I, CRZ IV and open spaces such as parks and play grounds have built up area more than 50% and hence could be considered as CRZ II. Accordingly, the CRZ in Maradu Municipality, other than CRZ I, CRZ IV, are shown as CRZ II.

7. CRZ Notification 1991

In February 1991 the Union Ministry of Environment and Forests¹⁹ framed regulations under the Environment (Protection) Act of 1986 (EPA) and the Environment (Protection) Rules of 1986, to preserve a coastal zone extending over a strip of land up to 500m from the HTL along the entire Indian Coast. It severely restricted development to about 3000 sq. kms of coastal India, Clause 2 of the CRZ regulations prohibited 13 designated activities including establishing new industries and expanding existing units.

8. CRZ Notification 2011

CRZ Notification 2011 came into force on 6th January 2011, in suppression of the 1991 notification. There were of the 1991 changes in definition, extent and classification of the Coastal Regulation Zones. The protection of livelihood of the fishermen, preservation of coastal ecology and ecosystems and promotion of economic activity were highlighted. Through an amendment, a provision was incorporated for establishing CZMA.²⁰

9. CRZ Notification, 2019

Dr. Shailesh Naik Committee was formed to look into the issues of Coastal states /UTs relating to CRZ Notification 2011 and to find out any inconsistencies in CRZ 2011. Based on the finding of this Committee and the recommendations made by the Committee, a draft notification was submitted to the Central Government. Thus, a new notification of CRZ, 2019 came into existence. This notification rendered special emphasis on creating employment opportunities for the people in the coastal areas. It paved the way for better conservation and protection of the

¹⁹ MoEF for Short.

²⁰ Coastal Zone Management Authority.

Coastal environment and enhanced activities in the coastal region so as to promote economic growth and better standard of living.

10. Peter Lawrence, Justice for Future Generations. Climate change and International Law, Edward Elgar

The book discusses the climate change problems and the solutions, the current UN Climate regime, obligation towards future generations in justice and ethics in the context of climate change. Precautionary Principle, Human Rights, Sustainable Development, Inter-Generational Equity are also dealt with. The author emphasises the need for incorporating intergenerational justice principles into international climate law.

* Peter Lawrence is a Senior Lecturer, Faculty of Law, University of Tasmania, Australia.

11. Patricia Birmie, Alan Boyle, Catherine Redgwell - International Law and the Environment.

Chapter 7 deals with The Law of the Sea and Protection of the Marine Environment and discusses the effects of pollution from lands and seaborne sources. Regulation of Marine's pollution is an important aspect of Coastal Zone Protection.

CHAPTER 2: AN OVERVIEW OF THE ORIGIN AND PURPOSE OF CRZ RULES AND REGULATIONS

*“We stand now where two roads diverge. But unlike the roads in Robert Frost’s familiar poem, they are not equally fair. The road we have long been travelling is deceptively easy, a smooth super highway on which we progress with great speed, but at its end lies disaster. The other fork of the road - the one less travelled by – offers our last, our only chance to reach a destination that assures the preservation of earth”.*²¹

- Rachel Carson

Introduction

Coastal areas all over the world are ecologically delicate. Activities in the coastal area generate disparities in the coastal atmosphere. Coastal zones are continuously developing and they are the most subjugated part of the earth. Coastal regions are home to the majority of the traditional populations which account for around 10 million fisher folk and are reliant on the sea and coastal resources for existence. Sandmining, building sea walls, aquaculture, uncontrolled tourism and urbanization are detrimental to coastal ecosystems. The tsunami (2004) exposed the coast’s inherent vulnerability and its effect on coastal residents.²² Sunderbans of Bengal and the Vembanad lakes of Kerala are examples of fragile coastal ecosystems of our country. Coastal areas are rich in natural resources. Anthropological activities in coastal areas can lead to environmental imbalances. Dredging and dumping waste in coastal area can result in coastal erosion and sea-level rise. The foremost concern of coastal people is loss of lives and property

²¹ Rachel Carson – in “Silent Spring” on Environmental Conservation.

²² (Arathy Sridhar, Statement on the CRS Notification and post tsunami rehabilitation in Tamil Nadu, UNDP, New Delhi (2005).

due to flooding and cyclones. States like Kerala are on a road to disaster every monsoon, it is facing floods and landslides.²³

India is having coastal stretches that are heavily populated but poorly managed thus leading to natural disasters. Hence an elaborate and comprehensive coastal management system is inevitable. The theoretical foundation of coastal management was laid for the first time in the United States in 1972. It was implemented as a public law.²⁴ Coastal Management relates to the theory, policy and decision-making processes associated with coastal resources.

Historical Context of Coastal Regulations

The Origin of Coastal Zone Regulations

Coastal Regulations gained momentum in United States in the late 19th and early 20th centuries. Pollution of the water systems, pollution of ecosystems near coastal areas where abundant human activities take place led to the enactment of laws such as the Rivers and Harbours Act of 1899. The aim was to regulate activities impacting harbour and coastal waters. In 1972 the United States enacted Coastal Zone Management Act to protect the coastal area. It focused on proper land use near the coast, regulate developmental activities and keep water quality for the ecosystems. The environment protection movements of 1960 s and 1970 s brought about greater attention to protect coastal zone areas. The “Silent Spring”²⁵ made the environmentalist world over, to ponder over the future of the planet earth, the existence of life on earth including that of the mankind. The Santa Barbara Oil Spill in 1969 emphasized the need for practical regulations to prevent environment disasters.

International Agreements on Environment

International environmental agreements are aimed at addressing global environmental challenges through cooperative efforts among nations. The main objectives are protection of the global environment, mitigation of environmental issues, sustainable development, formulation of legal frameworks and standards, setting up mechanisms for monitoring environmental conditions,

²³ K.A. Shaji – Deadly landslides are becoming Kerala’s new reality in every monsoon, india.mongbay.com

²⁴ (Coastal Zone Management Act of 1972 (US Public Law 92 – 583).

²⁵ Authored by Rachel Carson, The Classic that launched the Environmental Movement.

assessing progress and holding countries accountable for their commitments and actions; balancing environmental protection with economic growth, addressing transboundary issues like climate change, ocean pollution, biodiversity loss, etc. Equitable sharing of benefits derived from natural resources and supporting developing countries in their own environmental efforts are also in the agenda of international agreements.

1. **United Nations Conference on Human Environment, June 1972, Stockholm** was the first world conference to make the environment a major issue. The participants adopted a series of principles for sound management of the environment including the Stockholm Declaration and Action Plan for the Human Environment and several resolutions. The action plan contained three main categories. a) Global Environmental Assessment Programme (watch plan); b) Environmental management activities; c) International measures to support assessment and management activities carried out at the national and international levels. One of the major results of the Stockholm conference was the creation of the United Nations Environment Programme (UNEP).²⁶
2. **The United Nations Convention on the Law of the Sea (UNCLOS)** adopted in **1982**, formulated certain frameworks for the protection of coastal and marine resources throughout the world's Oceans and seas.²⁷ Global warming, environmental pollution etc. accelerated climate change. Climate change impacts affected coastal areas in the form of sea level rise, coastal erosion, storm and Tsunami vulnerability and destruction of certain ecosystems. The setting up of industries, construction work, tourism activities aimed at economic development of inhabitants and stake holders pose a threat to the environmental conservation and coastal regulation. To protect the fragile ecosystems in the coastal areas we have to turn to sustainable development.²⁸ Technological advances like Geographic Information Systems (GIS) and remote sensing have contributed to monitoring and managing coastal areas consistently.

²⁶ <http://www.un.org/conferences>.

²⁷ International Maritime Organization. www.imo.org.

²⁸ One of the key factors in Brundland report Our Common Future – Book by Brundland Commission.

- 3. United Nations Conference on Environment and Development (UNCED) held in Rio de Janeiro, Brazil, 3 to 14 June 1992.** Agenda 21 of the Rio conference asserts that the marine environment and ecologically sensitive areas to be preserved and developed. It also calls for expanding marine living resources and ensuring effective monitoring and enforcement activities in fishing and thus raising the standard of living in coastal communities. It also emphasizes protection of oceans, all kinds of seas, including enclosed and semi enclosed seas, coastal areas etc.²⁹

Coastal Regulations in Different Countries

In Australia: Australia is one of the countries which give importance to biodiversity conservation, land use planning, climate change studies and coastal zone development. A significant legislation the country made is in ‘The Coastal Protection and Management Act of 1955’ which is a legislative framework governing coastal management development and environmental protection.

In Canada coastal regulation is done at two levels – Federal and Provincial levels. Significant federal legislation in this field is The Fisheries Act and the Oceans Act. Provinces also make regulations with regard to land use, pollution control and coastal development.

The United Kingdom has a long history of coastal regulation. The Coastal Protection Act of 1949 aimed at controlling coastal erosion and protecting the coastal population. Later in 2009, the Marine and Coastal Access Act was enacted which gave priority to sustainable development and conservation of coastal ecosystems.

Japan: The country’s vulnerability to frequent tsunamis and typhoons compelled the country to focus on disaster management, coastal conservation and sustainable development.

Netherland: The North Sea Flood of 1953 made the Government to take several initiatives in the field of coastal conservation and flood risk management. Netherlands having a low-lying terrain/geography implemented massive infrastructure projects to ward off further Sea Floods.

²⁹ <http://sustainabledevelopment.un.org>.

Brazil: The National Policy on the Environment and the National Coastal Management plan governs coastal regulation and conservation in Brazil. The objective is to balance economic development, conservation of marine diversity, protection of coastal ecosystems, like mangroves and coral reefs.

New Zealand: Integrated coastal management in New Zealand emphasizes interconnectedness of land, sea and fresh water ecosystems. The legal basis for coastal planning and decision-making with a focus on sustainable development and environmental protection comes from The Resource Management Act 1991.

History of Coastal Regulations in India – A brief over view

The Indian Ports Act of 1908 was a legislation aimed at governing and regulating activities in Indian ports and coastal waters – This Act focused on industrialization and economic development which led to increased pressure on coastal resources.

After independence, India's march to growth and development witnessed pressure on land, air water, the environment and the ecosystems including coastal zones. Environmental concerns started gaining attention in 1970s, leading to enactment of laws like the Water (Prevention and Control of Pollution) Act 1974, Air (Prevention and Control of Pollution) Act 1981; The Environment (Protection) Act, 1986.

Coastal Zone Regulation Notification: Section 3 of the Environment Protection Act confers power on the Central Government to take all such measures as it deems necessary for the purpose of protecting and improving the quality of environment and preventing, controlling and abating environment pollution.

Evolution of Coastal Regulation and Conservation in India

The CRZ notification was inspired by a letter that Prime Minister Indira Gandhi sent to all Chief Ministers of coastal states on 27th November 1981 to take steps to protect India's entire coastline from environmental deterioration. Indira Gandhi further emphasized in the letter that the 500-meter stretch of the beach should not undergo any unnecessary development.³⁰

³⁰ Abhishek Das, Coastal Regulation Zone; governance and conservation.
<http://www.lawyersclubindia.com/articles>.

In 1983	-	Guidelines were issued for beach conservation.
1986	-	Environmental Protection Act.
1991	-	CRZ Notification 1991 under E(P) Act, 1986
2005 & 2009	-	M.S. Swaminathan Committees.
2011	-	CRZ notification 2011
2019	-	CRZ notification 2019

Purpose of CRZ Rules and Regulations

Coastal zone is a meeting point of land, sea and inland waters. Coastal zone has contributed immensely to the development of human civilizations. Coastal zones are endowed with a wide range of ecosystems like mangroves, coral reefs, sea grasses, salt marshes, sand dunes, estuaries and lagoons which are characterized by distinct biotic and abiotic processes.³¹ The developmental activities such as industries, tourism, construction of housing colonies, expansion of harbours, mechanisation of fishing etc have contributed to the deterioration of coastal areas. The natural habitat and the pristine ecosystem have been negatively impacted by the unwise and unplanned developmental activities in the coastal region. Sustainable coastal zone management is the need of the hour.

Coastal zones are favoured areas for energy generation because of early delivery of fuel for power stations and convenient disposal of cooling water. The landward part of the coastal zone plays an important role as a place for human settlement and tourism. There has been over development of coastal zones, and this has led to policies to rectify or reduce damage caused.³²

- **Changing Environmental concerns, development pressures and legal challenges affecting coastal zones**

Coastal Regulation Zone policies are continuously involving due to changing environmental concerns. Experts in the field often emphasize the need for stricter regulations to protect fragile coastal ecosystems from threats such as sea-level rise, habitat destruction, pollution and

³¹ M.S. Swaminathan, "Report of the Committee to Review the Coastal Regulation Zone Notification 1991", 2005. P3.

³² European Union Agency. Coastal Zone Threats and Management. eea.europa.eu.

unsustainable development. They advocate for comprehensive approaches that consider the ecological, social and economic dimensions of coastal management. There is a growing emphasis on community participation and indigenous know ledge in decision making processes to ensure the sustainability of costal development initiatives.

- **Global warming, Climate change, Sea-level Rise and Changing Coastline**

Global warming refers to long-term increase in earth's average surface temperature due to human activities, primarily the release of greenhouse gases into the atmosphere. The main contributors to global warming are the burning of fossil fuels, deforestation, industrial processes and agricultural practices. Global warming leads to changes in the climate system leading to intense heat waves, extreme weather events, altered precipitation patterns, shifts in ecosystems and habitats. Rising temperatures also cause melting of glaciers and ice caps at an accelerated pace contributing to sea level rise. Thus, poses a threat to coastal communities, infrastructure and biodiversity. Ocean warming can disrupt marine ecosystems, coral reefs and fisheries. Global warming leads to shifts in species distribution, changing the timing of biological events and increased risk of extinction for vulnerable species.

- **Population Growth**

Population growth in CRZ areas can lead to increased demand for resources such as water land and fisheries. This can lead to over exploitation of natural resources, habitat destruction and ecosystem degradation. Infrastructure expansion will result in land reclamation, coastal erosion and the destruction of mangroves and wetlands. Mangroves, “found along about two-thirds of the planet's tropical coastlines, these semi-aquatic plants constitute some of the most dynamic and biologically complex ecosystems on earth. Like their roots, mangrove forests form intricate networks that bridge life between land and sea.”³³ With their amazing capacity to store carbon they might be one of nature's best defences against a changing climate.

- **Sand mining**

Sand mining along the India coasts has led to coastal erosion, saline – water intrusion, destruction of resting sites for turtles, and loss of protective barriers against flooding.

³³ <https://worldwidelife.org>. accessed on 12.00 P.M. 1st.

Indiscriminate mining of sands in the coastal areas leads to soil erosion, habitat destruction, saline water intrusion, loss of natural barrier etc.

Legislative frame work and legal basis

World-wide policies relating to conservation of marine and coastal environments have expanded and resulted in the completion of several binding and non-binding treaties and international agreements.

The 1972 United Nations Conference on the Human Environment in Stockholm³⁴ was the first world conference to make the environment a major issue. The theme was “Only One Earth”. The Stockholm declaration paved the way for international cooperation on environmental issues. India was one of the signatories out of 152 parties. Pursuant to this declaration, the signatories enacted laws and legislations in their countries. Consequently, India enacted the Environment (Protection) Act, 1986.

Coastal zones where land, sea and inland waters meet are vibrant with different life forms. The different ecosystem inhabiting the coastal zones are home to many plants and animals. As the coasted zones are fragile and vulnerable to different factors, its protection is of prime importance. Hence under section 3 (1) and 3 (2)(v)(2) of EPA and Rule 5(3) of the Rules, the Government of India formulated the Coastal Regulation Zone (CRZ) Notification in the year 1991.³⁵ The notification defines and classifies coastal zones and lays down procedure for their protection.

Later the Government of India formed an Expert Committee chaired by an eminent scientist Dr. M.S. Swaminathan to examine the working of this notification. The committee suggested for a sustainable coastal zone management.³⁶ “Good coastal management needs the involvement of all stakeholders from organizations of coastal villagers to industry and facilitators like Conservationists, Environmental NGOs and Scientists”³⁷.

³⁴ <https://www.un.org/conference>

³⁵ SO 114(E) issued by the Ministry of Environment and Forests on 19th February 1991.

³⁶ 18. Swaminathan Report, P3.

³⁷ Down to Earth, 31 Jan 2005.

Coastal Zone Regulation Notification 1991

In 1991, the Ministry of Environment and Forests issued the Coastal Regulation Zone (CRZ) Notification under section 3 of the Environmental Protection Act, 1986. This was for regulating activities in the coastal zone, protecting sensitive ecosystems, preventing pollution and for safeguarding coastal communities and enhancing development projects in coastal areas.

Notification of 1991 is applicable to the coastal stretches of seas, bays, estuaries, creeks, rivers and backwaters influenced by the tidal action up to 500 meters from High Tide Line (HTL) and land between Low Tide Line (LTL).

The State Government and the Union Territories have to draw up the Coastal Zone Management Plan (CZMP)³⁸ to identify and classify the Coastal Regulation Zone. The Government have to obtain permission from MOEF³⁹ for particular projects that included the construction activities related to the defence requirements, operational constructions for Ports and Harbours and Light Houses, Thermal Power Plants and any other activities with investment over and above Rs. 5 crore (five crore). Coastal areas under the notification were classified into four zones – CRZ – I, CRZ – II, CRZ – III and CRZ – IV.

Amendments in CRZ Notification

In order to balance conservation objectives with the needs of the coastal communities and development projects, the CRZ notification has undergone several amendments and revisions⁴⁰ over the years. These amendments addressed emerging challenges and incorporated stake holder's feedback.

Coastal Regulation Zone Notification – 2011

A new CRZ notification came into force on 6th January 2011, in suppression of the 1991 notification⁴¹. There were changes in definition, extent and classification of the coastal Regulation Zones. The changes were made aiming at the protection of livelihood of traditional fishermen, preservation of coastal ecology and ecosystems and promotion of economic activity.

³⁸ Clause 3(1) of the CRZ Notification 1991.

³⁹ Clause 3(2) of the CRZ Notification, 1991.

⁴⁰ CRZ notification 2011, CRZ notification 2019.

⁴¹ SO 19 (E) dated 6 January 2011.

Through an amendment, a provision was incorporated for establishing a Coastal Zone Management Authority (CZMA).⁴² A National Coastal Zone Management Authority (NCZMA) was constituted for better implementation of CRZ Notification 2011. Composition, tenure and mandate of NCZMA and SCZMA have already been notified by the Ministry of Environment and Forests. District Level Committee (DLC) is constituted under the Chairmanship of District Magistrate. Three representatives of local traditional coastal communities including from fisher folk are in the DLC. The 2011 CRZ notification provided for a mechanism to obtain formal approval and regularisation of dwelling units which was not in the 1991 CRZ notification. EIA (Environment Impact Assessment) was made mandatory for the clearance of projects in CRZ areas. CZMP has to be prepared by the concerned CZMA of State Government or Union Territories with the full participation of the local communities.

