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## **Master Thesis 2015**

Research Master Planning and Sustainability: Urban and Regional Planning

# **Coastal Regulation Zone (CRZ) Notification- policy planning as a tool for bringing Environmental sustainability: The case of “Mangalore corniche-Phase 1” project**

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## **Abstract**

The coastal region of the India plays a major role in the country's economy by virtue of its resources, many industrial, commercial activities and urban centers are concentrated around the coastal zones, hence the pressure on the existing coastal resources on the coastal zones are higher, in India nine states and four union territories are falling under the coastal belts. The progress of socio-economic development among the coastal states and UTs are not equal in terms of per capita income, poverty, infrastructure and socio-economic development. The above inequalities can be attributed to three different kinds of aspects they are; natural differences, socio-cultural conditions and policy decisions. In the following report we are mainly concerned about the policy aspects. The law is particularly important in shaping the institutional framework for economic activities. Legal rules can be viewed as framework used to help individuals to solve the coordination problems and conflicts that arise in an environment of scarce resources. This study deals with study of the special environmental regulations that governs the developmental in the coastal states. Coastal Regulation Zone (CRZ) Notification, issued in 1991 and 2011 under Environment (Protection) Act. 1986 is the most significant and specialized legislation regulating developmental activities along the coastal areas of India for sustainable development. This research aims at finding the actual roles of the CRZ notifications, and how they are implemented and to find out that is this notification really successful in addressing the environmental issues of the coastal states for which it was enacted. The research methodology takes up the approach of dissecting the policies and analyzing it with the help of the case study. In the present study the mangala corniche ring road project in Mangalore, Karnataka, India were selected as the potential case study as it falls under the CRZ –II, to study the projects compliance with the crz notification and to understand the real issues that lies with this legislation. As the result of this study it was found that despite being policy lapses that existed with the CRZ notifications the state government's lethargic attitude towards enacting these legislations and influence various industrial lobbying groups, and not so transparent functioning of government agencies are the major causes that is taking away the essence of this legislation.

**Key Words:** Water Pollution, Air Pollution, Environmental Protection, Sustainable Development, coastal regulation zone, coastal management planning, environment, ecological protection, coastal ecosystem, environmental acts, coastal regulation zone management

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## ABBREVIATIONS AND ACRONYMS

- CICEF Central Institute of Coastal Engineering for Fisheries
- CIMU Coastal Infrastructure Management Unit
- CMZ Coastal Management Zone
- CPCB Central Pollution Control Board
- CPDAC Coastal Protection and Development Advisory Committee
- CRZ Coastal Regulation Zone
- CWC Central Water Commission
- CWPRS Central Water and Power Research Station
- CZM Coastal Zone Management
- DDMAP District Disaster Management Action Plan
- EIA Environmental Impact Assessment
- EPA Environment Protection Act
- GoI Government of India
- HTL High Tide Line
- IA / SIA Implementing Agency / State Implementing Agency
- ICMAM Integrated Coastal and Marine Area Management
- IDCMC Institutional Development Change Management Consultants
- INCOIS Indian National Centre for Ocean Information Services
- KCZMA Karnataka Coastal Zone Management Authority
- KERS Karnataka Engineering Research Station
- LTL Low Tide Line
- MoA Ministry of Agriculture
- MoD Ministry of Defense
- MoEF Ministry of Environment and Forests
- MoES Ministry of Earth Sciences
- MoS Ministry of Shipping
- MoWR Ministry of Water Resources
- NCPP National Coastal Protection Project
- NCZMA National Coastal Zone Management Authority
- NGO Non-Governmental Organization
- NIO National Institute of Oceanography
- NIOT National Institute of Ocean Technology
- NITK National Institute of Technology Karnataka
- P&IWT Ports & Inland Water Transport
- PDSC Project Design and Support Consultants
- PMDC Project Management and Design Consultants
- PPMS Project Performance and Management System
- PPP Public Private Partnership
- PPTA Project Preparation Technical Assistance
- PWD Public Works Department
- RFP Request for Proposal
- SCR Swaminathan Committee Report
- SCZMA State Coastal Zone Management Authority
- SLWG State Level Working Groups
- SPCB State Pollution Control Board

- TA Technical Assistance
- ToR Terms of Reference

## Chapter 01: Introduction

Conservation protection and Improvement of our human habitat is the major concern throughout the world. The environment in which we live comprises of both the biotic and abiotic components these are interdependent and coexisting in harmony, to create a balanced environment for us to live and thrive, but the activities of the human beings like urbanisation, industrialisation, urban sprawl, population explosion, over exploitation of the natural resources have degraded the ecological balance which nature has been maintaining over the years. These destructions caused by the economic reasons are of multitude in nature and effects of which we will have to bare for the generations to come. We should understand that a country's environmental issues are not of its own it has its effects on the whole ecosystem when perceived at the planetary level, the problem of the environmental pollution has now caught global attention and India is no exception to it.[1]

In today's world where every country is running this rat race for achieving the economic development and bettering their GDP percentage, preservation of environment and has been put in the back seat. Most of the world countries are struggling to maintain the balance between environmental protection and economic development and the recent reports on climate change and carbon emissions are also imposing major challenges to the policy makers, and increasingly there is a very negative attitude attributed to the environmental laws as they are perceived as the road blocks to the economic development. This is where the concepts of sustainability and sustainable economic development come as the saviours, these concepts have proved that economic development could be achieved without causing damage to the

environment. Stockholm declaration of 1972 was perhaps the first attempt to conserve and protect human habitat at the international level.

India has also enacted many laws, which are primarily and more relevant to protect and improve the environment. CRZ notifications issued in 1991 using the provisions of the environmental (protection) act, 1986 is the most significant and specialized legislation regulating developmental activities along the coasts of India. It is one among the most highly violated environmental laws in India, the nature and the status of this notification on par with that of an enacted law is what intrigued me to do further research on it, this CRZ notification is not a legislation that was enacted like other environmental laws, rather these were the set of rules framed up by the MoEf with its discrete power and later notified to all state governments. This notification which has the status of a law governs all of the coastal developments in India.

This report deals with the importance of the CRZ notification, how it has been implemented, and what role it has played in bringing the environmental sustainability to the India's coastal regions and what has made this CRZ notifications to fail to curb the environmental violations in the coastal regions and what amendments were made in later stages to strengthen the existing CRZ notifications, and the possible suggestions that could be considered for bettering the existing laws.

This analysis is limited to studying only the environmental aspects of the CRZ notification in brief, we will not be discussing about the socio economic impact of it, this study takes the qualitative approach, the inferences and the conclusions are based on the site survey, interviews, literature reviews etc.

The report can be broadly categorised into four parts, the first part of the report covers the brief introduction to the CRZ notifications of 1991, Swaminathan committee's report of 2005, CRZ notifications of 2011 and present author's inferences.

The second part of the report deals with the analysis of the CRZ notifications effectiveness by taking up a case study, in this case we will studying the infrastructure project that's been currently under construction in Mangalore, Karnataka. We will be studying the detailed analysis of the Mangala corniche ring road project with respect to its environmental especially CRZ notifications compliances.

The third part of the report divulges the detailed analysis of the project and discusses lapses and the deficits that current CRZ notification holds. The fourth part of the report presents conclusion and the suggestions.

## Chapter 2: Literature Study

A policy is a board structure that acts as the guideline for planners and authorities. It sets out the general objectivities and its execution is left to the authorities. Preparation of the Policy is a vital part of planning as it the instrument of change of a given situation into a favoured environment. It is through the policy that we can accurately recognize and identify the issues fix priority to come up with the alternative methodologies and solutions; make a choice among alternatives on the basis of comprehensive analysis of its benefits and costs; verbalize the decision regarding objectives communicated; give association, staff and assets to guarantee powerful execution; and to set out a mechanism for ceaseless monitoring of the policy.

In India, consideration has been paid right from the old times to the present age in the field of environmental protection and improvement. Generally talking, the laws identifying with environment change were straightforward however very successful and individuals were mindful of the need of environmental protection and conservation. The present day legislation in India are the result of the ever growing industrialization and populace explosion. It is stated that there are more than 500 Central and State statues which directly or indirectly have expressed some concerns over ecological and environmental protection, besides these laws there are other common laws and constitutional remedies that deals with environmental protection are also there.

## 2.1: Meaning of "Environment"

The title of the Environment Act give a feeling that the law connotes a sign of an adjustment in accentuation from the narrow concept of pollution control to the more extensive parts of environmental protection. On the other hand, the meaning of "Environment" under the Act may give a negative impression.

As per Sec. 2(a), "environment" includes water, air, area, and the inter-relationship which exists among and between water, air and area, and individuals, other living organisms, plants, microorganisms and property. Ecological poison is characterized in Sec. 2(b) as any solid, liquid or gaseous substance present in such concentrations as may be, or tend to be, injurious to the environment. Environmental pollution is defined in Sec. 2(c) as the presence in the environment of any environmental pollutant. Sec.2 shows a total lack of understanding of the modern concept of environmental pollution and the factors that lead to the imbalance of the ecosystem. The modern concept of environmental pollution is more extensive. It might be said that any kind of deviation of any substance from its unique spot and removal of its cause is called environmental pollution, on the grounds that such transferability may bring about or have a tendency to bring about harm or damage to the nature. For example, a plant is removed from its unique habitat and introduced in a new habitat may bring about soil contamination for such removal. The major urban environmental ills like sound pollution, traffic, ghettos and congestion are conspicuously not dealt in the Act and no provisions have been made for their control. Further, the Act concentrates on natural contamination and unsafe substance alone, as a wellspring of environment debasement. This centre disregards different reasons for corruption, for example, deforestation and unrestricted development. The Act is drafted with the confounded controversy that insurance and change of environment are synonymous to reduction of contamination. And afterward, contamination is misinterpreted as to be ecological quality degradation created by release of pollutants.

The definition of environmental pollutant includes solid, liquid or gaseous „substances“ only. There are pollutants which are not substances e.g. heat energy (which causes thermal pollution), nuclear radiations, and sound (which causes noise pollution).

Thus, the definition of „environment“ under the Environment Protection Act is not exhaustive but inclusive one. If the expression “includes and means” used in the definition, then it would become an exhaustive definition. However, a meeting of experts recommended that:

“An inclusive definition will have the distinct advantage for the exercise of vast rule-making power under Act and for a more effective enforcement of the Act. Exhaustive definitions in an evolving field like environment, are likely to lead to recourse to judicial interpretation of highly complex scientific and technological matters, whose complexion is every changing as knowledge accumulates dynamically.”

## 2.2 Policies and Laws governing Environment in Ancient India-

In ancient India, conservation and cleaning up of environment was the embodiment of Vedic society. The preservation of environment formed a passionate article of faith, reflected in the everyday lives of the individuals furthermore revered in myth legends, culture, art, and religion. In Hindu religious philosophy forest, trees and wild life protection held a position of exceptional veneration. Cutting green trees was restricted and punishments was given for such acts. Under the Hindu cultural and moral values acted as guidelines towards environmental preservation and conservation. For example, to keep up the nature of water and to stay away from the water contamination, Manu prompted not to debase water by urine, stool or coughing, un-pious objects, blood and toxic substance. Yagyavalkya Smriti and Charak Samhita give numerous guidelines for the utilization of water for keeping up its immaculateness. Under the Arthashastra, different disciplines were recommended for cutting trees, damaging forestlands, and for killing animals. The State assumed the functions of maintenance of forests, regulation of forest produce and protection of wildlife. Arthashastra likewise endorsed discipline for creating contamination and un-community sanitation. Along these lines, ancient India had a theory of ecological administration chiefly cherished in old directives as they were contained in numerous sacred texts and smritis. The environmental ethics of nature conservation were not only applicable to common man but the rulers and kings were also bound by them.