To sum up, there are mainly three institutions responsible for the implementation of CRZ, namely:

- National Coastal Zone Management Authority at the Centre
- State/UT CZMA (SCZMA/UTCZMA)
- District Level Committee in every District (DLC)

In CRZ 2011 notification, Habitat of various marine species have been included – Turtle nesting grounds, Horse Shoe Crab habitats, Sea grass beds, nesting grounds of birds, salt marshes etc. CRZ – 11 and CRZ – 111 and CRZ – IV have been retained without much changes. Areas requiring special consideration for CRZ areas falling within the Municipal Limits of greater Mumbai, Kerala, Goa and other areas have been incorporated. Slum Rehabilitation Scheme in the specified areas have been introduced and the State Government has to implement slum development schemes through other agencies. For the State of Kerala, provisions for fishing and related activities have been given a special emphasis. Areas classified under CRZ – 1 have No Development Zone which are habitats for turtles and other species as covered under the Wild Life Protection Act, 1972. Ecologically sensitive areas were given special consideration so that the fragile areas are protected from encroachment. Later a Six Member Committee was

⁴² Clause 4 (b) of the CRZ Notification 2011.

constituted under the Chairmanship of Dr. Shailesh Nayak⁴³ to examine the issues of Coastal States/UTs relating to CRZ notification 2011 and to find out any errors and inconsistencies. The committee submitted its report in January 2015.

Shailesh Nayak Committee Report

After examining the problems related with the coastal zones and environment, studying the hardships faced by coastal communities the committee made the following recommendations.

1. The Ministry should formulate proposals, so that the fragile ecosystem in the CRZ areas is not damaged. Any damage to the ecosystem can affect the livelihood of the coastal communities. Special protection should be given to mangroves, coral reefs, sea grass etc.
2. Eco-tourism can be promoted on the model of International Union for Conservation of Nature (IUCN)
3. Ecologically sensitive areas under CRZ-1 should be identified on the basis of scientific assessment and to device measures to conserve them.
4. Historical archaeological and heritage value structures and areas for protection and conservation should be identified by the Ministry of Culture.
5. Regulation of activities detrimental to integrity of water bodies and their beds.
6. Disposal of sewage, effluents and solid waste should be done in scientific and environmentally safe manner.
7. Regulations in CRZ – 11 and 111 have impact on the State Town and Country Planning laws and the States should address those issues. Issues of overlapping also found as notification overrides Town and Country Planning regulations of the States or Union territories.
8. Communities living in the coastal areas should be provided with housing with basic infrastructure.
9. Existence of ambiguity and difficulty in the interpretation of the CRZ notification 2011 including demarcation of HTL/LTL, boundaries of CRS-1, 11, 111 and IV should be addressed.

⁴³ Secretary of the Ministry of Earth Sciences.
<http://www.indiaenvironmentportal.org.in>

10. Coastal communities should be put to the path of economic and social development.
11. Acknowledgement of shore line changes and to identify the reasons for shoreline change.
12. The Ministry should take initiatives to explore methods of conservation and protection of coastal ecosystems.

The Shailesh Naik committee submitted a draft notification to the Central Government based on the above recommendations. Subsequently the Central Government issued a new notification in suppression of the earlier notification of 2011 after considering the recommendations and objections received from the public. Thus, the new notification of Coastal regulation Zone, 2019 came into existence on 18th January 2019.

CRZ Notification 2019

CRZ Notification 2019 rendered special emphasis on creating employment opportunities for the people in the coastal areas. The notification paved the way for better conservation and protection of coastal environment and enhanced activities in the coastal region so as to promote economic growth resulting in employment opportunities and better standard of living.

Salient features of the 2019 Notification

The 2019 CRZ notification divided CRA-III areas (Rural Areas) into two categories namely CRZ-IIIA and CRZ-IIIB of which the former denotes an area with population density more than 2161 persons per square km while the latter denotes rural areas with population density less than 2161 persons per square km.

As per the latest notification the CRZ-IIIA areas will have No Development Zone (NDZ) of 50 metres from the high tide line (HTL) as compared to the 200 metres as stipulated in the notification 2011. The CRZ – IIIB areas however will have a no development zone of 200 metres from the HTL. The population density of respective areas will be measured on the basis of census 2011.

Environmental Concerns and Protection goals

- **Conservation and Sustainable use**

“States shall maintain ecosystems and ecological processes essential for the functioning of biosphere, shall preserve biological diversity, and shall observe the principle of optimum sustainable yield in the use of living natural resources and ecosystems”⁴⁴. CRZ Rules are aimed at protecting coastal areas, fragile ecosystem and marine biodiversity while ensuring sustainable development. CRZ rules aims at protecting coastal habits like mangroves, coral reefs, wetlands which are crucial for biodiversity conservation and shoreline stabilization.

- **Pollution Control**

The rules aim to minimize pollution from industrial, agricultural and domestic resources, preventing degradation of water quality and marine ecosystems.

- **Coastal Erosion Prevention**

Regulation aims at preventing activities that contribute to Coastal erosion/beach erosion such as sand mining and unauthorized construction to maintain natural coastal processes.

- **Marine Conservation**

One of the CRZ goals is to preserve marine ecosystems and marine biodiversity by regulating activities such as fishing, dredging and disposal of waste to prevent damage to marine ecosystems and species.

- **Climate Resilience**

For maintaining climate resilience, the CRZ rules discourage construction in vulnerable coastal areas prone to flooding, storm surges and sea-level rise.

- **Preservation of cultural heritage**

CRZ regulations also consider the preservation of cultural heritage sites located in coastal areas ensuring they are not negatively impacted by development activities. CRZ rules also aims at supporting a wide range of plants and animal species. Conservation measures help safeguard the unique ecosystems and prevent the loss of biodiversity due to habitat destruction or fragmentation.

⁴⁴ Our Common Future – book by Brundtland Commission published in October 1987.

- **Encourage sustainable tourism**

Another purpose of CRZ rules is to encourage sustainable tourism practices that minimize negative impacts on the environment while providing economic benefits to local communities. This includes regulating tourist infrastructure development, coastal activities and waste management to maintain the integrity of coastal ecosystems. CRZ also encourages active participation from local communities' indigenous people and other stakeholders. This in turn help the authorities to be aware of the traditional knowledge in tackling coastal problems leading to better decision making, effective protection and management of coastal resources.

Stakeholder involvement and Consultation Process

For implementation of CRZ rules and regulations, the stakeholders who are affected by the CRZ regulations has to be identified. Some of the stakeholders are local communities' government agencies, environmental NGOs, fishermen, scientists in the field, tourism operators and real estate people. Input and feedback from stakeholders are essential before finalizing any policy. The stakeholders can express their views, share their knowledge and experiences and put forth their suggestions for improvement. Stake holders should be informed about proposed changes in CRZ rules, amendments etc through various channels including websites, social media newsletter and other media outlets.

A well-informed stake holders can help in the implementation process of the CRZ rules. The CRZ notification, provides for the enforcement mechanism with participation of stakeholders⁴⁵. The National Coastal Zone Management Authority (NCZMA) as well as the state and union territory CZMA are responsible for enforcement and monitoring of activities. The District Level Committees shall assist them under the chairmanship of the District Magistrate. The committee must include at least three representatives of local traditional coastal communities including the fisherfolk. The CZMAs can regularize the dwelling units of the traditional coastal communities including fisherfolk and tribal people subject to the conditions that they are not used for any commercial activity or not sold or transferred to non-traditional coastal community⁴⁶.

⁴⁵ SO 19(E) dated 6th January 2011 Para 6

⁴⁶ SO 19 (E) dated 6th January 2011, Para 6 (d)

How are the permissible activities in CRZ areas regulated?

All permissible activities are regulated by a clearance mechanism.⁴⁷ Environmental clearance from the MoEF&CC is essential for the following matters.

- Any activity requiring water front or foreshore facilities;
- Construction activities related to projects of department of atomic energy or defence requirements for which foreshore facilities are essential such as shipways, jetties and wharfs;
- Operational constructions for ports, harbours and light-houses and constructions for activities such as jetties, wharves, quays and shipways, pipelines, conveying systems including transmission lines;
- Exploration and extraction of oil and natural gas and all associated activities and facilities;
- thermal power plants;
- Housing schemes in CRZ as per norms specified;
- Mining of rare minerals;
- Specified activities/facilities in SEZ subject to one-time approval to such activities based on the master plan of SEZ, spatial distribution of projects to be located in CRZ and such other information as may be required for the purpose;
- Receipt and storage of petroleum products detailed in annexure III to the CRZ notification, desalination plants and storage of non-hazardous cargo such as edible oil, fertilizers and food grain within notified ports in the zones other than CRZ-I which consists of ecologically sensitive and important areas;
- Demolition or reconstruction of buildings of archaeological or historical importance, heritage buildings and buildings under public use;
- Other activities with investment exceeding five crore rupees but not regulated by state or union territories under CRZ notification.

⁴⁷ SO 19(E) dated 6th January 2011 Para 4

Significance of Coastal Zone Management

It is the duty of every nation to protect, preserve and develop its coastal regions and its resources. Improper developmental plans can cause damage to the ecologically sensitive coastal zones. The authorities should give consideration to ecological, cultural, historic and aesthetic values as well as the needs of economic development.

Natural resources including wetlands, dunes, barrier islands, coral reefs, fish, wildlife and habitats in Coastal Zones are to be protected.⁴⁸ The Coastal Zone Management Act, 1972 (CZMA) is a federal attempt in the United States of America (USA) towards the protection of its coast. CZMA declares⁴⁹ to preserve, protect, develop and where possible, to restore or enhance, the resources of the nation's coastal zones for the present and succeeding generations.

Coastal Zone Management Authority and Coastal Zone Management Plans in India

The MoEF established SCZMAs⁵⁰ for each coastal state and union territory to monitor and implement the provisions of the CRZ Notifications. The NCZMA⁵¹ monitor and supervise the functioning of SCZMAs. It is the duty of the SCZMA to implement the Coastal Regulation Zone rules and to prepare CZMPs⁵² including mapping HTL, LTL and hazard line.

The CZMAs, through their website publishes their agendas, minutes, decisions taken, clearance letters, violations, action taken on the violations, court cases including judgments taken by the High Courts, the approved CZMPs etc.

The State Government and the SCZMA prepares the draft CZMPs by engaging reputed scientific institutions which are authorised agencies of MoEF. Public consultations are held by the authorities and the CZMP is finalized which are sent to MoEF for approval.

⁴⁸ Leela Krishnan. Environment Law in India Lexis Nexis

⁴⁹ Coastal Zone Management Act, 1972, Section 303. <https://www.boem.gov.in>

⁵⁰ State Coastal Zone Management Authority.

⁵¹ National Coastal Zone Management Authority

⁵² CZMP Coastal Zone Management Plan

Overview of the Committees formed under MoEF to look into the implementation of the CRZ notifications.

1) B.B. Vohra Committee – 1992⁵³

The Vohra Committee was entrusted with the tourism related issues in CRZ notification 1991. It recommended for reduction in the No Development Zone for promotion of tourism.

2) Prof. N. Balakrishnan Nair Committee – 1996.

This committee recommended for reducing the No Development Zone from 500 metres to 50 metres along tidal lines.

3) Fr. Saldana Committee – I

His recommendation was related to the withdrawal of ground water and extraction of sand in Andaman and Nicobar Islands.

4) Dr. Arcot Ramachandra Committee 1996.

This committee was entrusted with making recommendations regarding activities that should be incorporated on India's seaward coasts.

5) Fr. Saldana Committee II – 1997 examined special issues of coastal zones in India.

6) D.M. Suthankar Committee – I 2000 examined the coastal issues related to Mumbai and Navi Mumbai.

7) Dr. Swaminathan Committee report on CRZ notification, 1991. Many deviations, revisions suggestions from the various committees mentioned above distorted the CRZ Notification 1991. As a result, it was difficult to execute the notification. Dr. Swaminathan Committee was constituted to evaluate CRZ 1991. A group of experts was included in the said committee chaired by Dr. M.S. Swaminathan, an eminent scientist⁵⁴. The committee emphasized the importance of sustainable coastal management and integrated coastal management rather than coastal regulation. For this purpose, the committee compared the coastal zone management techniques of several countries including USA, UK and Australia. Guiding principles for coastal zone management as suggested by Dr. Swaminathan Committee.

⁵³ Scribd – <https://www.scribd.com>

⁵⁴ Arathy Sridar and others review of Swaminathan Committee report on CRZ notification, UNDP New Delhi (2006)

- Security for the environment, coastal culture and livelihood.
- The current infrastructure needs of the coastal zones and direct resource-based livelihoods in the coastal area.
- Extension of the coastal belt on the landward side to include a wider coastal zone that includes the offshore seas, out to a distance of 12 nautical miles from the shoreline.
- Using a participatory management strategy for the shore.
- Ensuring compliance with local, state, federal and international laws while laying out proposed changes to the laws; and
- Using good scientific and ecological principles to manage coastal zones.
- Proper application of the precautionary principle, especially in order to get beyond the issue of scientific uncertainty when determining the adverse effects of human activities on the coast.
- The “Public Trust Doctrine” and the “Polluter Pays Principle” should be used to control coastal development.
- Encouraging the restoration of coastal ecosystems, particularly coastal forests and mangroves, and coral reefs.

Conclusion

The Coastal Regulation Zone (CRZ) rules and regulations were implemented to regulate and protect the fragile ecosystems along the coasts. This was necessary to balance economic development and environmental preservation. The CRZ rules aim to ensure sustainable coastal management along with safeguarding the livelihoods of coastal communities and preserving the ecological balance for future generations. Other purposes include conservation of biodiversity mitigation of natural disasters like Cyclones and Tsunamis by regulating construction and development activities along the coast. The rules protect the interests and rights of coastal communities including traditional fishermen and other local inhabitants. It also provides a legal frame work for coastal management so that the authorities are empowered to enforce regulations and take action against violations. This ensures compliance and accountability in coastal development projects. The rules help strike a balance between development aspirations and environmental conservation imperatives.

CHAPTER 3: ANALYSIS OF COASTAL REGULATION ZONE NOTIFICATION, 2019- ENFORCEMENT AND IMPLEMENTATION

*“Of the Coastal People none do sing the praise
Of their love of the sea and of their Coastal Ways
Of the surfies and sea lovers’ poets seldom sing
And we seldom hear of the cool Coastal Spring”*

- Francis Duggan⁵⁵

Introduction

Coastal zones have contributed a lot towards the evolution of human civilization. Though the coastal zones occupy only 8% of the earth's lithosphere (outer part of the Earth) which is suited for human habitation, it has a high concentration of human population. Around 37% to 44% of the world's population resides within 100 km and 150 km of a Coastline respectively.⁵⁶ Coastal zone is the area of interaction between land and sea which is influenced by both land and marine environment. Anthropological interventions in coastal zones have paved the way for environmental degradation which can jeopardise the livelihood security of the marginalised sections of the coastal inhabitants.

Abuse and misuse of coastal zones should be curbed whether it is from the coastal inhabitants or from influential industrialists or real estate owners who prioritize economic interest above all other concerns.

⁵⁵ Francis Duggan is an Irish Poet who created a bond between humanity and nature

⁵⁶ Jitendra K. Panigrahi, Pratap. K.Mohanty - Effectiveness of the Indian Coastal Regulation Zones provisions for coastal zone management

The CRZ Notification, 2019 was the result of the Report of Shailesh Naik Committee Report, 2014.⁵⁷ The changes brought in through CRZ Notification, 2019 provided opportunities to improve construction work in CRZ, regulations were made easier for infrastructure development, keeping in mind the protection, preservation and management strategies of coastal regions. Development with Sustainable coastal management is the main crux of the notification.

The CRZ rules and regulations are pertinent in guiding the survival and livelihoods of coastal communities. The natural contributions of the coasts such as the preservation of aquatic equilibrium, soil erosion regulation and surplus dispensation of waste are even more significant to safeguard the health and resilience of coastal areas.⁵⁸ The objectives of CRZ Notification 2019 envisages the following:

1. To encourage sustainable development grounded on scientific ideologies considering the environmental hazards that have increased due to global warming.
2. The second goal is to conserve and protect coastal and marine environments as well as fisherfolk and other coastal populations and their livelihoods.⁵⁹

The CRZ, 2019 emphasises (i) the protection of environmentally fragile coastal zones including mangroves, coral reefs etc, that act as a barrier from natural forces like cyclones, tsunamis etc. (ii) to stabilise the progress of coastal zones and marine ecosystems (iii) the upliftment of traditional coastal inhabitants like fisherfolk etc.

Classification and Zoning of Coastal Areas

CRZ-2019 is to classify coastal zones, preserve and safeguard coastal lands and marine waters. Clause 3 demarcates the Critically Vulnerable Coastal Areas (CVCA) in India.⁶⁰ These coastal areas should be regulated with the active participation of the coastal communities residing there.

⁵⁷ Review the issues relating to CRZ Notification, 2011

⁵⁸ P.B. Sahasranaman. The Law Relating Protection of Coastal Areas. 9th Edition - 1 January 2019

⁵⁹ www.fisherieskeralagov.in

⁶⁰ Clause 3.1 of CRZ, 2019 identified Sunderbans region of West Bengal and other ecologically sensitive areas such as Gulf of Kutch in Gujarat, Karwar, Kuntapur in Karnataka, Vembanad in Kerala etc as CVCA.

Coastal zones are mainly classified into four zones viz, CRZ-I, CRZ-II, CRZ-III, and CRZ-IV. CRZ-I is further divided into CRZ-IA and CRZ-IB. CRZ-III is further divided into CRZ-IIIA and CRZ-IIIB. CRZ-IV is also divided as CRZ-IVA and CRZ-IVB. Thus, after subclassification, the zones come to seven in number.

Coastal boundaries of rivulets, in-lets, oceans, streams and backwaters that are influenced by tidal actions upto 50 metres from the High Tide Line and the land between the Low Tide Line and High Tide Line are Coastal Regulation Zones. These zones have special geomorphological features and Population density.

CRZ-I is divided into two, CRZ-IA & CRZ-IB. These are ecologically sensitive areas that lie between HTL and LTL.

CRZ-IA consists of mangroves, corals, coral reefs, sand dunes, biologically active mudflats, national parks, marine parks, sanctuaries, reserve forests and wildlife habitats, salt marshes, turtle nesting grounds etc. CRZ-IB is the intertidal zone in between HTL and LTL.

Permitted activities within CRZ

CRZ- II . These are urban coastal areas or Shoreline areas, CRZ- II constitute developed urban municipal areas provided with drainage and approach roads and other infrastructural facilities such as water supply, sewerage mains etc.

CRZ-III includes rural and urban areas. These are relatively undisturbed coastal areas and those which do not fall under CRZ- II . CRZ-III is further classified into CRZ-IIIA and CRZ-IIIB.

CRZ-IIIA are densely populated coastal areas having more than 2161 per square kilometre as per 2011 Census. Area upto 50m from the HTL on the landward side shall be earmarked as ‘No Development Zone’⁶¹ provided the CZMP as per the notification framed with due consultative process, have been approved. If not approved a NDZ of 200 metres shall continue to apply.

⁶¹ NDZ-for short

CRZ-IIIB are less populated coastal regions having population less than 2161- per square kilometre as per 2011 Census. Area upto 200 metres from the HTL on the landward side shall be earmarked as No Development Zone (NDZ).

CRZ-IV shall constitute the water area and shall be further divided into CRZ-IVA and CRZ-IVB. CRZ-IVA constitutes the water area and the sea bed area between the Low Tide Line upto 12 nautical miles on the seaward side.

CRZ-IVB areas include the water area and the bed area between LTL at the bank of the tidal influenced water body to the LTL on the opposite side of the bank. (Extending down from the mouth of the waterbody at the sea upto the influence of tide.)

CRZ-1A constitutes Ecologically Sensitive Areas (ESAs) which include geo-morphologic landscapes which have an influence in sustaining the natural environment of the coasts. It is the duty of the states and union territories to formulate a detailed CZMP⁶² for these ecologically sensitive areas.⁶³

Protective Measures Under CRZ 2019, Clause 4 of CRZ, 2019 prohibited certain activities within CRZ area, and some exemptions to permitted and planned activities in specific coastal regions are also provided in this Notification. The CRZ, 2019 Notification as in its earlier provisions prohibited the locating of new industries in coastal zones and the development of existing industries, commercial operations, or processes. It also forbade the setting up of new fish processing units.

Clause 4 (iii) of CRZ Notification 2019, prohibits manufacturing or supervision of oil, storage, or disposal of hazardous substances⁶⁴ in coastal regions and land reclamation, bunding or disturbing the natural course of seawater is not permissible under this notification and can be implemented with previous consent from the competent authority for permitted activities only.

⁶² CZMP - Coastal Zone Management Plan

⁶³ Clause 2.1.1(b) of the CRZ Notification, 2019

⁶⁴ Hazardous substances are specified in the Notification of the Ministry of Environment and Climate change number G S R 395 (1) dated 4th April, 2016

Expulsion of unprocessed waste and sewages from manufacturing units, offices or towns and other human settlements are stringently banned in coastal zones, and dumping of the city or town waste including building wreckage manufacturing solid wastes, fly ashes for land filling are not permitted in CRZ Zones. According to Clause 4 (vii). Port and harbour projects in high eroding stretches of the coasts mining of sand, rocks, and other substrata materials, dressing or altering of active sand dunes and drawal of ground water are not allowed. More than this to conserve marine ecology and aquatic life, discarding of debris into coastal sea waters shall be barred and disposal of plastic constituents shall not be assumed in the CRZ.

Permitted activities in various Coastal zones

CRZ-IA areas are ecologically the most sensitive areas. Therefore, eco-tourism activities such as mangrove walks, tree huts and natural trails are only permitted in this area.⁶⁵

- Clause 5 of CRZ 2019, permits eco-tourism, industrial tourism development, basis structures and activities in vulnerable areas and activities like mining for rare earth minerals in sand dunes and waste treatment in sensitive inter-tidal areas etc.”⁶⁶
- Clause 5.11 permits activities like arranging of pipelines, transmission lines, conveyance systems or mechanisms or construction of roads in mangrove shielded areas”⁶⁷.

But they are only allowed for public utilities and in exceptional situations such as defense, strategic purposes, etc. it is also provided in the CRZ, 2019 Notification that these activities should be focused on comprehensive marine, terrestrial or Environment Impact Assessment and it should also be endorsed by Coastal Zone Management Authority and permitted by MOEF, (Ministry of Environment and Forests and climate). The most important aspect of this Notification is that if through these activities if any mangrove vegetation is destroyed or affected at least three times of mangrove plantation should be done as compensation.⁶⁸ Clause 5. 1.2 (i) says land reclamation, bunding etc. are permitted and the foreshore activities like port, harbours, jetties, wharves, quays, slipway, bridges, hover ports for coast guard, sea links etc. are allowed in

⁶⁵ Clause 5.1.1 of CRZ Notification 2019

⁶⁶ Clause 5.1.1(ii)of CRZ Notification 2019

⁶⁷ Clause 5.1.1 (iii) of CRZ Notification 2019

⁶⁸ Clause 5.1.2 of CRZ Notification 2019

CRZ-IB”.⁶⁹ To reduce effluence in Coastal areas, the treatment amenities have been included in CRZ-1B area along with compulsory precautions. More than this, projects for defense, strategic and security purposes, exploration and extraction of oil and natural gas, storage of non-hazardous cargo, treatment facilities for waste effluents, etc. are also permitted. “Measures for control of erosion, facilities for receipt and storage of petroleum products and liquefied natural gas as specified in Annexure II to the Notification are also included. But it is specified that safety regulation, as well as guidelines issued by the Oil Industry Safety, Directorate in the Ministry of Petroleum and Natural gas and guidelines issued by Ministry of Environment, Forests and Climate Change, is necessary in this regard”.¹⁵

CRZ-II allows all activities in CRZ-IB and along with this the erection of buildings for residential purposes, schools, hospitals, institutions, offices, public places etc. shall be permitted.⁷⁰ The reconstruction of these buildings can be legalized if it is done without changing present land use patterns and it is also subjected to property, local town and country planning regulations. Expansion of vacant plots in designated areas for the construction of beach resorts or hotels or tourism development projects are subject to the conditions or guidelines.⁷¹

CRZ-III is a strictly restricted area. But in No Development Zone (NDZ) of CRZ-III, no construction activity but repairs and reconstructions are allowed without exceeding the floor space index.⁷² But agriculture, gardens, forests, and park can be constructed and with the permission of the coastal Management authority (CZMA). CRZ 2019 notification identifies the issues of coastal communities and facilities required for local fishing communities such as fish drying yards, auction halls, net mending for local fishing communities such as fish drying yards, auction halls, net mending yards, traditional boat building units and fish curing units can be established.⁷³ If there is a national or state highway passing through the NDZ of CRZ-III, they can build resorts, hotels, and associated tourism facilities subject to approved Coastal Zone

⁶⁹Annexure II of CRZ Notification 2019 deals with guidelines for development of beach resorts and hotels and tourism development projects in the designated of CRZ II areas

⁷⁰ Clause 5.2 (ii) of CRZ Notification, 2019

⁷¹ Annexure III of CRZ Notification, 2019 explains guidelines for development of vacant plots in coastal zones

⁷² Clause 5.3 of CRZ Notification 2019

⁷³ Clause 5.3 (ii) of CRZ Notification, 2019

Management Plans (CZMP). Temporary tourism facilities are permissible in No Development Zones (NDZ) and beaches of CRZ-III areas and such temporary facilities shall only include shacks, toilets or washrooms, shower panels, walkways, drinking water facilities and seating facilities etc. subject to Coastal Management Plan. The Notification allows these constructions within a 10 meters distance from the High Tide Line.⁷⁴ More than this, mining of atomic minerals as per the Mining and Minerals Act, 1957 is also permissible in this area. For example, in State of Kerala, atomic minerals are mined from the coastal zones of Kollam District by Kerala Minerals and Metals Ltd. (KMML).

No Development Zone of CRZ-III is now more open for construction and development. In vacant plots of coastal zones construction of resorts, hotels or tourism development projects is possible.⁷⁵ Construction and reconstruction of dwelling houses of the fishermen are allowed and through this provision, the new CRZ Notification identifies the traditional rights and customary uses of existing fishing villages. But there are some restrictions included and they are the restrictions that overall height of the building should not be more than 9 meters and with only two floors. The local communities including fishermen are permitted to facilitate tourism through home stay without changing the plinth area of existing houses and along with this rain shelters, community toilets and limestone quarrying also is permitted.⁷⁶

CRZ-IV authorizes traditional fishing activities and allied activities undertaken by local communities. Foreshore facilities like ports, harbours, jetties, projects for defense, strategic and security purposes, measures for control of erosion, projects for atomic energy pipelines, construction of memorials or monuments, and allied facilities by the concerned state Governments in CRZ IV areas are allowed in exceptional cases, with adequate environmental safeguards.⁷⁷

⁷⁴ Clause 5. 3 (ii) (a) – (b) of CRZ Notification, 2019

⁷⁵ Annexure III of CRZ Notification provides guidelines for construction in coastal zones

⁷⁶ Clause 5. 3 (iii) (a) (f) of CRZ Notification 2019

⁷⁷ Clause 5.4 of CRZ Notification 2019

Prohibited activities within CRZ

The following activities shall be prohibited, in general, within the entire CRZ and exceptions to these and other permissible and regulated activities in specific CRZ categories viz. CRZ-1, I, I and IV, shall be governed by the provisions of paragraph 5 of the rule:

- (i) Setting up of new industries and expansion of existing industries, operations or processes.
- (ii) Manufacture or handling of oil, storage or disposal of hazardous substances as specified in the notification of the Ministry of Environment, Forest and Climate Change number G.S.R.395 (E), dated the 4th April, 2016.
- (iii) Setting up of new fish processing units.
- (iv) Land reclamation, bunding or disturbing the natural course of seawater except for the activities permissible under this notification and executed with prior permission from the competent authority.
- (v) Discharge of untreated waste and effluents from industries, cities or towns and other human settlements.
- (vi) Dumping of city or town wastes including construction debris, industrial solid wastes, fly ash for the purpose of land filling.
- (vii) Port and harbour projects in high eroding stretches of the coast.
- (viii) Mining of sand, rocks and other sub-strata materials
- (ix) Dressing or altering of active sand dunes.
- (x) In order to safeguard the aquatic system and marine life, disposal of plastic into the coastal waters shall be prohibited and adequate measures for management and disposal of plastic find materials shall be undertaken in the CRZ
- (xi) Drawal of ground water.

Critically Vulnerable Coastal Areas (CVCA)

Clause 10 of CRZ 2019 deals with areas requiring special consideration and it requires that Integrated Management Plans (IMP) shall be prepared to conserve mangroves. To take care of the need of local communities and improve amenities such as dispensaries, schools, public rain shelters community toilets, bridges, road, jetties water supplies, drainage, sewerage and impact

of sea level rise and other natural disasters and IMP shall be prepared as per coastal zone management plans.⁷⁸

Clause 3 of CRZ,2019 enlists the CVCA's and they are Sunderban region of West Bengal, Gulf of Khambhat in Gujarat, Achra-Ratnagiri in Maharashtra, Karwar and Kundapur in Karnataka, Vembanad in Kerala, Gulf of Mannar in Tamil Nadu, Bhitarkarnika in Odisha, and Krishna in Andhra Pradesh.⁷⁹

These areas should be managed with the involvement of coastal communities including fisherfolks. For the management of Critically Vulnerable Coastal Areas, the CRZ, 2019 provides Integrated Coastal Zone Management Plans (ICZMP). Furthermore, in CRZ, 2019 the basic amenities such as, bridges, transportation, water supply provisions, hospitals, educational institutions, rain accommodations, communal toilets, drainages, and sewages can be constructed and it is to safeguard the interests of local communities residing in CVCA.

At the same time the Integrated Coastal Zone Management Plans are encompassed to reduce the disastrous impacts of Sea level rise and other coastal hazards and cyclones and all along with that, the Coastal Zone Management Plans are also mandatory. While constructing the basic amenities for local communities, due regards to the opinions of local communities including fisherfolks should be considered.⁸⁰

Inland backwater islands and islands along mainland coasts

Clause 10.2 (ii) of CRZ.2019 “covers all the inland islands in coastal backwaters and islands along the mainland coast and it defines that a No Development Zone of 20m for all Islands close to mainland and backwater islands is necessary.”⁸¹

This allotment of 20 meters No Development Zone within the mainland will provide similar treatments for all islands thereby protecting the island's unique geography and biodiversity. So,

⁷⁸ Clause 10 of CRZ Notification 2019

⁷⁹ CVCA are described in provision of 3 of CRZ Notification 2019

⁸⁰ Clause 10.1(ii) of CRZ Notification, 2019

⁸¹ Clause 10.2 (ii) of CRZ Notification, 2019

“activities near the island are regulated or limited to 20 meters from the coasts of the islands. Existing dwelling houses can be reconstructed or repaired but no new construction is allowed in this area”.

Clause 10.2 (ii) of CRZ Notification, 2019 “provides that foreshore facilities like fishing jetties, fish drying yards, net mending yards, fishing processing by traditional measure, boat building yards, ice plants, boat repairs and the like may be taken up in CRZ limits subjects to due environment safeguards.”⁸²

According to the Island Zone Protection Notification 2019. Integrated Island Management Plans can also be implemented on smaller islands that made up the archipelagos of Lakshadweep, Andaman and Nicobar.⁸³

Clause 10.3 (ii) of CRZ,2019 insist that all open spaces, parks, gardens, play grounds indicated in development area should be included in CRZ II zone and shall be categorized as no development zone. Building of civic amenities, ground and gymnasium meant for recreational, or athletic activities are permissible but the housing or profitable use of such open spaces are not permissible under CRZ, 2019 Notification.

Clause 5.4 of CRZ 2019 deals with the preparation of an **Environment Impact Assessment report** by the state government and insist on **Environment Management Plan** and **Risk Assessment Plans** before implementing these coastal projects. More than this the state government should discourse the appropriate issues raised by the public related to coastal development projects and should make a public hearing.⁸⁴

Coastal Zone Management Plan (CZMP)

The CZMP framed under CRZ Notification, 2019 should be revised or updated by all coastal states and Union Territories. CZMP is an innovative concept encompassed in CRZ Notification, 2019.

⁸² Clause 10.2(ii) (a)-(b) of CRZ Notification, 2019

⁸³ Clause 10.2 (iii) of CRZ Notification. 2019

⁸⁴ Clause 5.4 (XV)(a)(d) of CRZ Notification, 2019

Coastal states and UTs have to submit the Coastal Plan to MOEF for sanction at the earliest and all project plans and activities along with it.⁸⁵

Coastal states and UTs should prepare coastal plans in accordance with the instructions of reputed institutions or agencies, such as the National Centre for Sustainable Coastal Management (NCSCM) and, in discussion with relevant stakeholders. As per the CRZ Notification, 2019 coastal states should prepare a draft coastal map in consonance with Annexure IV of CRZ Notification, 2019.

Clause 6.2 of CRZ, 2019 insists that the Draft plan should be approved by the Ministry of Environment after evaluation including appropriate consultations and recommendations in accordance with procedures laid down in Environmental Protection Act, 1986.⁸⁶

The Ministry of Environment must consider and approve the Coastal Management plans submitted by the coastal states and the Coastal Management Plans should be reviewed before a period of five years by the concerned State Government or Union Territory. These provisions are intended to regulate uncontrolled development in the coastal regions of India. If it is implemented properly, it will be easy to control the environmental issues of coastal development projects to an extent.

CRZ Clearance needed for permitted and regulated activities

Coastal Zone Management Authority (CZMA) should give recommendations about CRZ Clearance to the MOEF. More than this the Environment Impact Assessment of the project should be done as per the Environment Impact Assessment Notification, 2006.⁸⁷

All these clearances are not needed for the construction of dwelling houses in local communities and they are given opportunities for basic construction facilities. Provision 8 of CRZ, 2019 mandates the following documents for getting CRZ Clearance for a coastal project.

- (i) Project summary details as per Annexure V of CRZ Notification 2019.

⁸⁵ Clause 6 of CRZ Notification 2019

⁸⁶ The Environmental Protection Act 1986 No.29 Act of Parliament 1986

⁸⁷ Number S.O 15.3.3 (F)14, Sep, 2006

- (ii) Rapid Environment Impact Assessment Report.
- (iii) Comprehensive EIA with cumulative studies for projects.
- (iv) Risk Assessment Report and Disaster Management Plans.
- (v) The project layout duly indicates the project boundaries and CRZ Map of the Project location.
- (vi) No objection certificate (NOC) or consent to establish a coastal project from the concerned State Pollution Control Board should be ensuring how the industrial effluents and sewages are disposed of, and the NOC should be obtained before the starting of construction of the coastal Project.

Based on these documents only, the concerned CZMA of each state makes recommendations on the development projects and will forward them to the MoEF within 60 days from the date of reception of all documents mentioned above. These clearances accorded to projects under this Notification are effective for seven years and further, for three years that validity can be extended.⁸⁸

Post-Clearance Monitoring

According to Clause 8. (ii) (vi) of CRZ Notification, 2019 Post clearance is also included to ensure environmental protection of coastal zones. The project developer proponent must present half yearly compliance report and it should be available to the public and should submit its report to CZMA (Coastal Zone Management Authority). It is mandatory that on the website of the concerned regulatory authority, this compliance report shall also be displayed.⁸⁹

Transparency in the working of Coastal Zone Management Authority

Clause 8 (vii) CRZ Notification 2019 says about a dedicated website which publishes post agenda, minutes, decisions taken, clearance letter violations, action taken on violations and court matters including Court orders are created to maintain transparency in the working of the Coastal Zone Management Authority.⁹⁰

⁸⁸ Clause 8 (ii) of CRZ Notification 2019

⁸⁹ Clause 8 (vi) of CRZ Notification 2019

⁹⁰ Clause 8 (vii) of CRZ Notification 2019

Enforcement and Implementation

For enforcement and implementation of the CRZ Notification, 2019 clause 9 deals with compliance conditions stipulated in CRZ, 2019⁹¹. As per clause 9, the powers are designated as per the provisions in Environment (Protection) Act, 1986. Under this Act, the Ministry of Environment, Forests and Climate Change, State Governments, and National State Coastal Zone Management Authority has the power to implement the provisions of CRZ Notification, 2019 and they are primarily responsible for enforcing and monitoring CRZ activities and District Level Coastal Management Committees are there to assist State Coastal Zone Management Authorities”. The following is the regulatory structure under CRZ, 2019.

Regulatory Authorities for Coastal Zone Management

Central Government	State Governments
Ministry of Environment, Forests and Climate Change (MOEF)	State Coastal Zone Management Authorities (SCZMA)
Central / National coastal zone management Authorities (CZMA)	District Coastal Zone Management Authorities (DCZMA)

Concerning the working of coastal zone management authorities, there are mainly three institutions responsible for the implementation of CRZ. They are;

- National Coastal Zone Management Authority at the center
- State/UT Coastal Zone Management Authorities (SCZMA, UTCZMA)
- District Level Committees in every district (DLCC)

These three regulatory bodies enquire about the CRZ clearances granted by the government whether conditions are properly followed by the project developers and if the project development objectives are following the Integrated Coastal Zone Management Plan etc. These three bodies are responsible for implementing the targets under Sustainable Development Goals also. The main issue is that the National coastal zone management authority is still an ad-hoc body and various coastal states have not created State Coastal Zone Management authorities till now. The Report of the Comptroller and Auditor General, 2022 pointed out that the working of SCZMA and DLCC failed to identify violations that are happening in CRZ zones.