## 2.3 Policy and Laws in Medieval India-

Amid the Moghul period environment protection did not get much consideration. It is rightly said:

"To Moghul rulers, forest implied a place where they could go and hunt. To their governors, the forest lands were properties which yielded them some income. Barring „royal trees“ which enjoyed patronage from being cut with the exception of upon a charge, there was no confinement on cutting of indigenous trees. Therefore, forest lands amid this period shrank consistently in size."

Nonetheless, the forestlands were managed with the assistance of an intricate range of principles and regulations woven around the socio-cultural features as well as the economical exercises of local communities. Further, the religious strategy of Akbar was based on the principal of complete tolerance also reflects concern for protection of birds and beasts so much so as endeavours were taken during his regime to stop pointless killing of the animals. During the medieval time, another arrangement of legitimate standards were drafted, administered by the sacred Koran which pronounces that "we made from water every living things".

## 2.4 Policy and Laws during British rule in India-

With the establishment of the British Colonial regime, numerous progressions were brought to the religiously inclined indigenous framework. The British administration saw the start of well laid out forest management practice. It was the forestry, wild life and water contamination which attracted their consideration specifically. In the field of forest conservation, the sanctioning of the Forest Act, 1865 was the first stride at affirming the State imposing business model directly over the forest. The customary privileges of local groups to manage forestlands and forest produce were very much curtailed by this Act. The Forest Act of 1927 particularly denied individuals any rights over the forestland and its produce just because they were domiciled there. In the field of wild life protection, the British followed selective wild life preservation.

Amid this period, the concern towards security and administration of water assets in India got through, the first significant improvement as Bengal Regulation VI of 1819, which did not say protection of water environment from contamination but rather contributed the Government with sway over water assets. It checked radical movement from before practices, which regarded the water assets as "common property" of all, with control lying in the hands of the people of the country. The Shore Nuisance (Bombay and Kolaba) Act of 1853 and the Oriental Gas Company Act of 1857 forced limitations on the fouling of water. The Merchant Shipping Act of 1858 managed counteractive action of contamination of ocean by oil. In 1860, interestingly, an endeavour was made to control particularly water and environmental contamination through criminal endorses under the Indian Penal Code, 1860. As against restrictive procurements under the IPC, 1860, the Easement Act of 1882 permitted a prescribed limit to pollute the water yet it was not a absolute right (one was not to "absurdly contaminate" or cause "material harm to other"). The Bengal Smoke Nuisance Act of 1905 and Bombay Smoke Nuisance Act of 1912 were the before laws sanctioned amid the British Regime, aimed at controlling air contamination. Hence, the ecological strategy amid the British rule was not coordinated at the protection of nature yet rather was coordinated at the appropriation and exploitation of common assets with an only goal of monetary gain. Nor were there compelling laws for the protection of environment. Further, these laws had a restricted degree of freedom and constrained regional scope.

## 2.5 Environmental and Policies and Laws after Independence of India-

The India Constitution, as embraced in 1950, did not manage the subject of environment or prevention and control of pollution (until 1976 Amendment). The original text of the Constitution under Article 372(1) has fused the prior existing laws into the present framework and gives that despite the nullification by this

Constitution of enactments alluded to in Article 395, however subject to different procurements of alternate procurements of the Constitution, all laws in power instantly before the beginning of the Constitution should stay in power until modified, revoked or changed by a capable governing body or other equipped power. Thus, even after five decades of independence, there are plenty of such laws which are still in operation with no noteworthy charge in them.

The post-freedom period, until 1970, did not see much legislative concerns focussed towards environmental protection and improvement. The Stockholm Declaration of 1972 was maybe the first real endeavour to moderate and ensure the human environment at the universal level. As a result of this Declaration, the States were obliged to embrace administrative measures to secure and enhance environment. Appropriately, Indian Parliament embedded two Articles, i.e., 48A and 51A in the Constitution of India in 1976,[2] Article 48A of the Constitution rightly guides that the State should try to secure and enhance the earth and shield timberlands and natural life of the nation. So also, condition (g) of Article 51A forces an obligation on every resident of India, to secure and enhance the regular habitat including woods, lakes, waterway, and wild life and to have sympathy for living animals. The total impact of Articles 48A and 51A (g) is by all accounts that the "State" and in addition the "subjects" both are currently under constitutional obligation to moderate, see, secure and enhance the environment. Each generation owes an obligation to every succeeding generations to create and save the characteristic assets of the country in the best conceivable way.[3] The phrase 'protect and improve' showing up in both the Articles 48A and 51A (g) appears to ponder an affirmative government activity to enhance the nature of environment and not simply to protect the environment in its degraded structure. Aside from the constitutional mandate to ensure and enhance the earth, there are an a lot of legislations[4] on the subject yet more significant enactments for our purpose are the Water (Prevention and Control of Pollution) Act, 1974; the Water (Prevention and Control of Pollution) Cess Act, 1977; the Air (Prevention and Control of Pollution) Act, 1981; the Environment (Protection) Act, 1986; Public Liability Insurance Act, 1991; the National Environment Tribunal Act, 1995 and the National Environment Appellate Authority Act, 1997; the Wildlife (Protection) Act, 1972; the Forest (Conservation) Act, 1980. The Water Act accommodates the counteractive action and control of water contamination and the keeping up or turning of the wholesomeness of water.

Two early post-independence laws touched on water pollution. The Factories Act of 1948 obliged all manufacturing plants to make compelling plans for waste transfer and engaged State Governments to frame rules implementing this mandate. Under the River Boards Act of 1956, waterway sheets set up are engaged to avert water contamination of between state streams. To avoid savagery to creatures, the Prevention of Cruelty of Animals Act was framed in 1960. Some States took initiative in the field of environmental protection, viz., Orissa River Pollution Prevention Act, 1953, and, Maharashtra Prevention of Water Pollution Act, 1969.

While the Orissa Act was bound just to rivers, the Maharashtra Act reached out to streams, watercourses, whether streaming or until further notice dry, inland water both normal and simulated, and underground streams. In this way, there were scattered procurements for checking contamination of air, water, and so forth. Yet there was no brought together exertion in adding to any strategy concerning the contamination exuding from these ranges. This position went up to the seventies. Meanwhile concern arose over, inter-alia, population increase, higher pollution levels; human impact on wild life and organic population and natural landscapes and other aspects of resource depletion. It was the Stockholm Declaration of 1972 which turned the consideration of the Indian Government to the visitor point of view of environmental protection. After 1970, special environmental laws were authorized by the Central Government in India.

The Wildlife (Protection) Act, 1972, targeted at rational wild life management. The Water (Prevention and Control of Pollution) Act, 1974, sets out the foundation for pollution control boards at the central and the States to act as this vigilant body for counteractive action and control of contamination. The Forest (Conservation) Act, 1980 planned to check deforestation, redirection of forestland area for non-forestry purposes, and to promote the practice of social forestry. The Air (Prevention and Control of Pollution) Act, 1981, was instituted to monitor and prevent the air contamination through pollution control boards. The Environment (Protection) Act, 1986 is a historic enactment which accommodates single window in the country for protection, conservation and the improvement of environment and targets at fixing the policy lapses found at the different level. The Public Liability Insurance Act, 1991, accommodates obligatory protection with the end goal of giving immediate relief to individual influenced by mishaps happening while taking care of any risky substance. The National Environment Tribunals Act, 1995, was detailed in perspective of the way that civil courts prosecutions take quite a while (as happened in Bhopal case). The Act accommodates expedient transfer of ecological related cases through natural tribunals. Under the Act, four benches of the tribunal will be set up in Delhi, Calcutta, Madras and Bombay and 8,000 of the most Hazardous industrial units in the nation will be brought under its scrutiny.

The National Environment Appellate Authority Act, 1997, accommodates the built up of a National Environment Appellant Authority (NEAA) to hear bids concerning limitation in territories in which any commercial ventures, operations or procedures might not be done or should be completed subject to specific defends under the Environment (Protection) Act, 1986. The Biological Diversity Act, 2002, is a noteworthy enactment intercession effected for the sake of the groups expected to be included in the assurance of biodiversity around them. The Act expects to encourage access to hereditary materials while ensuring the customary information connected with them.

## 2.6 Policy Statements NCS 1992

In 1992, the Union Government embraced a „National Conservation Strategy and Policy Statement on Environment and Development“ (NCS). The introduction to the NCS receives the arrangement of „sustainable development“ and proclaims the government’s duty to re-orient policies and actions, in harmony with the ecological perspective“. The NCS continues to perceive the huge measurements of the ecological issues confronting India and pronounces methods for activity in different circles, for example, agribusiness, forestry, industrial developments, mining and tourism. Special provisions in the NCS manage the rehabilitation of persons expelled by expansive development projects.

Again, in the year 1992, the Union Government turned out with “Policy Statement for Abatement of Pollution” This announcement states the goal of the legislature to incorporate ecological contemplations into choice making at all levels. To accomplish this objective, the statements embraces key directing standards, namely:

- (i) Prevention of contamination at source;
- (ii) Adoption of the best available technology;
- (iii) Polluter pays standards; and
- (iv) Public participation in decision making.

The policy statements, however unenforceable in a court of law, speak to a wide, political accord and enhance the obligations of the administration under the Directive Principles of State Policy contained in Part IV of the Constitution. In the hands of an imaginative judge the policy reports may serve as a guide for translating environmental statutes or for spelling out the commitments of government under environmental laws.

## 2.7 Comprehensive Authorities Given to Central Government

Sec.3 of the Act engages the Central government to take every single such measure as it regards fundamental or practical for the reasons of securing and enhancing the nature of the environment and averting, controlling and decreasing environmental pollution. The Central Government is authorized to set new national standards for the quality of the environment as well as standards for controlling emissions and effluent discharges; to manage industrial areas; to recommend techniques for overseeing dangerous substances; to set up protections for counteracting mishaps; and to gather and disperse data in regards to environmental pollution. Under Sec. 5, the Central Government has power to issue direct written orders, including requests to close, disallow, or manage any industry, operation or process or to stop or control the supply of power, water or some other administration. Different forces allowed to the Central Government to guarantee consistence with

the Act incorporate the power of entry for examination, testing of equipment , etc.,(Sec.10) and the ability to take tests of air, water, soil or some other substances from wherever for analysis(Sec.11).

At the point when one thinks about the provisions of the Water and The Air Act with those of the Environment Act it turns out to be clear that the forces and capacities like those vested in the Boards under the Water and Air Acts are vested in the Central Government under the Environment Act. The critiques reason that the Act is adroitly indistinguishable to the Air Act and Water Act and does not provide the Central Government with new instruments (e.g. natural effect evaluation) for averting ecological degradation. Further, centralization of forces in the hands of the Central Government is not an insightful step towards environmental protection. It is likely at times that choices of the Government may be impacted preferably by political contemplations than by environmental ones. Thus, the task has to be entrusted to an independent and expert agency created by state.

## 2.8 General Legislations on Environment

In India, there are a number of laws which deal with various aspect of environment protection regulation, conduct of environmentally harmful activities and provide for remedies in case of their breach. Some of them are „general“ having an “indirect” bearing on environment protection, while others are „special“ (viz. Water, Air and Environmental Acts, Forest Act, etc.) being “directly” concerned with environment protection. General legislation comprises of Indian Penal Code, 1860; Code of Criminal Procedure, 1973; Code of Civil Procedure, 1908; and, specific sectoral legislations having a bearing on the environmental aspects viz. The Factories Act, 1948, the Mines Act, 1952, the Industries (Development and Regulation) Act, 1951, the Insecticides Act, 1968, the Atomic Energy Act, 1962, the Motor Vehicles Act, 1939 and 1988, the Delhi Municipal Corporation Act, 1957, etc. Under Indian law, for instance, the remedies for a public nuisance are (i) a criminal prosecution for the offence of causing a public nuisance (Indian Penal Code 1860, Sec. 268), (ii) a criminal proceeding before a Magistrate for removing a public nuisance (Criminal Procedure Code 1973, Secs. 133-44), and (iii) a civil action by Advocate General or by two or more members of the public with the permission of the court, for a declaration, an injunction or both (Civil Procedure Code 1908, Sect. 91). The remedy under the civil law is not often used, however this provision is a reservoir for class action against environmental violations. Traditionally, the interpretation of the Indian Penal Code has been viewed as a conservative attempt at enforcement. This is because punishment and fines have been characterized as meagre. The law of public nuisance contained in Sec. 133, Cr. P.C. has been used in a number of cases for the purpose of protection of the environment.

## 2.9 Legislative Measures (Delegated Legislation)

In the midst of the nineties, a few measurements have been taken by the Central Ministry of Environment to give legal and institutional premise for the management and the protection of environment by notification of standards, delegation of powers, and identification of agencies for hazardous chemicals management and setting up of Environmental Councils in a few States. Another section directing unsafe industrial procedures was brought into the Factories Act. In the range of assigned enactment, effluent and emanation measures were determined for 24 industries and general guidelines for emanating release and for noise pollution have been recommended under the Environment Act. For the analysis of water and air tests, around seventy natural research facilities were set up throughout the nation. Rules for the production and transport of risky substances and microorganisms and for the management of toxic wastes were issued. Coastal Zone Regulations (CZR) were issued in 1991. A Gazette notice on ecological review has been issued, where by environment review has been made mandatory for all commercial enterprises obliging natural leeway under the Water Act, 1974 or The Air Act, 1981, and so on., Further, in 1996, the Central Government encircled the Chemical Accidents (Emergency, Planning, Preparedness and Response) Rules to Supplement the Hazardous Chemical Rules of 1989. In 1998, the Central Government issued the Bio-Medical Waste (Management and Handling) Rules to direct bio-medicinal waste.

The Central Ministry of Environment issued a notice in 1994 having Environment Effect Assessment statutory for 29 distinctive actives in industries, mining, irrigation, power, and so on. Another new directions were included 1997, to the Environment Impact process in India, by a amendment. The State Pollution Control Boards had nothing to do in the appraisal process as such. They were currently given another part to play. Further, on account of certain classifications of thermal power plants, obligation of environmental leeway is currently presented on the State Government.

Further, the Central Government ordered the Prevention and Control of Pollution (Uniform Consent Procedure) Rules, 1999, obliging all commercial enterprises recorded in Schedule VIII of the Environment Act, 1986 to get assent from the State Board or the Pollution Control Committee. With the end goal of „consent management“, the commercial ventures are classified as „red“, "orange" and „green“. The Environment (Sitting for Industrial Projects) Rules, 1999, disallow setting up of certain businesses (including hazardous industries) in certain areas such as within the municipal limits of all Municipal Corporation/ Councils and Nagar Panchayats and a 25 km belt around the urban areas having populace of more than 1 million; the outskirts of the wetlands, national parks, sanctuaries and bio reserves.

## 2.10 The Environment Protection Act, 1986

Despite the fact that there is a large group of enactment in India went for protecting the environment from getting polluted and keeping up the ecosystem in balance, environment has not so far been considered in its totality. The Environment (Protection) Act, 1986, enacted under Article. 253 of the Constitution of India to execute the decisions taken at the United Nations Conference on Human Environment held at Stockholm, 1972 was required to fill the lacuna and give a blue print for a progressive policy for protecting the ecosystem. The Act tries to supplement the current laws on control of contamination by ordering a general enactment for environmental protection and to fill the crevices in regulations of major environmental hazards. On the other hand, as it ended up being, it is, best case scenario a paper or toothless tiger intended to alleviate the inclination of environmental risks. Nonetheless, as it turned out be, it is, best case scenario a paper or toothless tiger intended to soothe the emotions of the environmentalist. The Act has been conjured in not very many cases. The Environment Protection Act is an umbrella enactment instituted to accommodate the Central Government coordination over the focal and State powers set up inter-alia under the water Act, 1974 and the Air Act, 1981.

## 2.11 Introducing CRZ-

The enactment of the Coastal Regulation Zone (CRZ) Notification of 1991 in India surely set the start of the State's Involvement in the preservation of our coasts. The reason for sanctioning of CRZ Notification was to ensure and preserve the coast and the ocean. Environmental concern drew from the environmental Protection Act, 1986. Furthermore, the coastal communities, NGO's and conservationists respected and welcomed this move. Anyhow, it did make a tumult among different stakeholder like Industries, Industrial Aqua culturists and Tourism/Hotel Lobbies. Really the CRZ Notification infringement influence the security and fate of a large number of traditional fishing families which are threatened with physical and biological relocation by industrial and real estate developers searching for short term monetary benefits, as opposed to long term environmentally sustainable utilization. And more often they violated the Notification and the traditional fishing community took this legal weapon to fight. On the other hand, the unprotected immeasurable extends of our coasts positively were defenceless against alleged 'development'. Consequently emerged the need to think about the "conditions" of our coasts. In spite of the fact that there were reports of infringement from here and there, nobody knew the degree of it at a full scale. So this activity is an endeavour to deliberately archive the infringement of CRZ Notification, remembering the soul of the CRZ Notification instead of its

legitimate language (for the law and lawfulness set the privilege escape clauses for the violators!) In the individual correspondence to the Additional Secretary, MoE & F, Bittu Sehgal writes that the “land developers around the country are working overtime with state government officials to encase literally thousands of crores of rupees worth of public lands.. There is a comparative move forthcoming for forestlands and together the assault on beachfront belts and forest belts will modify the habitat of more than 300 million individuals within the following three to five years. To my mind this represents a more serious threat than any other development project or anti-people initiatives ever started on the Indian subcontinent in the previous 50 years. The net impact of both changes will be the production of unlimited monocultures in both forestlands and coastal belts: In woods, teak, eucalyptus, acacias, wattle and poplars will acts as the source of livelihood for the common people. In coastal territories, salt bogs, wetlands, sand hills, corals, mudflats and mangroves – which are the reproducing grounds of fish upon which these traditional communities have been thriving and surviving will be supplanted by prawn cultivates, five star inns, and thermal power plants, compound.

India's coastline and its close shore marine environment are progressively being pressurized by various uses and exploitation. Such burdens are expanding at a quick pace because of India's quickly developing economy and the across the board utilization of progressing technologies in traditional activities, for example, fisheries or mining. At first sight, these advancement appear to be directing current administrative methodologies and in many cases these interests are given more priority over ecological preservation.

This section of the report fundamentally depicts the present status of India's law that controls coastal utilization, development and protection. It also investigates India's ability to oversee and balance use and conservation interests in a sustainable way. To start with, it will give a brief idea of the anthropogenic burdens on India's coasts and coastal waters and as well as other contentions emerging out of these ever increasing pressures. Secondly, it will give a prologue to India's coastal and marine environmental law and administration structures. Third, it will outline the legislative and executive competence order in the area of marine environmental law provided by India's Constitution.

## 2.12 Summary of India's coastal uses and anthropogenic stresses

India has a long coastline of 7517 km,<sup>[5]</sup> which leaves it with an Exclusive Economic Zone (EEZ) of more or less 2.02 million sq. km.<sup>2</sup> Its waterfront regions have a rich biodiversity both ashore and under the ocean, and include estuaries, lagoons, mangroves, backwaters, salt bogs, rocky coasts, sandy shorelines and coral reefs. These diverse coastal ecological systems, are opened to ever increasing anthropogenic pressures.

Human interventions along India's coastal territories have heavily degraded the coastal and marine ecosystems.[6] There are a plenty of exploratory studies that are there regarding the inexorably destructive effects of human action on India's marine surroundings like Population density and urbanization. The vast majority of India's coastal regions are low lying and densely populated. The nine coastal regions of India have a joined populace of around 440 million people out of which 330 million people live inside of 150 km of the coast. These numbers are expected to rise quickly. Resource rich coastal area is an enormous draw for people, as well as for the industries and the housing developers the facilities like, individual houses of the traditional coastal communities, infrastructural corridors for the mobilization of the goods like road networks and rail transport, creation of service industries, port offices, petroleum businesses and refineries, are among others. 'Concentrated aquaculture and farming'. In the 1960s, high yielding typologies of harvests, which were exceedingly receptive to manures, pesticides, and new watering system strategies, were acquainted with India's farming (supposed 'Green Revolution').[7] At present, a large portion of the concentrated rural activities pose a great threat of eutrophication and contamination of marine waters.[8] in addition to this, as per a FAO report of 2005, the aquaculture business in India has seen tremendous development throughout the last two decades.[9] One of the major results of the escalated shrimp cultivating industry in India, for instance, there has been the destruction of mangrove wetlands along the coast.[10]

The TERI Report likewise expresses that 'industrial activities' stay one of the major contenders for the utilization of waterfront ranges. As indicated by TERI analysts, the major favourable circumstances of the waterfront area for businesses are transportation, water utilization, and waste disposal.[11] Adverse impacts of industrial activities include diminishing ground water quality and amount, and wide spread land cover changes, incorporating change in coastal biodiversity.[12] 'shipping and port activities' additionally add to pressurizing waterfront and marine regions. As indicated by the Government of India,[13] approximately nearly 90 for every penny of the nation's exchange by volume (70 for each penny regarding quality) is moved via sea.13 likewise, the Indian sea area additionally gives a mixture of different administrations, for example, cargo carrying services, shipbuilding and boat repairing, cargo sending, light house facilities and so on.