⁹¹ Clause 9 (iv) CRZ Notification 2019

Conservation of Coastal Environment

CRZ 2019 mainly included the protection, fortification and administration framework for ecologically sensitive areas. Annexure 1 of CRZ Notification 2019, includes detailed guidelines for the protection of mangroves, seashores, and coral banks, and support in regulating coastal erosion, shoreline change, saltwater intrusion, etc. CRZ 2019 identifies the importance of coastal and an aquatic, and environmentally delicate zones and how the geo-structural landscapes perform a dynamic part in preserving the purposes of the coasts and how they assist as a normal fortification against environmental coercions such as hurricanes, tornadoes, and tsunamis. The Ecologically sensitive areas uphold the biotic veracity of the shoreline by maintaining a straight and ancillary ecosystem involvement in marine living. More than this numerous vital archeologic and heritage locations are also situated throughout Indian coastal zones.

In the CRZ Notification as well as in the policy guidelines, satisfactory provisions are combined to ensure the rights of coastal inhabitants residing in the coastal zone. The tendency to accommodate industrialization and tourism development will harm the coast environment. The expansion of aquaculture ponds, chopping of mangroves and positioning of new industries, resorts and coastal road projects are detrimental of the ecosystems. It is a recognized fact that the seaside zones are contaminated due to the expulsion of manufacturing wastes or urban manure. The coastal areas contain a lot of contaminated spaces and in such spaces, communicable infectious diseases can spread easily. Rigorous regulations must be implemented in coastal zones to reduce the threats of pollution. There are high prospects in the tourism industry when a well-regulated policy will mutually work for the betterment of the coastal zones and eco-tourism.⁹²

All coastal strategies, execution of schemes, development projects, tourism activities, and connected coastal initiatives must invariably identify the welfare of fishermen and the fishing community. The best impact of CRZ notification, 2019 will be that it assists those traditional fishermen more than the new generation which depends on more modern techniques for fishing.

⁹² V.Sunder Raj, *Why We Need a Coastal Protection Act?* DOWN TO EARTH, (Jan.18.2019), www.downtoearth.org.in

The CRZ Notification, 2019 assure protection to the coastal inhabitants for their life and property in the coastal zones which are open to natural hazards.

The CRZ, 2019 permits the developmental needs of the CRZ-II (Urban) area by allowing construction projects through the removal of fixed Floor Area Ratio norms. It also provides greater development opportunities for densely populated rural areas under CRZ-IIIA through the relaxation of NDZ from 200m to 50m from HTL. The New CRZ, 2019 also considers conservation and management plans for Ecologically Sensitive Areas and provides facilities for pollution management in coastal areas.

Blue Flag Certification: More than the provision included in CRZ Notification, 2019, MOEF has an understanding to watch and reserve the coastal atmosphere and regulate and reduce contamination, fixes to endorse seashores areas to be recognized internationally under Blue Flag Certification.⁹³ The Central Government asserts that for achieving Blue Flag Certification in designated beaches ensuring activities and facilities can be allowed in Coastal Regulation Zone (CRZ) to maintain a minimum 10 meters distance from HTL.⁹⁴ It includes the construction of toilet blocks, rooms for changing, and panels for the shower, solar power plants, solid waste management facilities, grey water treatment plants, purified drinking water facilities, beach access paths, landscape lighting, outdoor play areas, CCTV surveillance, and other related facilities or infrastructure needed to meet Blue Flag Certification requirements.

CRZ Clearance: The significant modification brought by Coastal Regulation Zone Notification, 2019 is streamlining of coastal clearance in India. CRZ, 2019 Notification directs only projects under CRZ-I and CRZ-IV would require clearance from MOEF. The authority for clearance concerning CRZ-II and CRZ-III projects has been assigned to respective states with compulsory supervision. Earlier in CRZ 2011 Notification the complete authority was entrusted to Central Government.⁹⁵

⁹³ Order No. S.O 125(E) dated 9 January 2020

⁹⁴ Environmental protection Act, 1986 3 (2) (v) (i) No. 29, Act of Parliament, 1986

⁹⁵ Four years of contentious coastal regulation reforms in India. What is the debate? December 2018, www.cpr.india.org

Rural Area Development: Comparatively populated rural areas were afforded a bigger opening for expansion. For CRZ III areas, two distinct zones have been included now. They are CRZ III A and CRZ IIIB. The development of these areas is permitted and construction activities for basic amenities for the benefit of coastal people and tourism promotion are also included.

Urban Area Development: CRZ 2019 Notification, CRZ II (Urban Area) Floor Space Index (FSI) or the Floor Area Ratio (FAR) to permit construction projects for the development of such areas to face evolving needs of coastal inhabitants.

Tourism Infrastructure: The 2019 CRZ strengthens the inclusion of fundamental facilities in coastal areas for the development of tourism infrastructure. Temporary tourist facilities, including shacks, restrooms, drinking water facilities, etc., are now allowed in the “No Development Zone” (NDZ) of the (CRZ – III areas as well, according to the CRZ 2019 Notification.

Island Conservation: CRZ 2019 Notification specifies that there should be a “No Development Zone of 20 m for all islands adjacent to the coastal mainland and all Backwater Islands in the mainland”.⁹⁶ It is for carrying the standardization in the management of island areas due to space restrictions and the extraordinary geography of such regions and it is considered beneficial to those regions.⁹⁷

Ecologically Sensitive Areas Conservation: CRZ 2019 Notification provides specific guidelines for conservation and management plans for Ecologically Sensitive Areas.

Pollution Abatement: Detailed guidelines associated with the upkeep and supervision of coastal zones and inclusion of Coastal Zone Management plans are encompassed as a part of CRZ, 2019. To address pollution in coastal areas, CRZ 2019 notification allows treatment facilities as permissible activities in CRZ IB areas.

⁹⁶ Clause 10.2 (ii) of CRZ Notification, 2019

⁹⁷ Jayashree Nandi, *New Island rules Makes green activists Worried*. HINDUSTHAN TIMES (March 27,2019) <https://www.hindustantimes.com/india-news-island-rules-make-green-activists-worried/story-aFWB7brZfeDDzbPIPusReM.html>

Defense Infrastructure: CRZ 2019 Notification accords necessary dispensation for defense and strategic projects. It aims to include employment and promotes financial/commercial growth and transformation of coastal areas.

No development Zone of 20 meters has been stipulated for all islands: Clause 10.2(ii) of CRZ Notification, 2019 includes a special provision for islands close to the mainland coast and for all backwater islands in the mainland.

CRZ areas falling within municipal limits of Greater Mumbai: CRZ, 2019 gives special consideration to Greater Mumbai and it is observed that the green lung of Greater Mumbai should be protected. As per clause 10.3 of CRZ, 2019 “all open spaces, parks, gardens, play grounds within CRZ-II should be categorized as No Development zone.”

The fishing population encounters so many issues because of the reduction of development restrictions in coastal zones.

The beaches are permitted for temporary tourist amenities such as sheds urinal blocks, clock rooms, drinking water supplies, etc. These temporary tourist services are now permitted in the CRZ-III’s “No Development Zone” (NDZ). Allowing such projects close to HTL will hasten pollution in coastal zones and that the construction will eventually become permanent.

Only those coastal projects that are located in the CRZ-I (Ecologically Sensitive Areas) and CRZ-IV (area covered between Low Tide Line and 12 nautical miles seaward) only needs CRZ clearance from MOEF.

CRZ 2019 notification provides more prospects for development in densely populated rural areas. Approval by the concerned local authority may be required for coastal inhabitants dwelling units up to a total built-up area of 800 sq.m. The approvals of the State Coastal Zone Management Authority are not required for here.

Building and developmental activities could be undertaken towards the landward side from the 50-meter point of the High Tide Line (HTL). Though this provision is intended to carry on

housing activities for coastal dwellers there is a chance that this provision will be highly misused and will increase construction near coasts.

All other CRZ-III areas with inhabitants of less than 2161 persons per sq.km will be selected as Coastal Regulation Zone III B.⁹⁸ In these zones, the construction activities will be legalized beyond the 200-meter demarcation beginning from HTL to the landward side.

Coastal vulnerabilities

According to the Indian National Centre for Ocean Information Service, sea level along with Indian coastlines is rising by 0.33 to 5.16 mm annually, and future decades will see an increase in the frequency and severity of unseasonal and life-threatening climate shifts. However, the CRZ, 2019 Notification does not solve this problem. It is also criticized that it omitted the increased coastal erosion. Coastal erosion is a natural phenomenon but by allowing land reclamation and other activities through CRZ, 2019 Notification the erosion will be increased in the future.

CRZ, Notification 2019 allowed housing, toilets and other accommodations just 50 meters from the coastline, and it will be unsafe for the coastal inhabitants, and they will be vulnerable to severe weather events.

The fishing community may encounter issues because the subsequent relaxation of development controls could be a burden for them by adjusting their lives according to commercial pressures. The outcome of CRZ Notification, 2019 which authorizes building and tourist facilities nearer to the coast may enhance employment and promote local business, but without robust environmental safeguard policies, these could damage fragile coastal system.

Eco-tourism is allowed in ecologically sensitive coastal zones and allied constructions are also permitted in that area. Environmentalists contend that such environmentally delicate zones and other critically vulnerable coastal areas should be excluded from all kinds of development gearshifts, and they should focus to avoid severe commercial pressures.

⁹⁸ Clause 2.3.1. of CRZ Notification 2019

Seaside and estuarial coastal systems have become intensely intolerant to anthropological activities through coastal pollution. This coastal pollution and its all-inclusive impacts have caused various coastal problems such as the degrading of surrounding waters with organic matter leading to eutrophication, pollution by chemicals such as oil, and sedimentation due to land based activities or rise in sea level due to the global climate change.⁹⁹ More than 80% of marine pollution comes from inland sources like factories, farms, and cities¹⁰⁰ Pollution is the result of human activities, including seaward oil and gas production and marine oil transportation.

The environment is being contaminated and it is creating serious impacts on coastal inhabitant's livelihoods. Furthermore, with speedy urbanization and industrialization coasts have become suitable dumping grounds, sewage, garbage, and sludge from industrial processes land upon the coastline and make the life of coastal dwellers miserable.

CRZ 2019, is not providing any detailed guidelines to lessen coastal pollution. CRZ 2019, only forbids the dumping of wastes near coastal zones. But ecologists point out that explicit guidelines and policies are necessary to reduce coastal pollution.

The International Coastal Zone Management (ICZM) principles are not correctly applied and CRZ laws remain to be feeble viewpoints in implementing ICZM goals. CRZ 2019 is not focusing on the principles of adaptation which can help the challenges posed by Climate Change and Sea Level Rise in Indian coastal zones. More than this the basic principles such as the 'Doctrine of Public Trust', 'Doctrine of Polluter Pays Principle', and 'Inter-generational Equity' principles are not included in the underlying objective of Coastal Zone Management law in India.

Coastal Zone Management encounters issues in the Mapping, delineation, and demarcation of hazard lines and Environment Sensitive Areas (ESAs) all along the mainland coast of India. These issues would prerequisite a lot of deliberations and execution at the base level¹⁰¹. As an

⁹⁹ Dr. Tanmay Rudra, Dr. Guruswamy, *Marine Pollution Control and Management*, (Jnanada Prakashan 2010)

¹⁰⁰ Lorraine Chow, Ecowatch, June 15, 2016, www.ecowatch.com

¹⁰¹ R Sridhar et al, *A political, economic social, technological, legal, and environment ,(PESTLE) approach for coastal zone management practice in India*, 21 INT REVIEW OF PUBLIC ADMINISTRATION 3, 216-232(2015)

alternative to giving powers to the central Government, the powers should be given to state Governments because appropriate baseline data would help in the application at ground level, and it would benefit in formulating proper mapping of coastal regions which is expected to be followed by the supervisory activities and which will lead to the correct implementation of coastal zone management, should be given to state governments.¹⁰²

To administer coastal protection, land use awareness should be provided to the stakeholders and it should include the strategies for developmental activities, basic amenities constructions, building constructions and their advancements, and community usage of the land. The CRZ regulations should be stringently followed in the construction of structures and buildings in the various CRZ zones. The buildings should be higher than the Minimum Floor Level to escape from micro and macro climate variations like storm surges, floods, surfs, and sea level rise. All coastal fortification and administration functions on the coastline should be in accordance with the Seashore Management Plan and disaster management plan of the coast. It should be as per Climate Change Adaptation Guidelines and experts points out that such provisions are completely absent in CRZ, 2019.

To deal with climate-resilient coastal protection measures financial assistance from the center should be there for the coastal protection funding of the state government. The central government, coastal states, and Union Territories should ensure systematic training and capacity building in shore protection and supervision with proper funding. As in the USA, the scheme of coastal zone management in India should reflect a cooperative venture among union and coastal states, and for that purpose, a centrally structured financial strategy is to be incorporated into the legal system to back up a sound coastal management policy ¹⁰³.

The coasts of India are generally facing environment damage, displacement of coastal inhabitants, and injury to the livelihoods of masses who depend on the ocean for their endurance. Coastal communities' assets that traditionally the coastal land belonged to them and the coastal

¹⁰² Kiran Narayanan, *Coast for concern: CRZ to hit Kochi again*, INDIAN EXPRESS (May 12, 2021.), www.indianexpress.com

¹⁰³ Arjith Banerji, *Protecting India's coastline*, www.worldbank.org

people's rights in a coastal area should be respected. The CRZ Notification's preamble and the Supreme Court's judgment only briefly mention the fisherman's rights. In *S. Jagannath V. Union of India*,¹⁰⁴ a landmark judgment, the Court mentioned the adverse impacts of coastal pollution caused by non-traditional and unregulated prawn farming." It was held that, "The purpose of the CRZ Notification is to protect the ecologically fragile coastal areas and to safeguard the aesthetic qualities and uses of the seacoast. The setting up of modern shrimp aquaculture farms right on the seacoast is per se hazardous and is bound to degrade the marine ecology, coastal environment and the aesthetic uses of the sea coast".

¹⁰⁴ AIR 1997 SCC 811

CHAPTER 4: CONTRIBUTION OF INDIAN JUDICIARY TOWARDS PROTECTION OF COASTAL AREAS

Introduction

The Indian judiciary plays a crucial role in environmental protection through its interpretation and enforcement of environmental laws. Over the years, the courts have delivered landmark judgments and directives to safeguard the environment, address pollution, promote sustainable development and protect natural resources. Judicial Activism and public interest litigations contributed a lot in formulating new laws and regulations in this field. Courts often hear cases related to violations of environmental norms, illegal construction, and encroachment in coastal area, ensuring that regulations are upheld to safeguard fragile ecosystems and communities in these regions. Judiciary actively, engages in setting precedents and interpreting laws to address emerging, environmental challenges such as climate change impacts on coastal area, biodiversity loss, and pollution.

By upholding the principles of environmental justice and sustainable development, the judiciary promotes accountability among stake holders, encourages public participation in decision-making process fosters greater awareness about the importance of preserving coastal ecosystems for future generations. The judiciary often collaborates with government agencies, NGOs, and experts to implement innovative solutions and best practices for coastal zone management, ensuring a balanced approach that considers both environmental conservation and socio-economic development.

Indian Coastal Regulation Zone Notifications include provisions for the preservation of fragile ecology and ecosystems near all streams, creeks, lagoons, estuaries coral reefs, mangroves, marshlands and backwaters. The frequent amendments in CRZ Notifications from 1991 to 2019 and the uncertainties associated with legislation and administration are creating hurdles in coastal management and administration.

Environment Law Doctrines

Supreme Court judgments in various environment law cases has recognized a range of principles and norms to protect the environment. Notable among them are a) The Polluter Pays Principle, b) The Public Trust Doctrine: c) The Precautionary Principle; d) The inter-generational Equity principle; e) Sustainable Development etc.

- a) **Polluter Pays Principle:** In *A.P. Pollution Control Board V. Prof. M.V. Naidu*¹⁰⁵ the court emphasized application of environmental principles in the protection of the environment according to Sec. 20 of the National Green Tribunal Act,¹⁰⁶ the National Green Tribunal can apply the principles of Sustainable development, Polluter Pays Principle, Public Trust doctrine and Precautionary Principles while passing any order, award or decision for the balanced development without harming the ecological balance of earth. These concepts can be applied in coastal management. Furthermore, in numerous cases like *M.C Mehta V. Union of India*¹⁰⁷ popularly known as the Taj Trapezium Case and *Vellore Citizens Forum v. Union of India*¹⁰⁸ and in *Indian Council for Enviro Legal Actions v. Union of India and others*¹⁰⁹ the supreme court emphasized the need for complying with the doctrine of Polluter Pays Principle.
- b) **Public Trust Doctrine:** Public Trust Doctrine primarily enforces a legal right and positive obligation for the state to perform its duty and the principle that certain resources like air, water, sea, and the forests have such a great importance to people as a whole that it would be wholly unjustified to make them a subject of private ownership.¹¹⁰ Major resources that are commonly available for mankind are air, water, sea shores, and coastal zones. In *M.C. Mehta v. Kamal Nath*¹¹¹, in this case, the Supreme Court of India held that all natural resources which are by nature meant for public use and enjoyment must be held in trust by the state and the public at large are the beneficiaries of these natural

¹⁰⁵ AIR 1999 SC 812

¹⁰⁶ National Green Tribunal Act 2010

¹⁰⁷ 1987 SC R (1) 819

¹⁰⁸ 1996 (5) SCR 241

¹⁰⁹ AIR 1996 SC 1446

¹¹⁰ P.M. Bakshi, *Environmental Law – Some Issues for Future*, Indian Law Institute 1-49 (1992)

¹¹¹ (1997) ISCC 388

resources. In *Fomento Resorts and Hotel's v Miguel Martins*¹¹², Court held that -- "Certain natural resources such as the river, sea shore are common properties and people are entitled to uninterrupted use of it and state cannot transfer it to private parties, if such a transfer interferes with the right of the public." Here the court also emphasized the need for preserving the customary rights of traditional communities". The CRZ Regulation should work as an instrument that permits the traditional fishing community rights and, in that regulation, the traditional techniques of fishing should receive the preferences in permissible activities in coastal regulation zones. In *Shailesh R. Shah V. State of Gujarat*¹¹³, also the court stated that the state holds all resources like, lake, pond, natural gases, wetlands, and as the state is held as the trustee and the State must maintain and protect them for public use. In the Coastal Protection case, the Supreme Court observed that the non-implementation of coastal law often results in ecological imbalance and degradation of environment and the hostile consequence of which will have to be borne by the future generations.¹¹⁴ **In Jagannath V. Union of India**, (Shrimp Culture case) the apex court opined that sustainable development should be the guiding principle for shrimp aquaculture and by following the natural method, though the harvest is small but should be sustainable over long periods, and it has no adverse effect on the environment and ecology. Court also reiterated that all projects and policies in the environment fragile area require an Environment Impact Assessment (EIA) before permission is granted and to install commercial shrimp farms also, the assessment must take into consideration.