The fifth real pressure is outlined as 'density of tourist facilities and infrastructure'. In 2006 alone, worldwide vacationer entries in Southern Asia increased by 10 percentage and India was in charge of a large portion of those arrivals.[14] More appropriately, 50 percentage all travellers to India visit the coastal states.[15]

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

As human activities heightens on India's coastline, a few contentions emerge because of the aforementioned contending developmental pressures. For example:

- Coastal forestlands are threatened by demanding requirement for natural resources for human utilization and for urban infrastructural development.[16]
- Conflicts emerge between smaller, traditional fishing communities and big industrial fishing giants who use sophisticated machineries to yield higher output are driving the current policy regarding the permitted area for fishing.[17]
- 'Customary utilization' clashes with "development" among people living in these coastal areas.[18]
- Interest in economic development conflicts with the increasing powerlessness to accept and live with the contamination brought on by the industries that are driving current economic growth.[19] such conflicts leave specialists, policymakers and administrators with the challenge to strike a harmony between progression interests and environmental protection needs.[20]

## 2.14 LEGISLATIVE AND INSTITUTIONAL DIRECTIVE GOVERNING INDIA'S MARINE AND COASTAL ENVIRONMENT

Activities influencing India's costal ecological systems are administered by a wide arrangement of legislative instruments and organizations. For instance, legislation on freshwater, waste management, the protection of biodiversity, ports, shipping, fisheries, and military uses all influence the wellbeing of coastal and marine environments. The following portion of the report will give a brief review of the current legitimate and institutional request with respect to the activities, regions, and issues that are essential for the ecologically stable development of coastal environments.

## 2.15 Constitutional Competence Order in the Area of Marine and Coastal Legislation

The Constitution of India is the Supreme Law of the land and every other power (official, administrative or legal) whether it fits in with the alliance or part States is subordinate to and coordinated by the Constitution.[21] The Indian Constitution engages the Union Parliament and the state assemblies to order and

actualize laws identifying with exercises under their domain.[22] It separates territories of jurisdiction under three legislative lists: 'Union', 'State', and "Simultaneous" lists.[23] The Central and state governments have selective power over the Union and State records individually, and of government have jurisdiction over the activities in the Concurrent list, with the Central Government retaining overriding powers. The residual power to legislate on subjects not covered in the three lists is delegated to the Centre by Article 248. Article 249 empowers the Centre to legislate on any subject in the State list in the 'national interest'; it can also enact laws on state subjects if two or more state legislatures provide consent to such legislation (Article 252).[24] With regard to governing marine and coastal areas, the Union list comprises:

- International treaties, agreements and conventions[25]
- Shipping and navigation on inland water ways (national waterways)[26]
- Maritime shipping and navigation, including shipping and navigation on tidal waters[27]
- Major ports and port authorities [28]
- Regulation and development of inter-state rivers and river valleys [29]
- Fishing and fisheries beyond territorial waters [30] The State list of the Seventh Schedule comprises:
- Fisheries within territorial waters [31] The Concurrent list of the Seventh Schedule comprises:
- Shipping and navigation on inland water ways[32]
- Minor and Private Ports[33]

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

## 2.16 Laws Governing Coastal Activities and Institutions Responsible for Their Implementation

The dissemination of the official powers between the Centre and individual States generally takes after administrative forces concerning the subjects in the Union and State records. In any case, as for the subjects in the Concurrent lists, the executive functions usually stays with the States, yet it is up to the discretion of the Central Government to take up the administration of the laws identifying with any subject in the Concurrent list. The Central Government guarantees that states are in agreeability with the Union laws. Alongside the CRZ Notification, 2011 the accompanying laws are especially significant for the administration of India's coasts in

the regions of ecological insurance, shipping [34], farming, and defence.[35] Such laws incorporate, for instance, the:

- Forest (Conservation) Act, 1980
- Water (Prevention & Control of Pollution) Act, 1974
- Hazardous Waste Management & Handling Rules, 1989 [36]
- Environmental Impact Assessment Notification, 1994 [37]
- Environment (Protection) Act, 1986 [38]
- Indian Wildlife (Protection) Act, 1972 [39]
- Biological Diversity Act, 2002.
- Indian Ports Act, 1908.
- Deep Sea Fishing Policy, 1991.
- Indian Fisheries Act, 1987.
- Coast Guard Act, 1978.
- Maritime Zones (Regulation) of Fishing by Foreign Vessels) Act, 1981 [40]

## 2.17 MARINE PROTECTION AND COASTAL MANAGEMENT UNDER THE COASTAL REGULATION ZONE NOTIFICATION

As demonstrated by the list of authoritative instruments above, the current arrangement of enactment overseeing exercises in India's coastal states is to a great extent sector specific. From a global relative viewpoint, sectorial approaches have a tendency to disregard environmental concerns; sector specific interests, for instance, fisheries, tourism, or the transportation division typically exceed ecological concerns.[41] Where measures are embraced to protect the environment, they frequently do not have an ecological perspective, taking into account neither the interdependency of all ecosystem elements nor the cumulative effects of the different pressures on them.. There is an authentic need to embrace a natural protectionist way to deal with represent the utilization of beachfront and marine zones. Among the aforementioned laws and approaches, the CRZ Notification is the main law that has been particularly established to control and direct development and growth of distinctive activities along India's coasts. As of late, it has additionally considered the coastal and marine environment up to 12 nautical miles. Appropriately, it could be contended that the CRZ Notification is an indicator of how far India has moved towards a coordinated waterfront zone and marine administration. The accompanying segment will focus on the extension, and scope, and implementation difficulties of the CRZ Notification, 2011. Yet, first and foremost, it will give a brief history of the advancement of the CRZ Notification since its commencement in 1991.

## 2.18 Background on the CRZ Notification from 1991 to 2010

Under the Environment (Protection) Act,[42] the MoEF issued the Coastal Regulation Zone Notification 1991 (CRZ 1991 or 1991 Notification) for the protection of the coastal areas.[43] The administrative approach of the CRZ 1991 was somewhat short sighted: it was aimed fundamentally at allowing just those activities that are completely reliant on being situated in the waterfront environment and to keep out the rest.[44] Accordingly, different activities were limited, while others were allowed yet subjected to particular commitments and conditions. Moreover, the whole Coastal Regulation Zone was grouped into diverse zones, i.e., CRZ-I, CRZ-II, CRZ-III and CRZ-IV in light of ecological contemplations and the degree of the development of human settlement (urban or rural).[45] The zones varied concerning which exercises would be permitted inside of their geological extension. Under the 1991 Notification, the obligation regarding usage was essentially allotted to the State Governments.[46] The 1991 Notification expressed that the respective coastal State Government ought to recognize, characterize, and record all the CRZ zones in the State Coastal Zone Management Plans (SCZMP) and have them endorsed by the MoEF.[47] Throughout the coming years, then again, it got to be clear that the CRZ 1991 confronted extreme execution deficits.[48] Some of these difficulties were because of different components:

- The notice stipulated uniform regulations notwithstanding for novel and naturally delicate ranges, for example, the islands of Andaman and Nicobar.
- There were no fitting approval practice for high-impact exercises around the coast.
- There was an absence of checking instruments and authorization components to check infringement.
- Pollution from land based activities was not considered.
- Interests of customary coastal groups living in naturally delicate regions were not considered.
- Frequent revisions to the law (25 times in 19 years).

Especially numerous revisions of the CRZ 1991 are demonstrative of the way that the MoEF has been always endeavouring to (re)balance the ever changing and growing utilization and preservation conflicts in the coastal regions. A few critics and investigators have brought up that these changes have rather settled for lowered conservation standards and legal certainty,[49] and made space for lobbying groups that supported industrial interest over compliance of environmental standards.[50] The most serious issue, was that the presence of the CRZ Notification was totally overlooked by the State Government's authorities in charge of execution. This particularly came to light through a proceeding before the Indian Supreme Court, *Indian Council for Enviro-Legal Action v. Union of India*. [51] The applicant was a NGO working for the purpose for environmental protection. The solicitor fundamentally fought, in this Public Law, *Environment and Development Journal*

Interest Litigation (PIL)',[52] that the CRZ Notification, 1991 had not been actualized or upheld for several years after being formulated.

The applicants contended that because of the non-implementation of the CRZ Notification, 1991, developments activities inside of the coast stayed unregulated, accordingly permitting irreparable ecological damage. The Union of India for this situation reacted that they had encountered viable troubles in actualizing the Notification.[53] The Supreme Court in its judgment presumed that 'Despite the fact that, laws have been passed for the protection of environment, the the enforcement of the same has been tardy, to say the least.. With the administrative powers not demonstrating any worry with the implementation of the said Acts, and with the development occurring for personal gains at the detriment of environment.' [54] The Supreme Court eventually called for proper and detailed implementation of the law.[55]

Court observed that the motivation behind the CRZ Notification is to secure the delicate coastal territories, and those exercises that cause environmental and ecological degradation can't be permitted.[54] above all, the Court requested the Central Government to constitute an authority under Section 8(3) of the Environment (Protection) Act, 1986 and to confer on the said authority all the powers necessary to protect the ecologically fragile coastal areas, seashore, waterfront and other coastal areas and specially to deal with the situation created by the shrimp culture industry in the coastal States/Union Territories'.[55]

In the fallout of these choices, the National Coastal Zone Authority (NCZMA) and State Coastal Zone Authorities (SCZMA) were instituted with a specific end goal to control and implement the CRZ Notification.[56]As the result of which, a few steps have been taken under the CRZ Notification, 2011 to improve checking, control, and implementation, and also to increase transparency.[57] However, executing the provisions laid down in the CRZ Notification has generally shown to pose serious challenges.

## 2.19 Progress of the Coastal Regulation Zone Notification 2011

All the more as of late, on 6 January 2011, yet another amendment to the CRZ Notification was distributed in the Gazette of India.[58] concerning draft of the revised Notification, the MoEF has depended broadly on scientific input and wide stakeholder contribution.

In 2009, the MoEF set up a committee under the authority of the prestigious researcher M.S. Swaminathan to review the scientific, legal, and policy provisions of the CRZ Notification, 1991.[59] The advisory group comprised of policy makers and legal experts, and in addition different specialists from different fields, for example, marine science and engineering, and environmental planning.. Following a scientific report, a draft Notification was issued by the MoEF in May 2010. Between May 2010 and January 2011, the MoEF held public consultations and deliberations with stakeholders representing different sectors and various regions. In comparison to the 1991 Notification, the 2011 Notification specifically the accompanying new elements:

- It augments the extent of the Notification to incorporate regional waters inside of the CRZ.[60]

- The islands of Andaman and Nicobar and Lakshadweep, attributable to the interesting and environmentally fragile nature of their environment, and the marine territories encompassing these islands up to their regional limits of confinement have been independently secured under the domain of the Island Protection Zone Notification.[61]
- The Notification presents the idea of a 'Hazard line' that would be demarcated by the MoEF.[62] Natural fiascos, for example, tsunamis and floods cause major devastation in the coastal zone;; the fundamental motivation behind characterizing a hazard line is to show undermined territories and therefore to secure the life and property of the waterfront communities and additionally the waterfront facilities and infrastructures. As needs be, the rules for the arrangement of Coastal Zone Management Plans propose that, 'no development activities other than those listed above shall be permitted in the areas between the hazard line and 500 m or 100 m or width of the creek on the landward side'.[63]
- The CRZ 2011 sets out a point by point procedure for getting approbation for developmental projects falling inside of the extent of the Coastal Regulation Zone. Besides, post clearance inspection and authorization mechanisms have been established.[64]
- Another class called 'areas requiring special consideration' has been presented in the 2011 Notification. Its intention is to give a special administrative provision to the most critical coastal environments, which comprise of (i) the CRZ territories of Greater Mumbai, Kerala and Goa, and (ii) the extremely vulnerable coastal areas such as Sunderbans.[65]
- The 2011 Notification gives coastal states with clear rules to the preparation of Coastal Zone Management Plans.[66]
- The 2011 Notification set up concrete measures to battle industrial contamination from land based activities keeping in mind the end goal to prevent erosion and other forms of environmental degradation in coastal areas.[67] The essential structure of the administrative methodology of the CRZ Notification, 1991, nonetheless, was kept up in the CRZ Notification, 2011

## 2.20 Overview of the Structure and Content of the CRZ Notification, 2011

The principle goals of the CRZ Notification, 2011 as expressed by the MoEF.[68] seem to be: a) a) to ensure livelihood security to the fishing communities and other local communities living in the coastal areas, b) to conserve and protect coastal stretches, and c) to promote development in a sustainable manner, based on scientific principles and taking into account the dangers of natural hazards in the coastal areas and sea level

rise due to global warming. In principle, the Notification now defines the CRZ (and thus its geographical scope) as:[69]

- The land area from the High Tide Line (HTL) to 500 m on the landward side along the waterfront.
- The area zone between HTL to 100 m on the landward side along the tidal impacted water bodies that are joined with the ocean. Tidal affected water bodies implies oceans, inlets, estuaries, brooks, backwaters, tidal ponds, and so forth.
- The land area falling between the 'peril line' and 500 m from HTL on the landward side.
- The land area in the middle of HTL and Low Tide Line (LTL) – termed as the intertidal zone.
- The water and bed zone between the LTL to the regional water limit (12 nautical miles) in the event of ocean and water territory between the LTL to LTL in case of tidal influenced water bodies.

To guide and control land use at the coast, the CRZ Notification, 2011 builds up a 'three- step' administrative approach. Initially, it by and large disallows and licenses particular exercises in the whole CRZ zone (these procurements incorporate either special cases to denied activities or awards consent for activities with particular conditions respectively).[70] Second, it gives a more particular administration by proceeding with the outline of the CRZ region into distinctive zones and by characterizing what sort of activities are disallowed and allowed in these regions, in particular, in CRZ-I to CRZ-IV and in addition two other particular zones.[71] Third, it further incorporates provisions regarding the clearance of activities permissible under the Notification.[72] Apart from the question of which activities are permitted and under what conditions, it provides rules on the preparation of Coastal Zone Management Plans [73] as well as on the enforcement of the CRZ Notification.[74]

## 2.21 Activities Generally Prohibited in the Coastal Regulation Zone

paragraph 3 of the CRZ Notification, 2011 builds up a general ban on the establishment of huge scale industries and particularly harmful activities in the coastal belts. It forbids, inter alia, the setting up or development of new or existing industries, waste disposal and effluent discharge, port and harbour activities, land recovery, and the dressing or change of sand hills, slopes, and other characteristic elements including altering existing landscapes.

This list recognizes increasing pressures on India's coasts and its near shore marine environment. The general ban, on the other hand, is qualified by far reaching exceptions attached to every individual type of undertaking or activity. The list of special cases incorporates especially those activities of interest to the energy industries, and those of the transportation and the tourism sector.[75]

## 2.22 Activities Allowed Under the CRZ Notification, 2011

Passage 4 of the CRZ Notification, 2011 sets out those activities that are for the most part allowed inside of the CRZ zones. Be that as it may, it subjects these activities to earlier clearance from the concerned state authority.[76] Activities that are allowed and require prior clearance from the state , for example, projects that require waterfront and foreshore facilities, specific housing, construction or operation schemes, (as specified in CER-II to CRZ-IV), as well as various types of projects listed in the CRZ Notification that also attract clearance under the Environmental Impact Assessment (EIA) Notification, 2006.[77] Other extensive or high impact activities are, in principal, permitted however require clearance from the MoEF.[78] Activities include, inter alia, development activities relating to projects of the Department of Atomic Energy or Ministry of Defence, and the laying of pipelines, conveying systems, and transmission lines. Other activities include the exploration and extraction of oil and natural gas and all associated activities and facilities, mining of rare minerals, and development of facilities for generating power by non-conventional energy sources, and desalination plants.

## 2.23 Permission and Restriction of Activities in the Different CRZ Areas

Notwithstanding the general bans and authorizations relevant to the whole CRZ, the CRZ Notification, 2011 includes region particular administrations. Waterfront extends falling inside of the extent of the CRZ zone can be characterized into one of six classifications of coastal habitat. CRZ-I incorporates the 'territories that are environmentally sensitive and the geo-morphological components which assume a part in the keeping up the integrity of the coast' for instance, mangroves, corals and coral reefs and related biodiversity, sand ridges, etc.[79] likewise, CRZ-I additionally incorporates the territory between Low Tide Line and High Tide Line. The 2011 Notification expresses that the advancement or development activities in CRZ-I should be directed by the concerned CZMA as per the accompanying norms:[80] No new development might be allowed in CRZ-I with the exception of activities identifying with the Department of Atomic Energy and other major infrastructure projects such as, for example, pipelines, construction of trans-harbour sea link and roads, and

the Green Field Airport (already permitted) at Navi Mumbai. Some minor projects such as the exploration and extraction of natural gas, and the construction of dispensaries, schools, public Rain shelters, are permitted between the Low Tide Line and High Tide Line in areas which are not ecologically sensitive.

CRZ-II includes the areas that have been developed up to or close to the shoreline. 'Developed area' refers to that area within the existing municipal limits or in other existing legally designated urban areas that are substantially built-up and have been provided with drainage and approach roads and other infrastructural facilities, such as water supply and Sewerage mains. Activities and structures permitted in CRZ-II are, for example, the construction or reconstruction of buildings, facilities for receipt and storage of petroleum products, and notified ports. CRZ-III includes those areas that are relatively undisturbed and do not fall under Category I or II. It also includes rural and urban areas that are not substantially developed. For these areas, the Notification establishes a 'No Development Zone' within the area up to 200 m from the HTL on the landward side in the case of seafront and 100 m along tidal influenced water bodies or width of the creek, whichever is less.[81] In these zones, no development should be allowed with the exception of the repair or reproduction of existing approved structures. Be that as it may, the development or reconstruction of the dwelling units of the traditional communities including fisher folks, might likewise be allowed. This (qualified) general ban is taken after, once more, by a broad list of activities which may be allowed in the 'No Development Zone'. Ventures other than little scale undertakings include, inter alia, agriculture, garden projects, activities identifying with the Department of Atomic Energy, the mining of rare minerals, salt production from seawater, and offices for producing power by unconventional energy sources, construction of bridges and roads etc. In addition, projects, such as, the development of assigned empty plots for the development of inns or shoreline resorts for vacationers, offices for receipt and storage of petroleum items and condensed natural gas are allowed in the region between 200 m to 500 m inasmuch as they are inside of the ambit of customary rights also, standard use.

CRZ-IV incorporates the water zone from the Low Tide Line to twelve nautical miles on the offshore side. It additionally incorporates the water zone of the tidal impacted water body from the mouth of the water body where it meets the ocean, together to the impact of the tide. In CRZ-IV regions, activities condemning on the ocean and tidal impacted water bodies, no untreated sewage, effluents, counterbalance water, ship washes, and in addition strong waste from 'all activities' shall be let off or dumped.

Coastal towns and urban areas are obliged to plan sewage treatment plants and actualize them inside a period of one year. Conventional fishing privileges of local communities should not be confined. As officially demonstrated over, the Notification acquaints other extra zones. In Accordance with Section 7, section V,

these territories include: an) any CRZ zone inside city municipal limits of Greater Mumbai; b) the CRZ zones of Kerala including the backwaters and backwater islands; and c) the CRZ regions of Goa, and 'Discriminatingly Vulnerable Coastal Areas' (CVCA, for example, Sunderbans district of West Bengal and other biologically sensitive areas recognized as under Environment (Protection) Act, 1986. The Notification additionally determines the exercises that are reasonable inside of these zones, for instance, street development, strong waste transfers, slum recovery plans, and redevelopment of dilapidated buildings.

## 2.24 Conditions for Clearance and Post Clearance Monitoring

In contrast to the 1991 CRZ Notification, the 2011 Notification sets up a particular method for getting clearance for the different permitted development activities in coastal areas.<sup>96</sup> The Notification indicates that a concerned state or the concern Union Territory's Coastal Zone Management Authorities (CZMA) are responsible for surveying the proposed ventures in their separate coastal zones. For those exercises subject to a clearance obligation, the Notification requires the defenders to submit, inter alia, the accompanying records:

- Detailed data with respect to the physical area, nature, and ecological effect of the activity.
- Comprehensive Environmental Impact Assessment (EIA).
- Disaster and danger appraisal and also an administration arrangement.
- CRZ map that shows all CRZ-I, II, III and IV and other informed naturally touchy zones.
- 'No Objection Certificates' from the concerned State Pollution Control Board.

The concerned authority is obliged to inspect the records as per the sanctioned CZMP and the CRZ Notification<sup>98</sup> and afterward make suggestions to the State Government or the MoEF to continue for the further consideration of the proposed undertaking. The clearance concurred to the projects is substantial for five years.<sup>9</sup> A post clearance system that obliges developers to submit half yearly compliance reports has additionally been established. All such consistence reports put together by the project proponent might be made open. Besides, keeping in mind the end goal to keep up straightforwardness in the working of the CZMA, it might be the obligation of the CZMA to make a dedicated website and post the minutes of the meeting, choices, clearance letters, infringement (and authority reactions), court matters, and the affirmed CZMP of the separate State Government or Union territory.

## 2.25 Preparation of Coastal Zone Management Plans

The Coastal Regulation Zone Notification envisions preparation of Coastal Zone Management Plans (CZMP) by all the coastal states. These provisions manage the regulation of the development of those activities recorded in the CRZ Notification. State Governments and Union Territories are obliged to get ready CZMPs for their distinct coastal zones. Section 5 of the CRZ Notification, 2011 gives that the CZMPs may be prepared with the assistance of reputed and experienced exploratory institution(s) or offices, and in counsel with the concerned stakeholders.<sup>101</sup> Each CZMP might be submitted to the concerned CZMA for appraisal.<sup>102</sup> Then the CZMA of the State Government or Union Territory might present the draft CZMP to the MoEF alongside its suggestions and incorporate proposals and complaints from partners on the CZMP inside of a time of six months.<sup>103</sup> The MoEF shall there after consider and sanction the CZMP. All developmental activities recorded in the Notification should be managed inside of the system of such sanction CZMPs. The CRZ Notification additionally incorporates rules for the arrangement of CZMPs in Annexure I.

## 2.25 Review of CZMP of the state of Karnataka

All the coastal states have prepared the Coastal Zone Management Plan (CZMP) maps and Were all examined and approved by the Ministry of Environment and Forest and this notification is now in force. The Supreme Court has asked each coastal state to submit CZMPs by June 1996 despite the fact that the report seems to be a guarded document. The confidentiality nature of the report still exists even after the Ministry approved the report.