- c) **Precautionary Principle:** The precautionary principle is a cost-effective way to minimize environmental pollution and damage. Rio Declaration on Environment and Development, 1992, clearly defined the Precautionary Principle. "Where there are threats of serious or irreversible damage, lack of full scientific certainty shall not be used as a reason for postponing cost-effective measures to prevent environmental degradation."¹¹⁵

¹¹²(2009) 1 SCC 100

¹¹³(2002) SCC Online Guj.164

¹¹⁴AIR 1997 SC 811

¹¹⁵Principle 15 of Rio Declaration on Environment and Development 1992 introduced the Precautionary approach – the need of anticipation

In Vellore Citizens Forum Case¹¹⁶, the Apex Court developed certain concepts for the precautionary principle. ‘They are Environmental measures to anticipate, prevent, and attack the causes of environmental degradation. Lack of scientific certainty should not be used as a reason for postponing measures and the onus of proof is on the actor to show that his action is benign. The precautionary principles, as applied by the Court in the case of **Vellore Citizens Welfare Forum v. Union of India**¹¹⁷ execute a responsibility on each civic policy to promote this doctrine. The application of coastal protection is also visible in **S. Jaganath V. Union of India**.¹¹⁸

- d) Intergenerational Equity:** The principle of intergenerational equity promotes sustainable development. The present generation has a responsibility and obligation to protect the environment for the benefit of both the present and future generations through careful management and supervision of natural resources as they provide the resources necessary for both current and future generations to survive.¹¹⁹
- e) Sustainable Development in Coastal Zones:** Article 21 (Right to Life) of Indian Constitution provides that every single citizen has a right to live in a healthy and clean environment. The Supreme Court has just observed that a hygienic environment is an integral part of the right to a healthy life, and it would be impossible to live with human dignity without a humane and healthy environment.¹²⁰ In 1981, for the very first time sustainable development was defined and published by the International Union for Conservation of Nature and Natural Resources (IUCN) the World Wildlife Fund (WWF), and The United Nations Environment Programme (UNEP) in the document titled “World Conservation Strategy, Living Resource Conservation for sustainable development.¹²¹ According to the definition for development to be sustainable it must take account of social and ecological factors as well as economic ones and the living and non-living resources base and the long term as well as the short-term advantages and disadvantages

¹¹⁶(1996) 5 SCC 647

¹¹⁷ (1996) 5 SCC 647

¹¹⁸ (1997) 2 SCC 87

¹¹⁹ A.P. Pollution Control Board v. M.V. Nayudu (1999) 2 SCC 718

¹²⁰ Subhash Kumar v. State of Bihar. AIR 1991 SC 420

¹²¹ World conservation Strategy 1980

of alternative actions. In the year 1987, World Commission on Environment and Development published its Report titled “Our Common Future” which included the first official definition of the concept of sustainable development. According to the Report “sustainable development” is a development that meets their own needs.¹²² The Supreme Court in India has a major role in the implementation of the right to sustainable development as one of the dedicated principles of environmental jurisprudence in India. The concept of sustainable development is a guiding philosophy that is essential to the future administration of the environment. The Honourable Supreme Court interfered in cases associated with the issue of the Central Government diluting CRZ norms for Beach Resorts.¹²³ The lack of interest of Coastal States and Union Territories to prepare Coastal Zone Management Plans in the given period and the other instances interrelated with industrial, construction and coastal practices have been dealt with by the court. **In Pooja Kumar V. Union of India**,¹²⁴ the judiciary instructed the project proponents to develop a green belt around the project area and instructed the pollution control board to monitor the construction activities. The Supreme Court in its judgment, **Indian Council for Enviro legal action V. Union of India**, held that the primary effort of the Court was to see that the enforcement agencies, whether it be the State or any other authority, take effective steps for the enforcement of the laws on coastal issues. The Court emphasized that Coastal Zone Management Authorities (CZMAs) should be designed to manage the application of the CRZ Notification and deliver guidance to the MoEF on questions of coastal regulations.

Case Laws

The first judgment related to coastal protection is popularly known as the CRZ Notification case¹²⁵. It emphasized that Coastal Zone Management Plans (CZMPs) must be organized by State Government within the statutory period of one year. However, it also had to deal with

¹²² Starke Linda, *A Study on the Law Relating to Industrial Pollution under Environment Law* OU Press (1990)

¹²³ Meenava Thanthai K.R. Selvaraj V. Chief Secretary, Tamil Nadu, O.A. 225 of 2016

¹²⁴ O.A.No.23 of 2017

¹²⁵ Indian Council for Enviro-Legal Action vs Union of India, (1996)5SCC281

problems caused by the Central government's habit of making frequent changes to the law, beginning in 1994, to loosen certain prohibitions relating to restrictions in coastal zones.

For the operative execution of the 1991 Notification, it engaged the Central Government to consider constituting State and National Coastal Zone Management Authorities (CZMAs) in incorporating the concept of a coastal zone management plan in the CRZ Notification 2011.

Commercial/Industrial Activities in Coastal Zones:

In S. Jaganath V. Union of India' popularly known as the Chilka Lake case¹²⁶, the petitioner, an NGO fought to enforce the CRZ Notification, 1991 through the Supreme Court of India. According to the Petitioner, it is unacceptable to conduct intensive or even semi-intensive shrimp farming in ecologically vulnerable shore areas. The party filed a writ petition for instantly, discontinuing shrimp cultivation in the eco-sensitive coastal zones and for barring the abuse of wastelands and wetlands in the name of shrimp farming. The Court analyzed expert information and reports to recognize the disagreeable effects of coastal pollution generated by non-traditional and intolerant shrimp farming. The requirement for establishing a National Coastal Zone Management Authority was also prayed by the petitioner. It was also contended that business houses were developing prawn farming on a huge scale in the coastal states by infringing the provisions of the Environmental (Protection) Act, of 1986. The shrimp industries in that area generated a threat to the conservation of the biological diversity of the region.

One of the CRZ Notification is to preserve the seaside's aesthetic potential and protecting its naturally vulnerable coastal zones. So, by taking a serious view of the matter, the Apex Court appointed National Environmental Engineering Research Institute (NEERI) to enquire about the coastal pollution which can be created by shrimp farming. They discovered that the effect of shrimp agriculture was severe as it was contaminating surface marine water resources, polluting soil and groundwater, and accelerating the devastation of mangrove vegetation Shrimp farming was triggering harm to the coastal ecology, and biological diversity.

¹²⁶ AIR 1997 SCC 813

The court held that such farms must be demolished and removed instantly, and an authority was directed to establish with power to protect the ecology of the coastal region. The court applied the 'Polluter Pay' principle in this case. The aquaculture industry, shrimp culture industry, shrimp culture ponds other than traditional ones may be erected outside coastal zones as defined by CRZ Notification.

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. 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 especially to deal with the situation created by the shrimp culture industry in the coastal States Union Territories.

Lourdes D Costa V. Neendakara Grama Panchayath¹²⁷, Kerala Coast is famous for its rare minerals. But it has complained that searching for rare minerals and intensifying existing beach mining operations are violating the CRZ Notifications. The court directed the company to take steps to get an all-inclusive environmental assessment of the coastal zone in question and it should be conducted by a national institute in consultation with the state government. The company was instructed to mitigate the adverse environmental impact. At present serious cases are charged against certain sand, mineral mafia for exploitation of rare minerals in the coast of Kollam. The political leadership itself is supporting the exploitation.

Laying of Pipelines through CRZ Regions:

In Essar Oil Limited v. Halar Utkarsh Samiti¹²⁸, the case was related to laying pipelines in Marine National Park in Jamnagar and sanctuary in Gujarat. The activity was challenged due to some environmental concerns. The Supreme Court answered the question of whether pipelines carrying crude oil can be laid inside eco-sensitive areas like national parks and sanctuaries. The

¹²⁷ O.P.No.2507 of 1997 dated July 20th 1997

¹²⁸ AIR 2004 SC 1834

court observed that the laying of the pipelines is exempted in CRZ areas, and it is permitted for commercial purposes.

In *Envionsare Foundations v. Union of India*¹²⁹, the pipeline for carrying Naphtha from the refinery to the port was opposed by the environmental group because it infringes the CRZ Regulation. The court held that the Pipeline setting cannot be considered a prohibited activity and the only limitation is that it should get permission from the Ministry of Environment, Forests and Climate Change and that clearance has been granted by the Ministry. The court held that development and ecology have to be given equal importance.

Pidade Filomina v. State of Goa,¹³⁰ is a case in which the court explained the significance of CRZ Notifications in the interest of protecting the environment and ecology in coastal areas. A writ petition was filed against the appellants for building without permission. The High Court ordered the building to be demolished and asked Goa's State Coastal Committee for Environment to investigate. So, they are not entitled to any relief, and the court ruled that CRZ Notification was issued to protect the coastal environment and ecology.

In *Bombay Environment Action Group v. State of Maharashtra*¹³¹, the State of Maharashtra had 15,087.6 hectares of mangroves across the state as reserve Forests. The State permitted construction to take place within fifty meters of mangrove belt. In its landmark judgment, The Supreme Court held that;

“The destruction of mangroves offends the fundamental rights of citizen under Article. 21 of the Constitution of India. In view of provisions Act. 21. 47, 48A and 51 (g) of Constitution of India, it is a mandatory duty of state and its agencies and instrumentalities to protect and preserve mangroves.”

In ***Ansari Kannoth v. State of Kerala***,¹³² the case was related to the Pappinissery Eco-Tourism Society under Travancore Cochin Literary, Scientific and Charitable societies Registration Act,

¹²⁹ 2003 (2) Bom CR 519

¹³⁰ AIR 2004 SC 3112

¹³¹ AIR (1991) BOM 301

¹³² 2011 (1) KLT 1043

1955. On the banks of the Valapattanam river, a Mangrove Theme Park' was started and established by the above-mentioned society. It was alleged that Theme Park is situated in Coastal Regulation Zone I (CRZ I) and for the establishment of the project large destruction of mangrove forests happened and the project encroached on the river. Therefore, a public interest litigation was filed alleging that all acts of construction violated the Coastal Zone Management Plan. The Court recognized that the construction activities affected mangroves and the damage is severe in areas close to the main river. Court also was concerned about the heavy ingress of visitors and its negative impact on fragile coastal ecology. So, this fragile ecology must be protected, and the court found that the activities undertaken by the society violated the provisions of CRZ Notification. While delivering this judgment court mentioned the **Goa Foundation v. Diksha Holding Private Ltd**¹³³ case opined that the court must scrupulously try to protect the ecology and environment. The court held that society had undertaken an industry/process/operation which is not permitted in CRZ 1, therefore illegal and court directed to close the Theme Park.

In **Bombay Environmental Action Group and other v. The State of Maharashtra**¹³⁴ court imposed a total freeze on the destruction of mangroves which falls under the CRZ-I category and reiterated that:

“In view of applicability of the public trust doctrine, the state is duty bound to protect and preserve mangroves. The mangroves cannot be permitted to be destructed by the State for private, commercial or any other use unless the court finds it necessary for the public good or public interest.”

Protection of Wetlands:

Vamika Island (Green Lagoon Resort) v. Union of India¹³⁵, whether specific properties on an island in Kerala's Vembanad Backwaters should have been classified as CRZ-I, which prohibits its reconstruction or development, was the question before the court. The owner had broken the law by building on these sites, the court said, even though the properties had been correctly

¹³³ AIR 2001 SC 184

¹³⁴ WP No. 4138 of 2022

¹³⁵ (2013) 8 SCC 388

classified. The High Court's order to tear down the unauthorized construction was affirmed by the Supreme Court. The case raised important issues regarding wetland management and coastal ecology.

Whether the property close to the coastal area Green Lagoon Resort in Vamika Island of Vembanadu Lake, Cochin, is in the No Development Zone under CRZ Region was the key question up for argument before the honorable court. The court said that the CRZ Notification forbids any construction operations in the region after carefully analyzing the situation. The Supreme Court upheld the order to demolish already-built structures and found no justification to overturn the High Court's Judgment against the resort. In the CRZ Notification of 2011, the court emphasized the significance of Vembanadu Lake as a Ramsar site and as a critically vulnerable area (CVCA).

As Vembanadu Lake is a critically vulnerable coastal Area, the local inhabitants, fishers, and other communities living in that area should be given the opportunity for giving their opinion on the development of that area for promoting the preservation of natural and coastal resources and sustainable use of the coastal zone of Kerala.

Antony A.V.V. Corporation of Cochin¹³⁶, in this case, the petitioner who is residing on the western side of Chilavannur Lake and complained that the fourth respondent constructed a multi-storied building within 100 meters of the High Tide Line of Chilvannur Lake which is a wetland, violated CRZ Notification. The petitioner alleged that as per CRZ Notification 1991, 2011 construction is not permissible within 100 meters from the side of Chilavannur Lake. The petitioner further alleged that the respondent constructed the building without a no-objection certificate from Kerala Coastal Zone Management Authority. The petitioner complained that he submitted several complaints to Cochin Corporation, and they have not taken any steps and respondents did not give a stop memo to stop the unauthorized construction. The petitioner's main complaint was the inaction of the Cochin Corporation. So, the honourable court finally

¹³⁶ 2015 (5) FLT 332.2015 (1) KLT 178

decided that the CRZ Violations at Chilvannur are a serious environmental crime, and the buildings need to be demolished.

The Court observed that the purpose of these laws is to preserve nature for prosperity. If the violation of law is allowed to become order of the day, the existence of life would be in peril. Right to life guaranteed by Constitution takes innumerable rights including right to enjoy nature in present form. Indiscriminate invasion of nature to the detriment of others is an invasion of right to life.

The Secretary, Kerala Coastal Zone Management Authority v. DLF Universal Ltd¹³⁷. The dispute between developers of a housing project and the environment authorities is the crux of this case. Different authorities took different stands in this dispute. The developer claimed that they obtained all requisite permission and have proceeded with the project, But DLF Universal had not obtained the Environmental clearance and CRZ authorities took a stand against it after four years from starting the project. In this case, the court pointed out the sleeping role of authorities which developed into contradictory stand after starting construction. The court criticized that it is a matter of concern that the authorities have not performed their task with promptitude and they did not realize the importance of the role they played including Kerala Coastal Zone Management Authority. Court further opined that Specialized bodies like Coastal Zone Management Authorities have been created to deal with the protection of coastal zone for greater sensitivity. Court repeatedly emphasized the point that CRZ violations cannot be lightly condoned, and violators need to be punished at the same time. Authorities should not be allowed to continue a flip-flop-flip putting large investments at stake in jeopardy. The fault with DLF Universe was identified by the Court that it purchased land in the CRZ 1 region and the nature of the land is evident in the sale deed itself. So, the Honorable Court applied the principle of Polluter Pays Principle in this case and ordered them to pay a fine of Rs. One crore with strict adherence to the norms in the future.

¹³⁷ 2018 (2) SCC 203

In **Citizen Interest Agency v. Lakeshore Hospital and Research Centre Private Ltd**, the case was related to the construction of a hospital building in the CRZ area. It was believed that Lakeshore Hospital had been built in violation of the CRZ Notification, but the court decided that man-made waterways are not included in the CRZ after establishing the coastal zone. The hospital administration contended that the canal near the hospital and the construction site is artificial and not a component of the CRZ or a natural lake. There was no evidence provided to support the building's violations. The court held that there is no violation of CRZ rules in the construction of the hospital.

Institute of Social Welfare vs State of Kerala¹³⁸, The CRZ-II includes Cochin's Marine Drive neighborhood. Kerala State welcomed the coastal zone management plan and, a road is depicted between a building and a sea wall on the Marine Drive of Kochi. Although traffic activity is prohibited on that road for the convenience of the general public, it is used as a public road. The CRZ –II sector on Cochin Marine Drive was the source of the problem. The CRZ-II zone in Cochin is the Marine Drive area. Construction is permitted on the landward side because it is a road. The CZMP included a road designation for a newly built path that connected the waterfront with the surrounding building. The court ruled that there was no obstacle to building in that location. The government acknowledged that there is a road between the sea and the buildings, which was the subject of the debate regarding the road or footpath. Despite being in a CRZ II region, court found that the road and construction on the landward side are acceptable for the public good.

Jacob Vadakkancherry v. State of Kerala¹³⁹. In this case, citizens responded against the Kerala Government's plan to build a bridge that would link islands with the state's backwaters by demanding rigorous enforcement of the CRZ Regulations. 25 hectares of land close to Marine Drive were reclaimed as part of the Goshree bridge project in Cochin. The Administration countered that there would be no irreversible harm to the environment and that the proposed reclamation would not take place on territory that is a part of the CRZ. The Court

¹³⁸ AIR 1998 Ker. 114

¹³⁹ (2019) 7 SCC 248

held that reclamation cannot be outlawed. The public is entitled to infrastructure as a matter of government duty. A reclamation is therefore an option if it's required for the building of the Goshree Bridge.

In The Kerala State Coastal Zone Management Authority vs The State of Kerala Maradu Municipality and Ors¹⁴⁰, the Supreme Court of India ordered the demolition of five apartments in Maradu Municipality for the violation of the Coastal Zone Management Notification. The buildings were erected with the Panchayat's approval in Maradu Village.

The court ruled that local self-governments that issue building permits have a legal obligation to submit building permission requests, along with any necessary supporting documentation, to the Kerala Coastal Zone Management Authority. To monitor these kinds of operations and construction activity in regions that had been notified, coastal zone management plans are implemented. The tidal influence area included the area where the respondent's building activities took place, and according to the CRZ Notifications, 1991 construction activities were not allowed. In breach of the CRZ Notification 1991, the local authorities have approved the builder's request. The permission given by the panchayat was invalid and unlawful. In such an ecologically delicate area, no such activity is permitted, therefore the issuance of the building permit is unlawful. The directive was given to demolish all the structures in light of the investigation committee's findings. Experts in the field of the environment criticized the Supreme Court's ruling in this case. According to reports, the demolitions will cause further environmental pollution and coastal zone harm. However, the court stated that they would monitor the developments and clearing of the debris generated by implosion of the apartment and whether the debris had entered Kerala's ecologically sensitive backwaters. The Justice K. Balakrishnan Nair Committee was established by the court to award compensation of an amount of Rs.25 Lakhs for each person.

¹⁴⁰ Civil Appeal Nos 4784 - 4785 of 2019

Maradu Apartments demolition order

On 8 May 2019, the Supreme Court of India ordered five apartments in Maradu municipality in Kerala to be demolished within one month, for violation of Coastal Regulation Zone (CRZ) rules, although only four of these apartments had yet been constructed. These four, already occupied by tenants, were Jains Coral Cove (Jain Housing and Construction Ltd), H2O Holy Faith (Holy Faith Builders and Developers Pvt.Ltd) and Alfa Serene (Alfa Ventures Private Ltd) and Golden Kayaloram (KP Varkey & VS Builders). The fifth builder, Holiday Heritage, had scrapped the project.

The order was passed by a bench consisting of Justices Arun Mishra and Naivn Sinha. The H2O Holy Faith and Alpha Serene buildings were demolished on 11 January 2020 and the Jains Coral Cove and Golden Kayaloram were demolished on 12 January 2020 through implosion.

Criticism

The flood of 2018 was in no way on account of construction of structures in violation of CRZ norms. In Maradu, where the apartments in question are situated, the water level did not increase even by an inch during the flood. The flood was primarily due to the unscientific management of the dams, KSEB allow the water level to reach its brim and the sudden opening of the shutters of the dams caused the water level rise in rivers unexpectedly. The CAG¹⁴¹ report pointed out that almost all dams released water only after the water level crossed the FRL¹⁴² or reached the MWL¹⁴³. The interdisciplinary Centre for water Research at the Indian Institute of Science in Bangalore released a study that identified faults managing the water levels in the Kerala dams as the main reason that aggravated 2018 floods.

The Court in ordering the demolition of the building usurped the jurisdiction of the executive and completely bypassed the Kerala Municipality Act under which the Municipal Secretary is the fact-finding authority who is empowered to order even demolition, if there is violation of building rules and his decision is appealable under the Kerala Panchayat Raj Act. The person

¹⁴¹ CAG - Comptroller and Auditor General

¹⁴² FRL - Full Reservoir Level

¹⁴³ MWL - Maximum Water Level

aggrieved can seek regularization of the construction and if the Government declines regularization, that decision is appealable. A writ and even a writ appeal will also lie. Only thereafter the question of the Supreme Court exercising its authority under Article 136¹⁴⁴ of the Constitution arises. Maradu became a Municipality in the year 2011. The new CRZ notification 2011 also came into being in the same year which replaced the old CRZ notification Nobody brought to the notice of the Hon'ble Court that around 350 home buyers whose houses were ordered to be demolished, were not parties to the appeal decided by the court, that is the judgment of the court was rendered without observing the principles of natural justice.

The families residing in 343 flats in five apartments in Maradu approached a vacation bench of the Supreme Court¹⁴⁵ on June 10, 2019. The bench stayed the demolition order passed by the court on May 8 for six weeks. The writ petition stated that they were not heard. Justice Arun Mishra who passed the order of demolition strongly criticized the residents of Maradu flats for approaching another Apex Court Bench to get a stay of the demolition of their apartments. This creates a doubt in the mind of ordinary citizens about the biased approach of the Hon'ble Judge. The judge was adamant to his original stand disregarding the right to life of the residents of the flats and the natural justice principle.

Here the Hon'ble Justices Arun Mishra and Navin Sinha adopted a rigid literal way of interpretation of the rules based on the **technicality of the CRZ rules**. Though Maradu fell in Panchayath and in CRZ-III zone as per CRZ. Notification 1991, under CRZ Notification 2011, the same Maradu came under category CRZ-II zone which permitted construction activity at 50 meters from HTL. For 8 years from 2011 notification, it was not implemented till the demolition of flats.

A lethargic approach and hibernating attitude of the Executive from top to bottom, from Ministry to lower Panchayat/Municipal authorities caused this unpardonable demolition of those residences of common man on mere technical grounds. The ever-changing rules and regulations are a curse to ordinary people and fisher talk. Without ensuring proper awareness of the

¹⁴⁴ Article 136: Special Leave to appeal by the Supreme Court

¹⁴⁵ J.J Indira Banerjee, Ajay Rastogi

changing rules, the authorities at the helm are taking decisions which are disastrous. The demolition of Maradu flats resulted in significant environmental impact, including air pollution. The fine materials and debris could even contaminate water bodies. The foundation of the building with the 35m-deep cast-in-situ bored reinforced concrete piles under the buildings are still intact as it was practically impossible to remove and can cause environmental impact.

The judges bias can again be illustrated in the case of Mullaperiyar Dam¹⁴⁶. “The Dam is visibly damaged and located in a region prone to earthquakes. This is over 100 years old and situated in Kerala, India. The collapse of more than 100 years old dam can harm the life and property of over 3.5 million people downstream. The commissioning date was 10th October, 1895 i.e., the dam is 129-year-old. The longevity of the dams are not more than 70 years. Recent Dam collapse in Libya and in Sikkim (2023) has led to the deaths of thousands. Any reasonable man can find the Mullaperiyar dam in a precarious, dangerous situation. Still the Supreme Court has not passed a judgment in favor of decommissioning it. It is hanging over the head of the people of 4 districts of Kerala as a Damocles Sword. This compels one to cast doubt on some of the judgments of the judiciary and the judge’s biased approach.” Through various judgments, the court declared that;

“Environmental policymaking must take advantage of expert scientific information and contributions, the state cannot misappropriate itself by unchecked discretionary powers to dilute environmental norms, there is an urgent need for enforcement agencies to act properly, along with environmental/coastal protection the human rights of people also need to be considered, and the main question before the judiciary was about development v. environmental protection.”

We can understand the immense potential of judicial remedies in environmental issues, and they should be developed, explored, and strengthened in future for the proper implementation of our environmental laws.

¹⁴⁶ Situated in Idukki District of Kerala

Role of National Green Tribunal (NGT) in Coastal Protection

The NGT was established in the year 2010 under the National Green Tribunal Act of 2010 to settle civil cases involving environmental protection, the preservation of forests and other natural resources, as well as the enforcement of any environmental legal rights. The Act was enacted through the Parliament of India, under the provision of Article 21 of the Constitution of India, which emphasizes the right to live in a clean and healthy environment. NGT is a quasi-judicial body that exclusively deals with environmental-related civil litigations. Although there are many criticisms and limitations against NGT, it can be viewed as a positive step towards environmental justice in India. The NGT has acted in several cases involving the shore, striking a balance between the rights of coastal residents and development endeavors. A violation of the CRZ Notification may be contested before the National Green Tribunal in both an appeal and a remedy request because there is a significant environmental issue at stake. Since its founding in 2010, NGT has served as the main judicial authority for resolving environmental and coastal disputes and providing compensation where it is necessary. Numerous cases involving violations of the CRZ law have been heard since 2012 by the principal and zonal benches of the NGT.

The judiciary has enormous powers and latitude in interpreting coastal zone legislation as result of the state's failure to serve as a custodian of "natural resources". Sometimes the legislators themselves have participated in the alterations for implementing the unfettered development projects. The interpretation of "resource" and "public welfare" in the legal arguments made before the judges vary greatly depending on the situation. The courts have sought various definitions for coasts and land use diversions in the CRZ land use regulations.¹⁴⁷ Sometimes the courts have entrusted the obligation of policymaking to the coastal authorities and in some cases have condoned CRZ violations.¹⁴⁸

Another example on the issue of land reclamation, the Kerala High Court did not find any significant damage to marine resources, ecosystem and land reclamation in the Goshree Project. The demolition of the Maradu flats is considered as a controversial judgment as analyzed in previous pages. The judiciary has to consider the significance of public benefit and it differs

¹⁴⁷ P.A. Fazal Gafoor.V.State of Kerala, Special Leave Appeal (Civil) 2002

¹⁴⁸ Goa Foundation v. Diksha Holdings Pvt.Ltd

from one development project to another. So, the Indian judiciary, governments, and enforcement authorities should insist on a strict but purposive construction of coastal conservation policies. So, it should be understood that the society's interaction with nature should be wide-ranging and all the state agencies should maintain a balance between the development and conservation of the environment.

Leading cases on CRZ Notifications decided by NGT

1. Ms. Betty C. Alvares vs. The State of Goa and Ors¹⁴⁹.

One of the significant judgments passed by the NGT is the case of Ms. Betty C. Alvares vs. The State of Goa and Ors. In this case, a complaint was filed regarding various instances of illegal construction in the Coastal Regulation Zone of Candolim, Goa. The petitioner, Ms. Betty C. Alvares, was a foreign national who challenged the maintainability of the main application due to her non-Indian citizenship.

The NGT, in a bold move, recognized the right of any individual, regardless of their nationality, to file a proceeding related to environmental disputes. The tribunal interpreted the word "person" in the National Green Tribunal Act, 2010, broadly to include both Indian citizens and non-citizens. By doing so, the NGT upheld the petitioner's right to seek the demolition of illegal constructions and emphasized that nationality should not be a barrier to seeking environmental justice.

2. Samit Mehta vs. Union of India and Ors¹⁵⁰.

In the case of Samit Mehta vs. Union of India and Ors., the NGT addressed the issue of environmental damage caused by the sinking of a ship named M.V. Rak. The ship was carrying a significant amount of coal, fuel oil, and diesel, and its sinking resulted in the formation of a thick film of oil on the sea surface and damage to the marine ecosystem.

The NGT held the respondents responsible for negligence and non-compliance with pre-voyage due diligence. Invoking the "Polluter Pays" principle, the tribunal directed the respondents to pay

¹⁴⁹ MISC Application Nos.32 of 2014 (WZ) & MISC Application Nos. 33 of 2014 (WZ)

¹⁵⁰ A.No.24 of 2011, Civil Appeal No.10312/2016

substantial environmental compensation to the Ministry of Shipping, Government of India. This judgment served as a precedent for holding private entities accountable for environmental damage and promoting the principle of polluter responsibility.

3. In the case of *Libertina Fernandes v. Goa Coastal Zonal Management Authority*¹⁵¹ the appellant's main contention was that the GCZMA had no authority to direct the demolition of a property, which was admittedly constructed in the CRZ. The contention in the case was that the Village Panchayat was the competent authority to direct demolition of the property by following the course of action contemplated under the Goa Panchayat Raj Act, 1994. The permissions for the property had been taken in the years 1986-1987 under the Goa, Daman and Diu Village Panchayat (Regulation of Building) Rules, 1971. These rules allowed the Village Panchayat to issue regulations only in case of a non-permanent building, the cost of which did not exceed Rs. 20,000. The disputed building, however, was made of steel and concrete and the cost ran into crores. The NGT was of the opinion that the 1971 Act and the CRZ Notification, 2011 are not necessarily conflicting legislations and can operate simultaneously. This is because the object and purpose of the Acts were quite different. Since the construction was in the CRZ area, permission of the GCZMA was required under the law. The absence of any such permission was seen a blatant violation of the CRZ law and the property was ordered to be demolished.

4. *Wilfred J. v. MoEFCC*¹⁵²

The MoEFCC issued an Environmental Clearance (EC) and CRZ clearance for the Vizhinjam International Deepwater Multipurpose Seaport on 3 January 2014. This clearance order was challenged in four different petitions. The petitioners ranged from people concerned about the environment, and social workers to local fishing communities and individual fisher folk. The petitions were clubbed and heard collectively. The proposed site for the seaport was south of the Vizhinjam fishing harbour. The coastal and offshore waters of the area was used by the fishermen in the district. These fishermen had been using the existing harbour to venture out safely into the sea during the rough monsoon months for almost 40 years.

¹⁵¹ 2015 SCC Online NGT 61

¹⁵² (02.09.2016 – NGT); MANU/GT/0113/2016)

The establishment of the port thus threatened the basis of their livelihood. With respect to the CRZ clearance, the main contention of the appellants was that the site where the port was to come up was 'an area of outstanding natural beauty' as per the Kerala Coastal Zonal Management Plan of 1995, and was thus classified as CRZ-I (ecologically sensitive areas and other geomorphological features which are important to maintain the integrity of the coasts are classified as CRZ-I) under the 1991 Notification.

The NGT however recognised that the 2011 Notification had superseded the 1991 Notification. They thus examined the 2011 Notification, and observed that the categories of classification as referred to by the appellants had been specifically excluded from the 2011 Notification. The appeal was thus dismissed. The NGT however recognised the importance of strict compliance to the EC and CRZ Clearances and an expert committee was set up to guarantee that the project proponents ensure compliance.

Conclusion

The NGT has emerged as a crucial institution for environmental protection in India. Through its landmark judgments, the NGT has established important principles such as the right of non-citizens to seek environmental justice, the polluter pays principle, and the liability of private entities for environmental damage. These judgments have contributed significantly to shaping environmental law in India and ensuring the conservation of natural resources.

CHAPTER 5: IMPLEMENTATION OF CRZ NOTIFICATION 2019 - CHALLENGES AND REMEDIES

“You cannot tackle hunger, disease, and poverty unless you can also provide people with a healthy ecosystem in which their economies can grow”

- Gro Harlem Brundtland

Introduction

Coastal zone is the transitional zone, where land meets the sea and is influenced by both terrestrial and marine components. Intense interaction characterizes the coastal zone which ranges from open sea to semi closed (creeks, lagoons) coastal waters and they exhibit a substantial diversity in environmental and demographic features. Here, land and oceanic processes converge and interact, characterized by multiple biogeochemical environmental gradients.

The balance of these relationships provides a distinct domain of gradient-dependent ecosystems, climate, geomorphology, human habitations and most crucially regimes of highly dynamic physical, chemical and biological processes. Mass and energy are constantly exchanging and as a result of these interactions, a unique ecosystem is created¹⁵³. For conservation of the coastal ecosystem and to ensure its sustainable use, the Government of India introduced the CRZ notifications and the ICZMP project. However, its implementation faced serious challenges.

Adequacy of Institutional mechanism at Center as well as State to regulate the activities in CRZ areas as per the provisions of CRZ notification 2019

The institutional mechanism to regulate the activities in CRZ areas as per the provisions of CRZ Notification 2019, existing at Center/States showed that the NCZMA was not a permanent body

¹⁵³ Shailesh Nayak (2017) *Coastal zone management in India – present status and future needs*, *Geo-spatial Information Science*, 20:2, 174-183, <https://doi.org/10.1080/10095020.2017.1333715>

with defined members. NCZMA largely met to clear the proposal for projects and did not fulfill the other research and advisory role assigned to it. The Expert Appraisal Committee lacked technical members in the meetings, thus its recommendations lacked scientific basis. SCZMAs in the states were not reconstituted in time, lacked participation from important stakeholders, were not sufficiently resourced, and cleared projects without quorum. DLCs were not constituted in many states, and lacked participation from significant stakeholders; thus, could not function effectively to enforce the CRZ notifications.

Deficiencies in the constitution and functioning of NCZMA, SCZMA and DLCs would dilute their effectiveness in addressing challenges in ensuring sustainable development of the coastal areas. The different agencies involved in implementation of CRZ notifications could not ensure timely preparation of Coastal Zone Management Plans as well as plans for the protection of Ecologically Sensitive Areas in the coast which was a key to the sustainable development of the coastal areas. Thus, the institutional mechanism to regulate activities in the coastal areas as per CRZ notification was weak and could not function as effectively as envisaged in the CRZ notifications¹⁵⁴.

Procedure for grant of CRZ clearances by the Government, to conserve coastal ecology

As per CRZ notification, only permitted activities are allowed in different coastal zones and projects are approved, based on the environment impacts studies and the mitigations plans to address risks posed to the coastal ecology. It is observed that even though the environment impact studies had various inadequacies like preparation of environmental impact reports by non-accredited consultants, use of old baseline data, lack of complement analysis of environmental impacts, disaster management not fully addressed in the EIA reports, projects based on the EIA reports were approved by MoEF&CC¹⁵⁵/SCZMAs.

Further, mitigation plans to address the risks to environment posed by these projects were not adequate as the risks were only cursorily addressed in many projects. Cumulative impact studies were not prescribed as a precondition for approval, to check if the addition of the project would

¹⁵⁴ www.newindianexpress.com/states/kerala/2022may08keralas-coastal-regulation-zone-panelreport

¹⁵⁵ Ministry of Environment and Forests and Climate Change in India

alter the coastal ecology. MoEF&CC accepted and did not verify critical environment parameters for the project. Clearances to projects were given without considering whether they were located in Ecologically Sensitive Areas, which would affect the ecosystem balance of these fragile and vulnerable areas. Grant of the project approvals in excess of its authority and without mandatory documents by SCZMAs would weaken the checks on the approval mechanism and hinder conservation of the coastal ecology. The safeguards put in place to ensure that the projects did not significantly impact the environment were contravened. These projects could have a detrimental impact on the coastal ecology.

Safeguarding coastal ecosystems by post clearance monitoring as well as enforcement mechanism of CRZ notifications

Monitoring of projects after their approval by MOEFF&CC and its agencies ensures that the conditions under which the projects was approved are being complied with. Audit examination showed that MOEF&CC and its regional offices failed to ensure compliance to conditions stipulated in the clearances. Further, the project authorities did not submit mandated reports timely, which would have facilitated the monitoring process¹⁵⁶.

The enforcement mechanism to detect and punish violations of CRZ notifications suffered from a lot of infirmities. With the help of satellite imagery, the Audit observed that there were irregular development activities in CRZ 1 areas, like construction on the nesting sites of Olive Ridley turtles in Odisha and construction of racetrack in CRZ 1 area in Pattipulam, Tamil Nadu. Audit Report on coastal ecosystems observed encroachment and CRZ violations in the eco-fragile Vembanad Lake and Akkulam lake region, construction of a mall in NDZ¹⁵⁷ in Thiruvananthapuram, road construction in NDZ in Udupi district, Karnataka as well as commercial residential projects in the wetland area of Vembanad Lake. Some of the other findings of the Audit are;

- Coastal biodiversity like corals in the Gulf of Mannar Biosphere Reserve and in Goa faced threats due to absence of data to monitor their spread and condition.

¹⁵⁶ Kerala's Coastal Regulation Zone Panel Report- Report no.4 of 2022

¹⁵⁷ No development Zone

- The coastal sand dunes in Goa suffered as construction permission was given in the areas where they existed.
- Impermissible activities were allowed in the Khazan lands in Goa affected the mangroves
- Mangroves were also not protected as instances of cutting of mangroves for development projects were observed in Goa.
- In Gujarat, SCZMA failed to restore mangrove destroyed in Kutch
- The coastal ecology suffered due to municipal sewage discharge into the sea in the coastal districts of Karnataka with other cases of discharge of untreated sewage into the sea by the Municipal Corporations/Municipalities in Maharashtra.
- Waste from the fish processing industry at Veraval, Gujarat was being dumped in the coastal waters
- The waste from the aquaculture farms were discharged into Coringa Wildlife Sanctuary, Andhra Pradesh

Despite the existence of CRZ notifications, coastal areas continued to be impacted by anthropogenic activities, affecting vulnerable biodiversity and resulting in its degradation.