## Institutional structure governing the implementation of the CRZ-

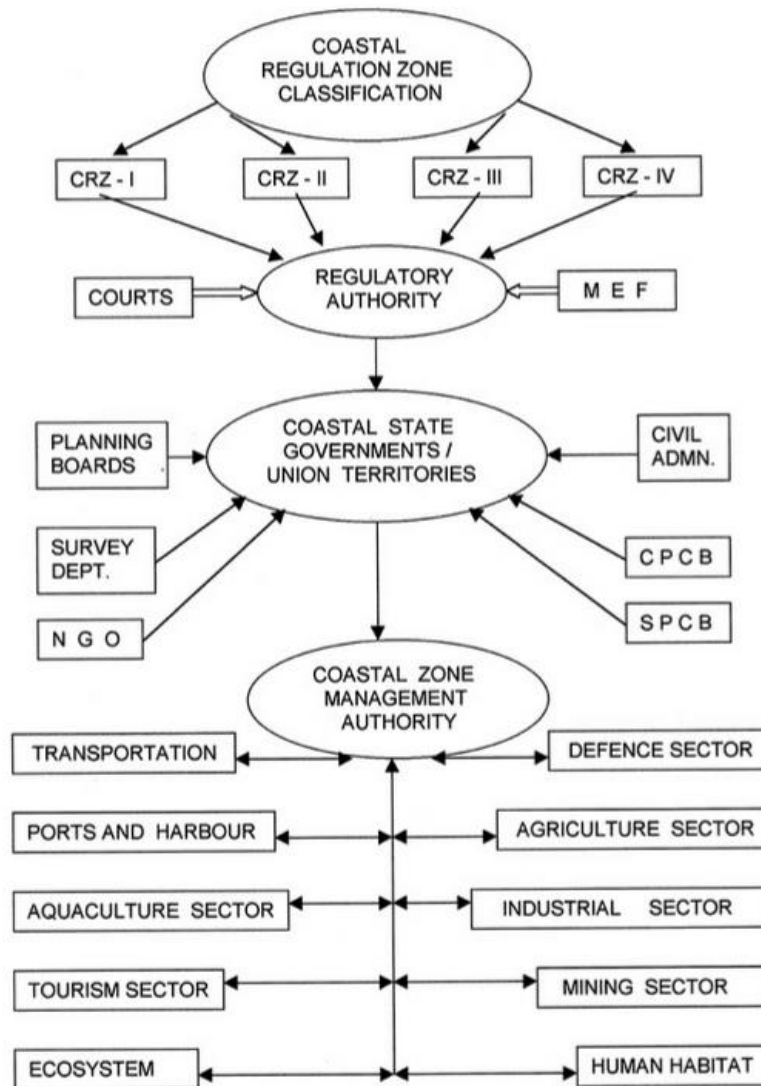


Fig 1: Flow chart of the CRZA institution structure, Source: Author

The above figure clearly states the institutional structure broadly devised under the notification of the CRZ rules, each coastal state, in this case the state of Karnataka is responsible for setting up of the coastal zone management authority under which its required to prepare a detailed coastal zone management plan(CZMP) with the participation of the various state and central level bodies such as city and town planning boards, survey department, state pollution control board, central pollution control board, civil administration and

other concerned NGO's. Thus the action plan prepared will have the authority over regulating and managing following major activities that is happening along the coastal regions of the Karnataka, such as Tourism, transportation, ports and harbour activities, agriculture, aquaculture, industries, defence, mining, preservation of the ecosystem etc.

In the following chapter we will be studying about the issues concerning CRZ in the coastal district of Karnataka, India. The state of Karnataka over the past decades have shown tremendous growth in the industrial and tourism sectors, as the state has the beautiful seafronts, mountains, and well connected transportation networks such as roads, railways, ports and airports etc. has projected itself as the hot bed for attracting new investments, as the results of which new businesses and industries are increasingly coming into the state, and even the state government is facilitating the single window clearance system, to attract more investments to the state, as a result of these developments it has been reported that many environmental rules have been violated in facilitating these businesses, this premise sets us an interesting platform for us to study and understand the policy lapses(if any) at the various levels. So we will be selecting up an infrastructural project in the coastal districts of Karnataka and we will be analysing the project for its environmental compliances specially CRZ rules.

## CHAPTER 3 - Research methodology

### 3.1 Aim, Objectives & Methodology of project

#### **Aim-**

- Aim of this case study is to study the Mangalore corniche ring road project's compliance with the environmental standards especially with that of coastal regulation zone notification rules notified by the MoEF and the local action plan prepared by the Karnataka coastal regulation management authority.

#### **Research question-**

- Does the "CRZ notification" policy achieves the purpose of bringing environmental sustainability?

#### **Objectives-**

- To study the environmental policy effectiveness of the CRZ notification on the proposed mangala corniche ring road project.
- Identifying the issues that exists at the state level in amending the CRZ notifications.

#### **Hypothesis-**

- The projects implemented under the guidelines of CRZ notification does not helps in achieving environmental sustainability because of the policy lapses that exists in the way in which it's implemented at the state level.

#### **Stake holders-**

- People of Mangalore (NGO), MUDA, KSIIDC-IL, IDD, Karnataka Coastal regulation authority, ministry of environment and forest, private investors.

# RESEARCH METHODOLOGY

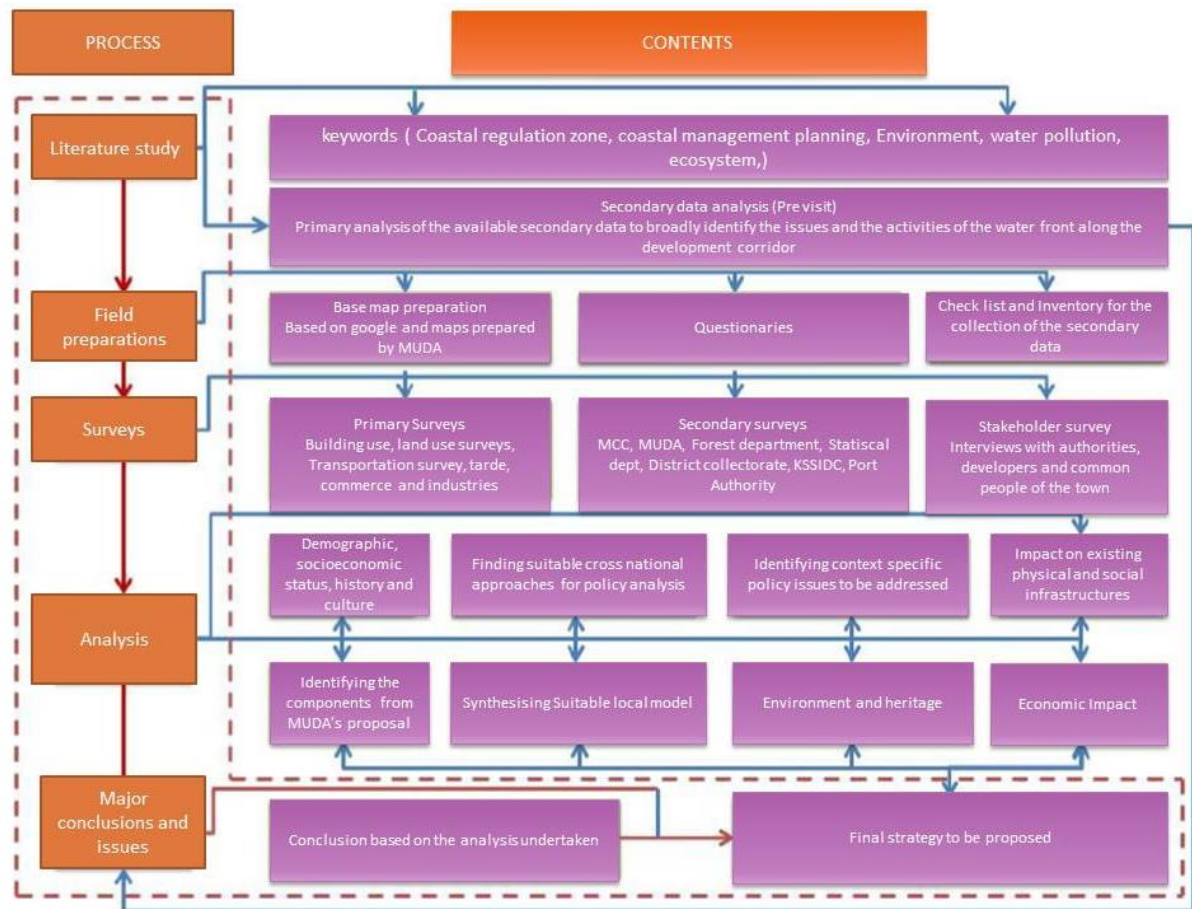


Fig 2: Flow chart explaining research methodology, Source: Author

## 3.2 Research methodology

My research process started with the searching of the relevant literature studies, with the keyword searches like coastal regulation zone, coastal management planning, environment, ecological protection, coastal ecosystem, environmental acts, coastal regulation zone management etc. These initial information's gave me a brief idea about the subject under consideration and provided with the basic knowledge required for me to proceed with the field work. This literature study helped me to find a suitable case study i.e "Mangala corniche ring road project" located in the coastal state of Karnataka.

After identifying the suitable case for the study, on field survey became mandatory for analysing and studying the existing scenarios and to identify the violations (if any) along the proposed project corridor. Before initiating the field survey, base map were prepared based on the google maps and the maps provided by the MUDA (Mangalore urban development Authority), detailed questionnaires' where prepared to interview the

local people and authorities and other concerned stake holders associated with the projects, and a detailed check list and inventories were prepared for the collection of the on filed data and other secondary data's.

The process of filed survey can be broadly divided into three categories, i.e primary survey, which included the study of the existing building use, land use survey, transportation survey, trade commerce and industrial activities in the proposed project corridor. The secondary survey involved the interviewing the concerned authorities from MCC, MUDA, Forest department, statistical department, port authority etc., the third part of the survey again had interviews with the stake holders to understand their side of the story, various stake holders like NGO's, common people who are associated with the projects affected area were contacted.

The information's thus collected acted as the strong base for me to construct my analysis on it, the analysis involved studying of the demographic, socio economic, cultural and historical standpoint of the proposed project corridor, even though the study involved all the above attributes the detailed considerations were given for the compliance of the coastal regulation zone rules and possible issues in following these regulations put forth by the state. Based on these analysis we are able to come up with the conclusion, and we are also able to identify where the actual problem lies with the project. In the final chapter of this report possible suggestions have been given to overcome this scenario.

### 3.3 Study Area Delineation- Mangalore, Karnataka, India

The government of Karnataka has assigned IDD infrastructure development department that aids in augmenting infrastructure over the Karnataka state. The IDD project advisors along with KSIIDC-IL and FS project Development Company proposed various infrastructure to be incorporated in the state utilising the Government funds. The IDD works on Public Private Partnership basis PPP. The PPP identifies the location and location based issues. It addresses the financial needs and scope of development. It ensures if a project needs viability gap funding VGF or support from state or central. IDD also aims at conducting a pre-feasibility studies of the development projects at various locations of the state with the scope of improvement on PPP basis and to ensure if the projects need VGF or state / central based support. IDD has employed no cost basis under which the project success fees can be charged or recovered by the developer. For projects that require VGF ministry guidelines are followed.