Achievement of Project development objectives under Integrated Coastal Zone Management Programme (ICZMP)

At the central level, preparation of Integrated Management Plans for Critically Vulnerable Coastal Areas (CVCAs) could not take place and there was no ground truthing¹⁵⁸ of the hazard line. This impacted the conservation of the CVCAs and the objective of safeguarding them was defeated.

Evaluation of the measures taken by the government towards achieving the targets under SDG 14¹⁵⁹

The efforts of the government towards achieving targets under the SDG 14 which aims to conserve and sustainably use the oceans, seas and marine resources for sustainable development were far below the required standards. All the stakeholders in the field of coastal management

¹⁵⁸ In remote sensing, 'ground truthing' refers to information collected at the imaged location.

¹⁵⁹ Sustainable Development Goal 14 is about 'Life below water'.

were not mapped. Ministry of Earth Sciences was yet to prepare an indicator related to plastic debris density which was a vital part of action to preserve the coastal and marine ecosystem. Further, National indicators for SDG 14.2 were not completely defined in terms of activities and outputs. Implementation of CRZ as well as ICZMP involves a sequence of activities that begin with the preparation of CZMPs, demarcation of CVCAs, demarcation and ground marking of various spatial reference lines. The measures taken up by the government towards achieving the targets under SDG 14 need further impetus.

Other Challenges

The environmentalists are unhappy that the original act was precariously diluted to accommodate the vested interests of the mining industry, real estate developers and fishing communities. Also, there are still ambiguities regarding the provisions. It is unclear whether the existing structure should be within the same premises having the same survey number or in the structures situated in the adjacent properties within the CRZ II area.

The rule does not clearly define “Authorized Fixed structures” in CRZ II. Another area of vulnerability is the risk of relying on outdated or inaccurate Data. The existing structures, road network, and the level of urbanization should be accurately surveyed and zonation should necessarily reflect the ground realities. Any unrealistic data will undermine the credibility of CZMP and CZMA. For example, manmade drains can be interpreted as natural streams ending up in creeks or littoral zones and thus it can impede the developmental initiatives in such regions. The rule does not impart adequate gravity to Temporary Tourism Facilities which are critical to many local economies.

One of the primary challenges with the CRZ Rules 2019 lies in the ambiguity of certain key definitions. The lack of precise definitions for terms such as “eco-sensitive zones” and “development activities” may lead to varied interpretations and inconsistent enforcement.

The people on the ground need to be taken into confidence. The finalization of the rules appears to have lacked extensive consultation with local communities. This deficiency in participatory decision making can result in policies that do not necessarily accommodate the fears and concerns of the people who are directly impacted.

Providing housing facilities just 50m from the coastline would expose the inhabitants to severe weather events, that too without any buffer. While coastal erosion is a natural phenomenon carried out by waves tidal and littoral currents and deflation, these factors get exacerbated by activities like land reclamation and other structures on the coast.

Fragile Coastal Ecology

The land reclamation in which new land is created from oceans or lake beds will have strong impacts on coastal ecology as the reclamation has been allowed in intertidal or CRZ 1B areas, for ports and sea links. Increasing nutrients in the coastal water due to aquaculture and other activities may lead to ecological disturbances affecting the coastal ecosystems processes.

New notification brings clearance in CRZ-IV areas under the purview of the Centre. Earlier the area was under the state government. Now it will be difficult for communities to get their voices heard. No study is available to show the carrying capacity of coastal areas to accommodate such increased development or the projected impact of such a change on the coastal communities. Clarification is needed and specific guidelines to be issued to ensure clarity and consistency in implementation and to avoid disputes at the time of issuing of building permits.

In Kerala the coastal development activities, shore alterations, destruction of mangroves, coral harvesting, dredging, mineral sand abstractions, and dumping of waste in the coastal environment are happening on a day-to-day basis. These activities transform the natural atmosphere of coasts. In Kerala, there are 44 rivers, and the inland activities near river shores also have influence on coastline. The erection of dams, alteration of the flow of tributaries, sand mining and over-exploitation of ground water results in coastal erosion¹⁶⁰.

These activities are dangerous for the conservation of coastal habitats and fisheries. These issues are life threatening to the livelihood of coastal inhabitants also. In the last few decades India especially, Kerala has been facing extreme weather events including heavy rain, storm surges

¹⁶⁰ Michael Oppenheimer, Sea level rise and implications for low lying islands coasts and communities, <https://www.ipcc.ch/srocc/chapter/chapter-4-sea-level-rise-and-implications-for-low-lying-islands-coasts-and-communities/>

and cyclones. Not only the coastal dwellers, but the entire country is accountable for the coastal degradation in India. Storm surges may increase and inundation of coastal areas is already common during monsoons in Kerala¹⁶¹.

Coastal Pollution

Increasing coastal development activities have resulted in coastal pollution. The government has always given priority to development rather than coastal protection. Kerala is facing serious coastal hazards including floods and landslides during every monsoon season, still the state is requesting relaxation in Coastal Regulation Zone Notifications for the State.

The present study shows that coastal development causes contamination of the coastal environment and is affecting the rights of the coastal people. The coastal rules due to lack proper implementation, inadequate provisions for management of waste, lack of interest in health and safety seriously causing coastal inhabitants, CRZ, 2019 also gives undue emphasize to coastal development. Several steps are required in national policies and management capabilities should be developed for regulating coastal environment. The present legislation imposes no penalty on the violators of the coastal rules.

Coastal laws are implemented to fill the lacunae in the environmental laws and to reduce the lapses in administration of coastal area. But the recent amendment to the Coastal Regulation Zone Notification” in the year 2019 has attracted tourism developers/resort owners to manipulate their constructions in the name of tourism expansion including development for basic amenities. The chance of using the coastal land is increased for tourism purposes, making roads and other facilities in the name of development permitted without a full understanding of their probable implications in the coastal environment.

The governments are aware of the repercussions of costal hazards for the coastal inhabitants in residential areas. Still, the lack of awareness and illiteracy and social backwardness of the coastal people have resulted in carelessness and insensitive attitude by the authorities even in extreme

¹⁶¹ Rajesh Abraham, *Kerala to witness extreme weather events frequently* INDIAN EXPRESS (October 22, 2019), www.newindianexpress.com

weather conditions. Such awareness is an absolute necessary to change the approach to the local people living in the coastal vicinity to ensure their right to life and livelihood. Participation of coastal inhabitants is also required in coastal decision-making to reduce their woes.

Other deficiencies of CRZ notification 2019

- a) The consequences and solutions of climate change are not included in CRZ, 2019 and it failed to discuss the impact of sea level rise and cyclone intensity on coastal areas making coastal ecology vulnerable.
- b) There is no well-defined hazard line to act as a barrier for relaxed provisions for economic development.
- c) Permitting building and tourism amenities to enhance employment and the local economy could injure delicate coastal ecology in absence of strong environmental safeguards and penal provisions.
- d) Extreme beach lighting for tourism is perplexing and injurious to some aquatic species, together with migrating turtles.
- e) Decrease of CRZ to 50m from hazard lines and construction in that area may result in imminent floods. In 1991 notification it was 500 meters and now it is reduced to 50 meters.
- f) Coastal Resident communities including fishermen may encounter displacement and livelihood challenges.
- g) There is apprehension that Notification could affect customary land use and traditional land rights. Traditional coastal dwellers use these lands for informal purposes also and the commercial users may challenge the customary rights of coastal inhabitants.
- h) Introduction of new clauses and repeated amendments diluted the original CRZ notification. These flexibilities were misused and sensitivity of some of the coastal environment was compromised to bring in coastal development.¹⁶²

¹⁶² Meenakshi Kapoor. The New Coastal Law Sets and Unethical Precedents in Policy Making, The WIRE(January 28, 2019). <https://thewire.in/law/coastal-law-crz-draft-policy-making>

Intruding into ecologically delicate coastal parts would lead to natural environmental risks and the CRZ notification permits basic amenities construction even in ecologically sensitive coastal zones for coastal inhabitants.

The CRZ, 2019 Notification revoked the prohibition on building and conserved a 200 meter No-Development zone in village coastal zones and a 100-meter No Development zone along with tidal-influenced water bodies, reduced it to 50 meters for the densely populated rural areas.

The most important criticism is against the reduction in the limit of no-development areas, consenting eco-tourism, mining of natural resources, salt reaping, waste management in eco-sensitive areas, reduced construction conditions in urban areas, and approval of tourism amenities in no-development zones. Mangroves and sand dunes provide crucial protection from storm surges and cyclones. However, “eco-tourism” projects and activities are increasingly permitted.

The coastal inhabitants are not aware of the policy and legal fluctuations concerning their habitats. They criticize that, in reality, the concept of NDZ only sponsors slum development and garbage dumping. After the CRZ, 2019 Notification Coastal Dwellers are selling their property near coasts and they fear that their land will be grabbed by coastal authorities after implementing the CRZ, 2019. Nowadays, mechanized fishing often provides improved amenities, maintenance yards, fuel stations, storage houses, and ice plants but due to strict provisions common people can't utilize these facilities. The coastal communities belong to the lower income group and being in the NDZ, the construction of houses is restricted and confined to renovation and other activities in order to dwell in their traditional living spaces¹⁶³.

The perception of sustainable development of coastal areas is not given prominence in the CRZ Notification, 2019. Unchecked land reclamation in coastal zone is not a good idea and in the CRZ III zone, ports and other developments are allowed. This aspect will have to be looked into for modifications. The free and unchecked use of the coastal area for development purposes on

¹⁶³ Meenakshi Kapoor, For our nation's coasts, DECCAN HERALD (December 01,2015) www.deccanherald.com

one hand and the land front facing the water body is not placed under restriction for development on the other hand, is a kind of dilution of the CRZ rules.

Another drawback of the CRZ Notification, 2019 is that it lacks a built-in instrument to generate guidelines or perceptions among the people on their duties inside the coastal region. The coastal zone has to act as a barrier between the sea and the land. Another drawback is the lack of provisions for building protective structures in ecologically sensitive areas.

Along with measures such as conservation, planting trees, and mangroves and hard measures such as sea wall building are also mandatory in protecting coastal regions from coastal erosion and other perils, but such concepts are not included in the CRZ Notification, 2019 and amendments are necessary for this aspect.

Usage of coasts for added profitable and tourism ventures, accelerating and streamlining of the assessment procedure, and allowing a bigger role to state governments in coastal policymaking are the basic variations made by the CRZ Notification, 2019. However, these changes have been made without any public discussion or they have sidelined the apprehensions expressed by the coastal communities and local people in suggestions sent to the MOEF&CC.

Environmental activists claim that India's safeguard strategy for the sensitive ecology is weakened by the CRZ Notification, 2019 and is made accessible for more development projects. Infrastructure expansion and construction along the beach will increase the risk because India's coastline is extremely vulnerable to climate change influences such as erosion, cyclones, and floods. India's regulations are now endangering the sensitive environment and infrastructure that are already vulnerable to extreme weather events and sea level rise by opening 7500km of the mainland coastline for additional commercial activity.

The principle of informed consent is crucial in environment protection. The accessibility of environmental information is a dominant method for the application of environmental standards set by treaties and other international/national agreements or policies. Coastal NGOs, particularly those working for main development missions are treated as an enemy by government

authorities. Public participation in environmental policymaking can be effective only if people have the right to know.¹⁶⁴

Confidentiality rather than openness creates problems with regard to people's participation¹⁶⁵.

The recent changes in coastal law are to promote government programs such as coastal roads for port connectivity of about 2,000 km under the Bharatmala Pariyojana" (BMP) Phase-I and Sagarmala program for the massive port development along the Indian coastline¹⁶⁶. These projects are not accommodating coastal communities, but the government claims it as for coastal development.

Temporary constructions in eco-sensitive coastal zones:

Tourism is one of the greatest income providers in India and it creates employment opportunities in the coastal sector. So, the provisions in the new Notification in 2019 are creating expectations in coastal communities by ensuring the enhancement of tourism facilities by allowing more infrastructure in coastal zones and by allowing temporary constructions for tourism improvement and thereby creating opportunities for employment in a variety of fields related to tourism. The modifications also allowed temporary commercial facilities including huts, restroom blocks, dressing rooms, drinking water amenities, etc., to be built even in the CRZ-III areas' No Development Zone (NDZ). Uncontrolled activities and developments may occur in the coastal area if there are no proper coastal plans in place for coastal zone management.

Major Challenges in the Implementation of CRZ Notification 2019

To sum up the major challenges in the implementation of CRZ Notification 2019 are;

1. Administrative Challenges

- **Bureaucratic Delays:** Coordination between multiple government agencies can slow down the approval and implementation processes.

¹⁶⁴ Shruti Iyer and Anand K, *Coastal Management in India: Twisted Past, Bleak Future*. (2009)

¹⁶⁵ The Central and various State Pollution Control Boards are getting out the Annual Report which is not continuous and rather never easily accessible.

¹⁶⁶ Pankaj Sekhsaria, Many shades of a blue economy, THE HINDU, (Nov, 11,2017,4.24 PM). www.hindu.com Immanuel.

- **Lack of Clarity:** Ambiguities in the notification's guidelines can lead to inconsistent interpretations and enforcement.
- **Capacity Constraints:** Local authorities may lack the technical expertise and resources necessary effectively implement the regulations.

2. Socio-Economic Challenges:

- **Impact Livelihoods:** Restrictions on certain activities in coastal zones can affect the livelihoods of local communities, particularly those dependent on fishing and tourism.
- **Development Pressures:** High demand for coastal land for urban development, tourism, and Industrial activities can lead to resistance against strict regulation enforcement.
- **Displacement Issues:** Implementing CRZ norms may require relocating communities, which can cause social unrest and resistance from affected populations.

3. Environmental Challenges:

- **Climate Change:** Rising sea levels and increasing frequency of extreme weather events can complicate the demarcation and enforcement of CRZs.
- **Biodiversity Conservation:** Balancing development needs with the conservation of coastal ecosystems and biodiversity is a persistent challenge.
- **Pollution:** Ongoing pollution from land-based sources and marine activities can undermine the objectives of the CRZ Notification.

4. Legal Challenges:

- **Litigation:** Stakeholders affected by the CRZ regulations may seek legal recourse, leading to prolonged court cases that can delay implementation.
- **Regulatory Conflicts:** Conflicts between CRZ regulations and other local, state, or national laws can create legal hurdles and enforcement challenges.

5. Political Challenges:

- **Political Will:** The success of CRZ implementation heavily depends on the political will at both the state and central levels. Political resistance can arise from vested interests in coastal development projects.
- **Policy Continuity:** Changes in government or policy focus can lead to shifts in priorities, affecting the consistency and effectiveness of CRZ implementation.

6. Technical Challenges:

- **Monitoring and Enforcement:** Ensuring compliance with CRZ regulations requires robust monitoring systems and enforcement mechanisms, which may be underdeveloped.

Addressing these impediments requires a multi-faceted approach involving capacity building, stakeholder engagement, clear legal frameworks, effective governance, and the integration of scientific and traditional knowledge.

Recommendations/ Suggestions

Some suggestions to tackle the challenges in cognition of CAG¹⁶⁷ of India's (2022) recommendations are;

- SCZMAs and NCZMAs may be made as permanent bodies with full time members to carry out all the mandated activities for protecting the coastal environment, thereby giving more power to the implementing agency
- The DLCs may be formed and reconstituted without delay in all the relevant districts. The composition of DLCs may be inclusive in nature representing all the relevant stakeholder sectors.
- MoEF&CC needs to ensure that the NCZMA/SCZMAs share information regarding their discussions/minutes of meetings with the public in a uniform and regular manner. Interactive Grievance Redressal Mechanism may be adopted by the SCZMAs.
- The Ministry may ensure that the project proponent carry out in-depth ecological evaluation of the project environment before granting the clearances to the projects.
- MoEF&CC may ensure that the project proponents submit a viable EMP¹⁶⁸ addressing all the risks to the environment
- MOEF&CC may revisit the roles and composition of different agencies to strengthen the post clearance monitoring
- Expert cells, which are well versed in GOS tools may be created in DLCs to effectively and efficiently monitor the changing landscape of the coastline and track irregular

¹⁶⁷ Comptroller and Auditor General of India

¹⁶⁸ Environmental Management Plan

developments. Presence of such a surveillance mechanism would not only track irregular activities but would also serve as a deterrence tool.

- The state governments may make necessary efforts for mapping and preparation of focused management plans for the coral reefs, turtle nesting sites etc.
- Efforts may be made by MoEF&CC to notify the IMPs for Ecologically Sensitive Areas at the earliest.

Coastal Management Strategies **in India** should Include:

- Avoidance of developmental constructions in susceptible coastal zones
- Controlled use of sensitive coastal areas
- Possession of land and residence only to coastal dwellers
- ICZM strategies should include multi-sectoral planning, public participation and conflict mediation. This concept was initially conceived at **Earth** Summit in 1992. ICZM is a component of Agenda 21 but unfortunately, all these concepts are still on page and are not implemented in practice¹⁶⁹.

The principal objective of coastal management in **Kerala** should be based on the following aspects;

- Control of development/commercial/tourism expansion/industrial activities in ecologically sensitive coastal zone areas
- Safeguarding the coastal resources and ensuring coastal biodiversity including mangroves
- Protection of the right to life of coastal dwellers, their properties without degrading the coastal zones
- Regulation of coastal encroachments
- Control of population in coastal zones
- Sea shores, sand banks, mangroves, wetlands and coral ridges should be preserved. It can enhance the biotic factors, aesthetic standards and restore coastal regions

¹⁶⁹ Ajith.Telave et al; *Integrated Coastal Zone Management: An India Perspective*, ECO.ENV. AND CONS: S162-S167(2021) <http://www.envirobiotechjournals.com>

The CRZ rules remain inadequate in operationalizing ICZM objectives. Indian coastline still faces challenges due to change and rising sea levels¹⁷⁰. Instead of incorporating **comprehensive legislation** on the matter, the MOEF&CC has continued to utilize the technique of managing a delicate ecosystem through notification and using broad executive powers to change the coastal regulation frequently. A comprehensive legislation is the need of the hour.

Government control over coastal zones

Many nations including the USA, the UK and Australia have spent a lot on coasts to protect them and to take them under the control of the government and also treat it as natural resources¹⁷¹. Preserving fragile ecosystems and restricting development in these areas can decrease impending expenses for adaptation.