### 3.4 Overview

Mangalore the coastal city of Karnataka banked by the rivers Gurupur and Nethravathi on three sides. The

scenic riverfront of the city is marked by the peninsula of Tannir bavi where the rivers meet before merging into the Arabian Sea. The riverfront has enormous scope adding to the revenue, making it a recreational spot and utilising the river for various purposes which is not utilised due to the inaccessibility of some spots along the riverfront. Mangalore is known for its business, entrepreneurship, industries and administrations amplifying the scope of development. Mangalore contains the well-developed transportation hub .3 national highways connecting the city to the rest of the country NH 17 having North-South connectivity. NH 48 runs eastward from Mangalore to Bangalore. NH 13 runs north east towards Sholapur. The transport centres are responsible for vehicular traffic causing congestion on the city roads and national highway stretches bringing in the necessity to strengthen the city road network by additional linkages to trigger the riverfront development

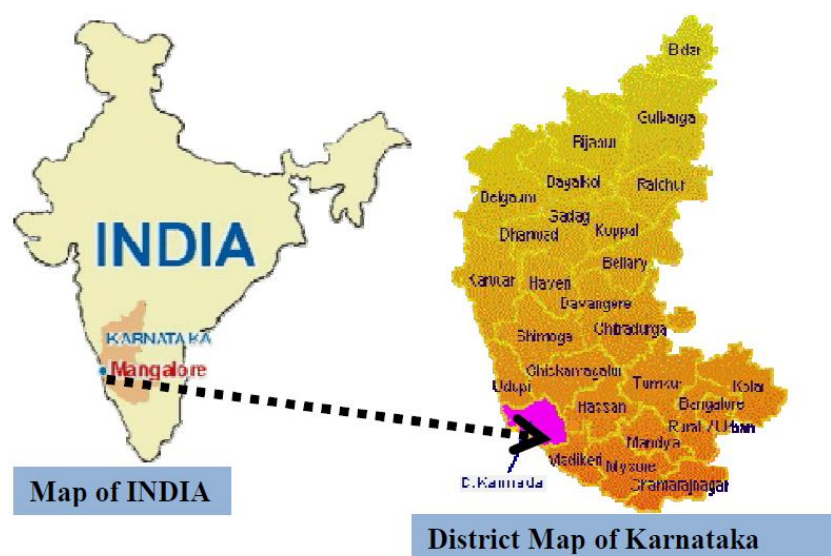


Fig 3: Image showing Indian map and the state of karnataka, Source: Maps of india website

### 3.5 Aims of the project

Seamless ring road provision around the city connecting the important locations Channelizing the North-South and South-North traffic Identifying the riverfront potential propagating sustainable development Socio economic growth of the state by identifying the recreational potential.

### 3.6 Location

Located between Mumbai and Cape Comorin, The Mangalore district covers about 4866sq kms marked by two distinctive regions of The coastal region(Mangalore taluka coastline of 60km) and the Malnad region

comprising puttur, Sullia, Belthagady and bantwal taluk. Mangalore 12°-52'N latitude and 74°-49'E longitude marked by the Arabian Sea on the costal corridor connecting Kerala in South with Goa and Mumbai in North. Mangalore district covers an area of 30,600 hectares out of which 12,877 hectares comes under city limits.



Fig 4: Image showing state of karnataka with its major networks, Source: Maps of india website



Fig 5: Image showing state of karnataka with its major networks, Source: KIIDC report

Mangalore has all four modes of transport i.e. sea port, Road, Rail, Air and abroad export routes.

It has three national highways.

NH-17 connecting panvel and kanyakumari

NH-48 connecting mangalore and bangalore

NH-13 connecting mangalore and Sholapur.

Domestic Airport at Bajpe located 15 kms from mangalore connects Mumbai and bangalore. Konkan and southern railway network connecting mangalore to all the major cities. Major weather port of Karnataka is located at mangalore. The new mangalore port trust (NMPT) comprising cargo and tankers are used for goods transportation. Interior parts of the talukas and districts connected through government and private bus networks.

## Mangalore Urban growth

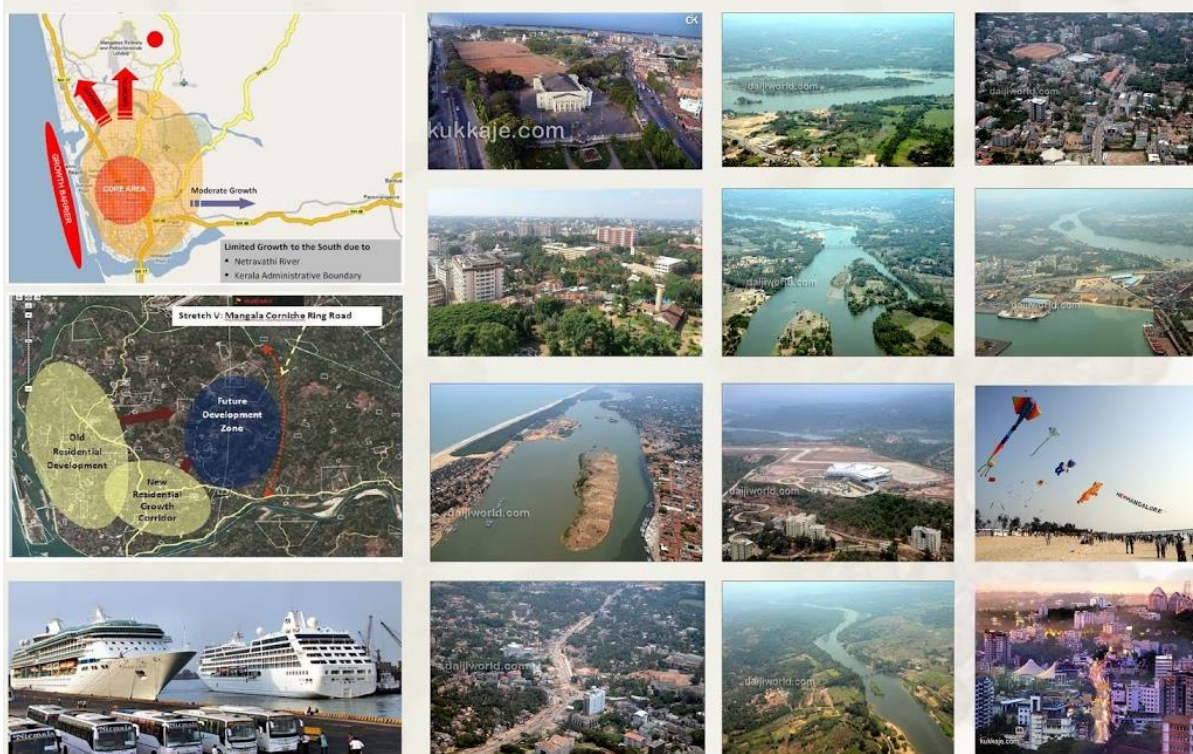


Fig 6: Image showing the trend of urban growth along the riverfront of the gurupur and nethravathi river, Scource: kukkaje.com, daijiworld.com the sourced images were reworked by the author.

### 3.7 GROWTH PATTERN

The growth pattern of the city is predominantly found towards the North and eastern sides along the airport and NH-17(towards Suratkal and Udupi).while meagre growth

is noted on the west (along the sea face) and on the south (Kerala's administrative boundary).The central part of the city is observed to be densely populated creating congestions that is addressed by the Mangala corniche project ensuring smooth traffic flow within the city. It also promotes the development of scarcely developed areas thus expanding the congested city. The ring road propagates residential and commercial region development adding to the industrial development in North and IT development in the south. Land use pattern of Mangalore comprises of 37.5% residential, 16% of transport and communication infrastructure and 15% of agricultural lands.

### 3.8 Economy

Mangalore's economy is distinguished by agriculture and processing, port related activities, animal husbandry, food based cottage industries, sericulture, trade and commerce. where trade and commerce takes place at a higher level. Mangalore is also known for its banking and financial hub for the country where most of the Middle class population of mangalore are employed under this sector. Mangalore has the base of five nationalised banks namely corporation bank, Karnataka bank ,Canara bank, vijaya bank and syndicate bank.

### 3.9 COMPONENTS OF MANGALA CORNICHE

Four lane 100feet wide road over 35 kms length

35metres ring road from maravoor bridge to kannur.

Riverfront development of the 12km stretch.

Riverfront development include provision of walkways, parks and Gardens, development of government lands.

The ring road development is proposed as five stretches.

Stretch1: The 12 km stretch from ullal bridge to kuloor bridge.

Stretch2: marked by gurupur river, from kuloor bridge to maravoor bridge.

Stretch3: marked by nethravathi river, from ullam bridge to kannoor

Stretch4:marked by gurupur river, From maravoor to gurupur bridge

Stretch5: bridge connecting gurupur and kannoor



Fig 7: The image show the different phases of the mangalore corniche project Source: Tulunadu news website.

The 12 km stretch can be divided into two sections namely section a and section b, the section A starting from maravoor bridge to sultan battery and section b from sultan battery to ullal bridge. The road of section A is defined by agricultural lands, few mangroves, and coconut plantations with a kutch road along the water front linking ullal bridge to the backwaters before sultan's battery. The roads on the section A is noted with lesser traffic. The section B starting from sultan's battery passes through bunder. The sultan's battery is amidst a developed fishing harbour and is edged with high density residential settlement until the old Mangalore port and industries stretching till Ullal Bridge

### 3.10 Development options of stretch1-



Fig 8: The image shows the google sat-image of the stretch-1/phase 1 of the mangalore corniche project which falls under the CRZ-2 , source: KIIDC report.

The river-facing side of the stretch can involve activities promoting the water front potential where the land typologies and their usage patterns are identified. The areas between Kuloor Bridge to sultan battery where physical development is sparse can be employed for activities like motor boat rides, river cruises, rafting etc.

The island on Gurupur River can be embellished as a tourist spot and ferry boats can be linked to the islands from sultan battery. The older parts of the city marked by high density residential and commercial settlement makes the city congested and with industrial setups along the river side. The stretch can be extended into a beautiful marine drive. Promenades, gardens, play areas and open spaces can edge the congested portions. Neighbourhood can be connected to the waterfront by streets exclusively used for pedestrian movement.

### 3.11 Land possession-

For the waterfront development locations where the availability of government owned lands are predominant can be developed into boating jetties and other activities

involving water can be planned so that displacement of people can be avoided. These activities can be planned in section A while activities with minimum land acquisition can be used for walkways, promenade etc, along section B.

### 3.12 Benefits of ring road corridor development

Unperturbed commuting link for the city and highway traffic the bypass route lessens the commercial and intercity traffic by depressurising the existing the road network. Bypass road can be used by vehicles from NMPT, PCPIR, MSEZ and other industrial areas moving towards NH13 in the north and NH48 in the east there by avoiding the vehicular traffic of NH17 passing from kodaikal and bendoor intersections. Heavy traffic is noted at NH13 due to goods commuting from Kuloor Bridge that travels southwards towards 6.5km and northwards 9.3km before the Gurupur Bridge. The ring road aids in decreasing the effective time taken to travel due to its minimal travel distance of 12 km thus saving the cost for the journey. The ring road acts as an effective route for traffic from and towards airport that includes northern traffic towards udupi on NH17 and also the traffic towards NH13 and NH48 is considerably reduced.

The core of the city is marked by high density settlement on the west and traffic from sultan battery, Bandar and old Mangalore port is directed through the stretch 1 ring road thus, reducing the traffic in core areas of the city. The Greenfield proposal of the ring road may include parking spaces, bus and truck terminus, loading and unloading spaces, refilling and service stations which was nonviable in the existing roads

### 3.13 Visual survey of the stretch-



Fig 9: Aerial view of the stretch-1 of the mangalore corniche project, Source: Daijiworld.com, the sourced image were reworked by the author.