Need for Coordination Committee

All of the development projects in the coastal areas need to be managed by a co-ordination committee under the directions of the chief ministers of the coastal states. Local administrative organizations should train representatives of local self-governments using the knowledge found in academic field like geology, marine sciences, ecology, sociology etc. The creation of regionally specialized coastal zone management plans should also involve the green army, civil society organizations and citizen scientists. To track violations of the coastal zone a network of civil society organizations, environmentalists and local self-government should be established.

The coastal law regime should be demystified and made more accessible for the public. The authorization process for construction should be simplified with a **single-window** system through digitized portals that can ensure transparency which may be achieved by making the information available to public.

As in the coastal policies in the USA, the UK and Australis, resource mobilization can be done through advanced funding mechanisms. Management plans established by local self-governing

¹⁷⁰ Id

¹⁷¹ Thomas. J. Schoenbaun and Ronald. H. Rosenburge, *The legal implementation of coastal zone management. The North Caroline Model*. DUKE LAW JOURNAL 1 (1976), NICK HARVEY AND BRIAN CATON, COASTAL MANAGEMENT IN AUSTRALIA, (2010)

institutions may be allotted to the State and national levels. The legislation must specifically include provisions ensuring public participation in the decision-making process. Eco-sensitive coastal areas should adopt natural/eco-friendly solutions like dunes, mangroves, and native vegetation to manage sea erosion. Emphasis should be given to **coastal environmental studies at school and college levels** as compulsory papers/subjects. The NGT should have a two-tier structure at the national and the state levels. The **NGT** should be upgraded to act as a **scrutinizing agency** at all stages of executive of CZMP. There should be a uniformity of standards throughout the country for the protection of the coastal environment.

Long-term activities

- Creating coastal erosion maps with the help of community and academic organizations
- Participatory management strategy for seashores
- Conducting research on coastal zone management
- Prepare and organize coastal management plans that are specific and contextual to the area in collaboration with the local self-government

Most of the time, the Secretary of the Department of Forests and Environment of the State government or Union territory is in-charge of the State Coastal Zone Management Authority (SCZMA). The CRZ approval process as well as the implementation and monitoring of CRZ regulations are usually delayed as a result of executive's double duty schedule and work demands. This can be resolved by constituting State Environmental Appraisal Committees (SEAC) that can implement and monitor CRZ projects and approve EIA. Better decisions will be made and quicker execution will follow from this division of power. The CAG report in 2022 suggests coordinated action of NCZMAs and SCZMAs for better enforcement. The report also suggests the composition of NCZMA as a permanent body for the effective implementation of coastal laws of the country¹⁷².

Coastal environmental experts must be involved to assess the current state of the coasts as well as to assess the effects of any human intervention on the coastal ecosystems. Conducting

¹⁷² *Report of the Comptroller and Auditor General of India on Conservation of Coastal ecosystem, 2022*, Report of Union Government, MoEF&CC, Report No.4 of 2022 (Performance Audit)

extensive research and establishing a comprehensive coastal information system will be beneficial.

Coordination of numerous governmental agencies and NGOs is necessary for appropriate Coastal Zone Management in India. The apartments in Maradu, Kochi were demolished as a result of the tug-of-war between local self-government and coastal zone control authorities in Kerala. While many authorities are involved in coastal zone management, there is a chance of conflict and to prevent this conflict, various agencies must work together in coordination and effectively¹⁷³.

Planning and policy development for coastal zone management can be successful if they emphasize new development goals and implement solutions for coastal problems. Area specific plans will be more effective and hence it should be given priority.

Local bodies and Coastal Zone Management

The Panchayat Raj Institutions face enormous difficulties in managing natural resources. It is addressed by the 72nd and 73rd Constitutional amendments. Making use of the 11th schedule to the Constitution (73rd Amendment) Act 1992¹⁷⁴, coast conservation should be vested and management options should be worked out with local governing bodies. Thus, DCZMA should be given significant role in coastal zone management.

Preparation of Coastal Zone Management Plans

While preparing CZMP, the following factors should be born in mind:

- CRZ-I areas should not be exposed to sewage, pollutants from industrial or municipal outfalls or pipes
- All coastal regions that are unoccupied should be designated as CRZ-I
- Areas that are considered ecologically sensitive CRZ I zone should include shoals, reefs, mangroves, mudflats, wetlands, and sand dunes.

¹⁷³ V.K Aggarwal, *Environment Laws in India: Challenge for Enforcement*, BULLETIN OF NATIONAL INSTITUTE OF ECOLOGY, 15, 227-238 (2005)

¹⁷⁴ The constitution (73rd Amendment) Act, 1992 added a new part IX consisting of 16 articles and eleventh schedule to the constitution

- Waste materials from dredging shall not be dumped in the CRZ region, if dumped, the resulting land formed should be classified as CRZ I, with no exploitation of the land
- CRZ areas should not be used for sandmining. Sewage treatment plants power plants, storage facilities etc. must be located away from the shore and should not be erected in the CRZ area.
- National Institute of Oceanography's assessment regarding sea-level rise should be considered for determining CRZ I areas.

Suggestions for the State of Kerala

Kerala is gifted with the Arabian Sea, backwaters, inland water resources and 44 rivers. Under the CRZ notification all of the islands in Kerala's backwaters should be protected.

- The CRZ region shall be 50 meters wide from the High Tide Line on the landward side of the islands within the backwaters.
- With the previous approval of the Gram Panchayat, residences of coastal communities may be built on the landward side of backwater islands that are more than 50 meters from the HTL.
- Facilities such as fishing jetties, fish drying yards, net mending yards, traditional fishing processing yards, ice plants, boat repairs etc. can be erected within a 50-meter width from the HTL of these backwater islands.
- Sandmining in coastal zones should immediately be prevented/stopped. A big scam is going on in Kerala regarding the mining of rare earth from the coastal areas.

Disaster Management in Coastal Zones

- Separate allocation of funds should be maintained for coastal zone rehabilitation. When allocating aid for natural disasters, transparency should prevail.
- Disaster management courses should be included in the primary and middle school curriculum.
- Remote sensing, satellite-based telecommunication and global navigation satellite systems can be utilized for emergency preparedness and early warning.

- Design choices and building techniques should be selective to suit the concerned area and the vulnerabilities

The need of climate justice

Climate justice is an approach **to climate action** that focuses on the unequal impacts of climate change on marginalized or vulnerable populations. Climate justice wants to achieve an equitable distribution of both the burdens of climate change and the efforts to mitigate climate change¹⁷⁵. Climate justice is a type of environmental justice¹⁷⁶. Climate justice examines concepts such as equality, human rights, collective rights etc. Climate justice for coastal people should include locally driven solutions, the welfare of regional communities, indigenous people and the world's poor as well as biodiversity and healthy ecosystems.

Integrating environmental protection with human rights can lead to sustainable development¹⁷⁷. All the citizens of the globe must come together to work for the protection of the environment. The Indian higher judiciary has played the role of an Ombudsman by its innovative, path-breaking decisions in the field of environmental protection. Its interpretation of the fundamental right to life guaranteed by Article 21 of the Indian Constitution has served as the fundamental constitutional tenet of Indian environmental Law and environmental justice.

The Indian Supreme Court has interpreted the right to healthy environment as a part of right to life which is a powerful judicial tool “to offer a shield against the developmental terrorism” which is set to swallow humankind, in this context”¹⁷⁸.

¹⁷⁵ *Climate equality. A Planet for the 99%* Oxfam. November 2023

¹⁷⁶ Schlosberg, David, Collins, Lisette B (May 2014) *From Environmental to Climate Justice*.

¹⁷⁷ Smriti and Radha, *Environment Protection: Legal and Human Rights Perspective*. NJEL 30-34 (2019)

¹⁷⁸ Ria Garg, *Need for Nature Reforms in India* 3NJEL, 10-13 (2020). www.lawjournal.celnet.in

Conclusion

The CRZ notification 2019 aims to balance development with ecological conservation along India's coastlines. While it brings several benefits, such as facilitating infrastructure growth and promoting sustainable tourism, it also poses significant challenges as elaborated in this chapter. Issues such as risk of environmental degradation, difficulties in enforcement and concerns from local communities about displacement and loss of livelihood are some of the key challenges.

To address these challenges, it is crucial to adopt a multi-faceted approach. Strengthening enforcement mechanisms through better monitoring, funding and training for regulatory bodies can help ensure compliance. Engaging local communities in decision-making processes and providing them with alternative livelihood options can mitigate social impacts. Continuous monitoring and adaptive management practices should be employed to respond to environmental changes effectively.

As coastal regions are increasingly threatened by climate change, sea-level rise and urbanization, India has to adopt new scientific strategies to cope with the challenges. Incorporation of advanced technologies and scientific research into coastal management practices is inevitable. Remote sensing, GIS mapping and data analytics can enhance monitoring and enforcement of CRZ regulations making them more efficient and precise.

The government should have a strong political will to implement it in such a way so that the most vulnerable communities are benefited and not harmed. Procrastination from the authorities and officials in implementing the CRZ rules can prove detrimental to the coastal zones and communities. Collaborative efforts with international organization and coastal management experts can bring in global best practices and innovative solutions tailored to local contexts. Education and awareness campaigns, community engagement are also important for fostering a culture of conservation especially among coastal communities and stakeholders. By addressing current challenges with strategic remedies and looking ahead with a long-term vision of integrated, science-based management, India can create thriving coastal ecosystems that support both humans and coastal biodiversity.

BIBLIOGRAPHY

ACTS/ STATUTES/ INTERNATIONAL DOCUMENTS

1. Stockholm Declaration, 1972
2. Water (Prevention and Control of Pollution) Act, 1974
3. United Nation Law of Seas, 1982
4. Environmental Protection Act, 1986
5. CRZ Notification 1991
6. Biodiversity Act, 2002
7. The National Environmental Policy, 2006
8. National Green Tribunal Act, 2010
9. CRZ Notification 2011
10. Wetland (Conservation and Management) Rules, 2017
11. CRZ Notification 2019
12. Island Protection Zone Notification, 2019
13. Sustainable Development Goals, 2030

BOOKS

1. LEELA KRISHNAN P, ENVIRONMENTAL LAW IN INDIA (5th ed. 2019)
2. MU RAMKUMAR et.al., COASTAL ZONE MANAGEMENT: GLOBAL PERSPECTIVES, REGIONAL PROCESSES, LOCAL ISSUES (1st ed. 2018)
3. S. C. SHASTRI, ENVIRONMENTAL LAW, (5th ed. EBC)
4. PRITA DEV, THE COASTAL REGULATION ZONE (CRZ), 2019 & ISLAND PROTECTION ZONE, 2019, 1-4 (Snow White Publications, 2021)
5. SHYAM DIWAN, ARMIN ROSENCRAZ, ENVIRONMENTAL LAW AND POLICY IN INDIA-CASES, MATERIALS AND STATUTES (Oxford University Press, 2015)
6. TANMONY RUDRA et.al, MARINE POLLUTION CONTROL AND MANAGEMENT, (Janada Prakashan, 2010)

7. P. B. SAHASRANAMAN, THE LAW RELATING TO PROTECTION OF COASTAL AREAS, (11th ed., Swami Law House)

JOURNAL ARTICLES

1. Abdul Jabbar Haque, *The Right to live in healthy and pollution free environment: An analysis in Constitutional Perspective*, 3 NJEL 1, 30-38(2020)
2. V. K. Agrawal, *Environment law in India; Challenges for Enforcement*, BULLETIN OF NATIONAL INSTITUTE OF ECOLOGY, 15.227-238 (2005)
3. Ajith Joseph et.al., *The application of coastal regulation zones in coastal management- Appraisal of Indian experience*, 43 JNL. OF OCEAN AND COASTAL MANAGEMENT, 515-526(200)
4. Ajith. Telave, *Integrated coastal zone management: An Indian Perspective*, ECO.ENV.ANDCONS., S162-S167 (Feb.2021)
5. Aparna Sunder, *From Regulation to Management and Back Again: Exploring Governance shift in India's Coastal Zone*, 12 JNL OF COSERVATION AND SOCIETIES 4.364-375 (2012)
6. Aparna Roy, *Making India's coastal infrastructure climate resilient: Challenges and Opportunities*, ORF, Occasional paper no.207 (Aug 12.2019) www.orfonline.org
7. Ayesha Das, *Judicial Activism in the Development and Enforcement of Environmental Law: Some Comparative Insights from the Indian Experience*. 6 JNL. OF ENVIRONMENTAL LAW 2, 243-262 (1994)
8. P. M. Bakshi, *Environmental Law- some issues for future*, JILI (1992)
9. Bijukumar. A et al, *Climate Change, Fisheries and Coastal Ecosystem in India*, JNL. Of AQUATIC BIOLOGY AND FISHERIES 5, 7-17 (2017)
10. J. K Panigraphy et al, *Effectiveness of India Coastal Regulation Zones provisions for Coastal Zone Management and its evaluation using SWOT Analysis*, 65 JNL. OF OCEAN AND COASTAL MANAGEMENT, 34-50 (Sep.2012), <http://doi.org/10.1016/j.ocecoman.2012.04023>

11. Ramachandran S, *Coastal Zone Management in India – Problems, Practices and Requirements: Perspectives on Integrated Coastal Zone Management*, Springer Publishers, (1999) <http://doi.org/10.1007/978-3-6-160103>
12. Ria Grag, *Need for Nature Reforms in India*. 3NJEL, 10-13(2020)
13. Raghav Parthasarathy and Vikas Gahlot, *Coastal Regulation Zone: A Journey from 1991 till 2019*, NLSE (Jun.2020), <http://nlselaw.org/coastal-regulation-zone-journey-from-1991-till-2019/>

WEBSITE ARTICLE

1. Abhishek Das, *Coastal Regulation Zone: Governance and Conservation*, LAWYERSCLUBINDIA(Oct.9,2019), <http://www.lawyersclubindia.com/articles>
2. S. Gopi Krishnan Warriar, *The coasts need science-based policy action*. MONGBAY, (11 May 2018) www.india.mongbay.com
3. Geethanjali Sahu, *Implication of Indian Supreme Court's innovation for environmental jurisprudence*, 4LEADI, I(2008), <http://www.lead.journal.org/content/08001.pdf>
4. Meenakshi Kapoor, *The New Coastal Law sets an Unethical Precedent in Policy Making*, THE WIRE, <https://thewire.in/law/coastal-law-Crz-draft-policy-making> (28 Jan.2018)
5. Meenakshi Kapoor, *India diluted the law that protect its coastal area once the public could no longer give inputs*. INDIASPEND (Aug.11.2020) www.scroll.in
6. Meenakshi Kapoor, *For our Nations Precious Coasts*, DECCAN HERALD (Dec.1, 2015) www.deccanherald.com
7. Michael Oppenheimer, *Sea level rise and implications for low lying islands, coasts and communities*,4, (Jan 28, 2019) <https://www.ipcc.ch>

APPENDIX

CERTIFICATE OF PLAGIARISM CHECK

This is to certify that **ROSA CHANDY** Reg. No. **LM0123020** has submitted her Dissertation titled, **“IMPLEMENTATION OF COASTAL REGULATION ZONE NOTIFICATION 2019: CHALLENGES AND THE WAY FORWARD”** in partial fulfilment of the requirement for the award of Degree of Master of Laws in Constitutional and Administrative Law has been checked for plagiarism in Grammarly on 20.06.2024 and is found to be less than 8%.

Dr Jacob Joseph
Assistant Professor,
NUALS, Kochi
(Guide and Supervisor)

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PLAGIARISM CHECK REPORT

1	Name of the Candidate	Rosa Chandy
2	Title of Thesis/Dissertation	Implementation of Coastal Regulation Zone Notification 2019: Challenges and the Way Forward
3	Name of Guide and Supervisor	Dr. Jacob Joseph
4	Similar content (7.8%) identified	9% (Chapter 1) 10% (Chapter 2) 10% (Chapter 3) 6% (Chapter 4) 4% (Chapter 5)
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CHAPTER 3: ANALYSIS OF COASTAL REGULATION ZONE NOTIFICATION, 2019- ENFORCEMENT AND IMPLEMENTATION

*"Of the Coastal People none do sing the praise
Of their love of the sea and of their Coastal Ways
Of the surfies and sea lovers' poets seldom sing
And we seldom hear of the cool Coastal Spring"*
- Francis Duggan[1]

Introduction

Coastal zones have contributed a lot towards the evolution of human civilization. Though the coastal zones occupy only 8% of the earth's lithosphere (outer part of the Earth) which is suited for human habitation, it has a high concentration of human population. Around 37% to 44% of the world's population resides within 100 km and 150 km of a Coastline respectively.[2] Coastal zone is the area of interaction between land and sea which is influenced by both land and marine environment. Anthropological interventions in coastal zones have paved the way for environmental degradation which can jeopardise the livelihood security of the marginalised sections of the coastal inhabitants.

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CHAPTER 4: CONTRIBUTION OF INDIAN JUDICIARY TOWARDS PROTECTION OF COASTAL AREAS

Introduction

The Indian judiciary plays a crucial role in environmental protection through its interpretation and enforcement of environmental laws. Over the years, the courts have delivered landmark judgments and directives to safeguard the environment, address pollution, promote sustainable development and protect natural resources. Judicial Activism and public interest litigations contributed a lot in formulating new laws and regulations in this field. Courts often hear cases related to violations of environmental norms, illegal construction, and encroachment in coastal area, ensuring that regulations are upheld to safeguard fragile ecosystems and communities in these regions. Judiciary actively, engages in setting precedents and interpreting laws to address emerging, environmental challenges such as climate change impacts on coastal area, biodiversity loss, and pollution.

By upholding the principles of environmental justice and sustainable development, the judiciary promotes accountability among stake holders, encourages public participation in decision-making process fosters greater awareness about the importance of preserving coastal

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CHAPTER 5: IMPLEMENTATION OF CRZ NOTIFICATION 2019 - CHALLENGES AND REMEDIES

"You cannot tackle hunger, disease, and poverty unless you can also provide people with a healthy ecosystem in which their economies can grow"

- Gro Harlem Brundtland

Introduction

Coastal zone is the transitional zone, where land meets the sea and is influenced by both terrestrial and marine components. Intense interaction characterizes the coastal zone which ranges from open sea to semi closed (creeks, lagoons) coastal waters and they exhibit a substantial diversity in environmental and demographic features. Here, land and oceanic processes converge and interact, characterized by multiple biogeochemical environmental gradients.

The balance of these relationships provides a distinct domain of gradient-dependent ecosystems, climate, geomorphology, human habitations and most crucially regimes of highly dynamic physical, chemical and biological processes. Mass and energy are constantly exchanging and as a result of these interactions, a unique ecosystem is created^[1]. For conservation of

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