Fig 10: view of the stretch-1 of the mangalore corniche project, Source: Author (Field study)

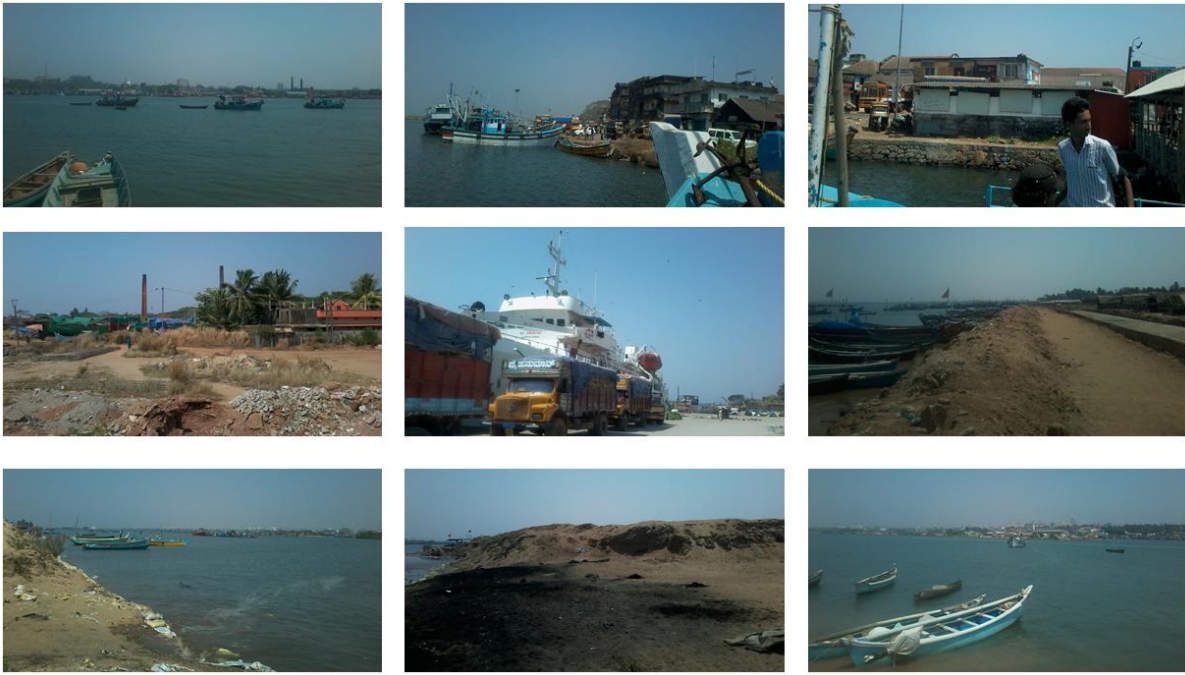


Fig 11: view of the stretch-1 of the mangalore corniche project, Source: Author (Field study)

### 3.14 Proposed projects that could disturb the estuary ecosystem



Fig 12: The image shows the proposed pedestrian bridge across the gurupur river near sultan battery, source: skyscrapercity .com



Fig 13: The image shows the proposed water front park near gurupur river and nethravathi near eastuary  
source: skyscrapercity .com

### 3.15 GIS Mapping of Existing land use map as a tool for making comparative study

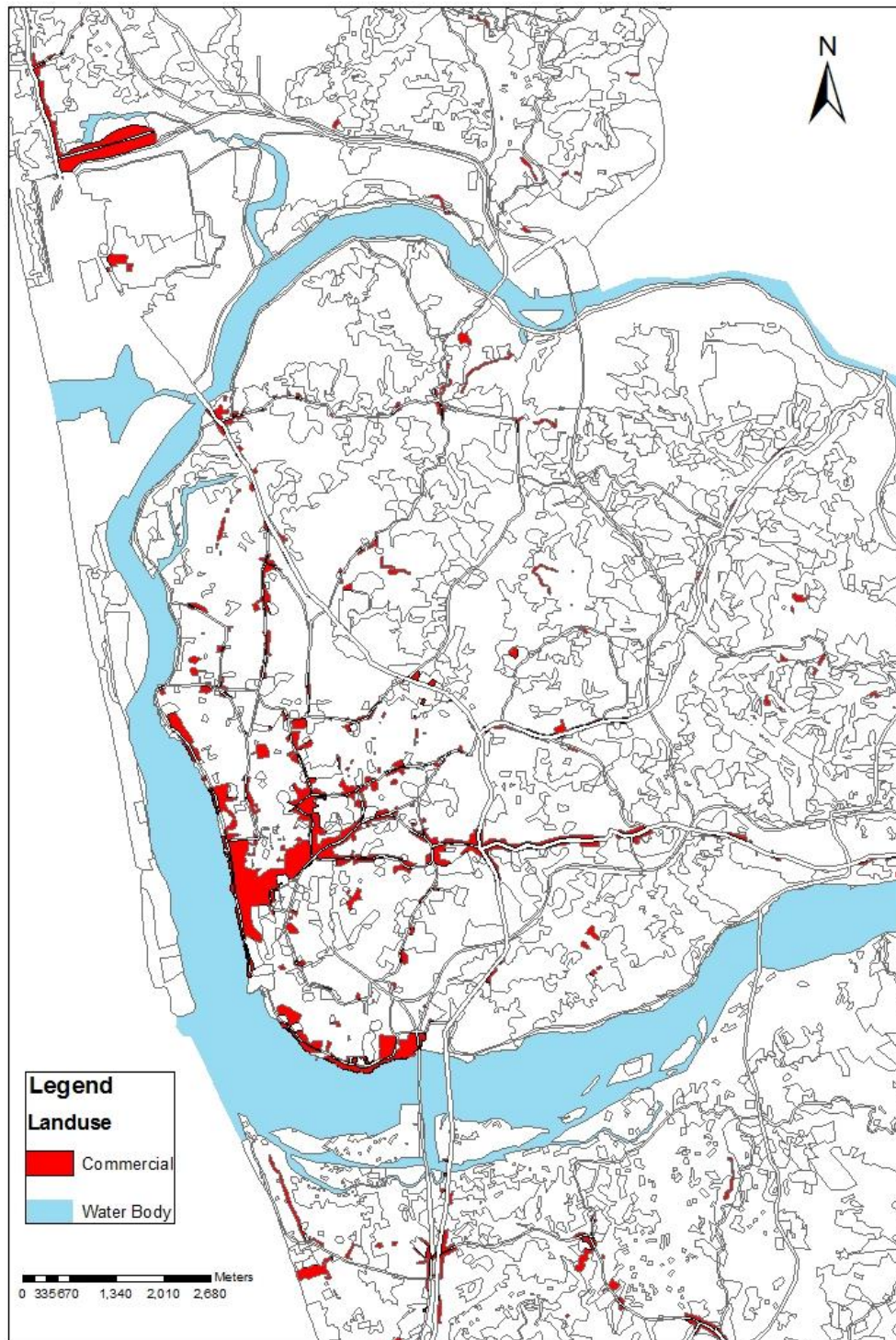


Fig 14: The image shows the documentation of the land use mainly along the stretch-1 of the magala cornice project, source: Author

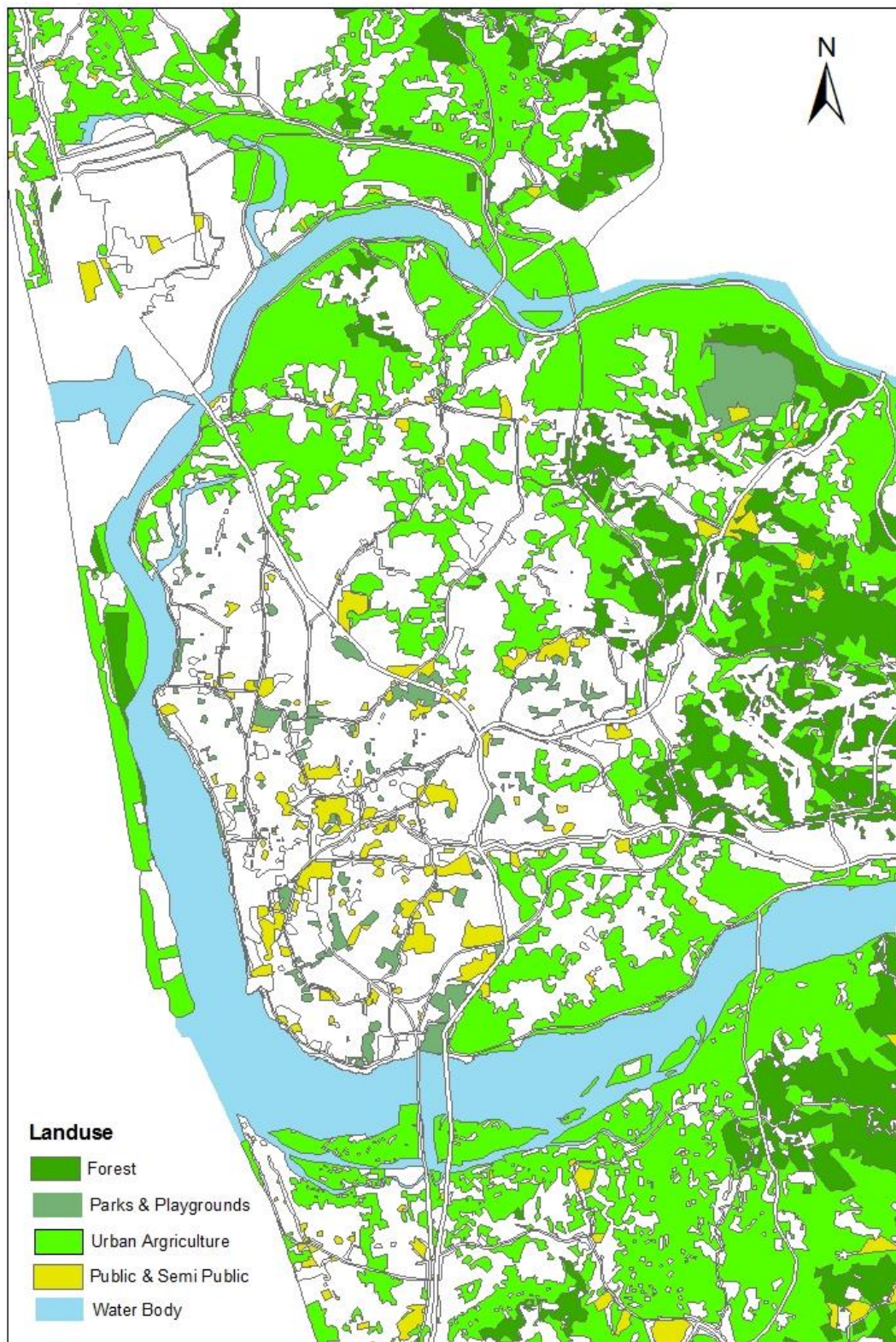


Fig 15: The image shows the documentation of the land use mainly along the stretch-1 of the magala cornice project, source: Author

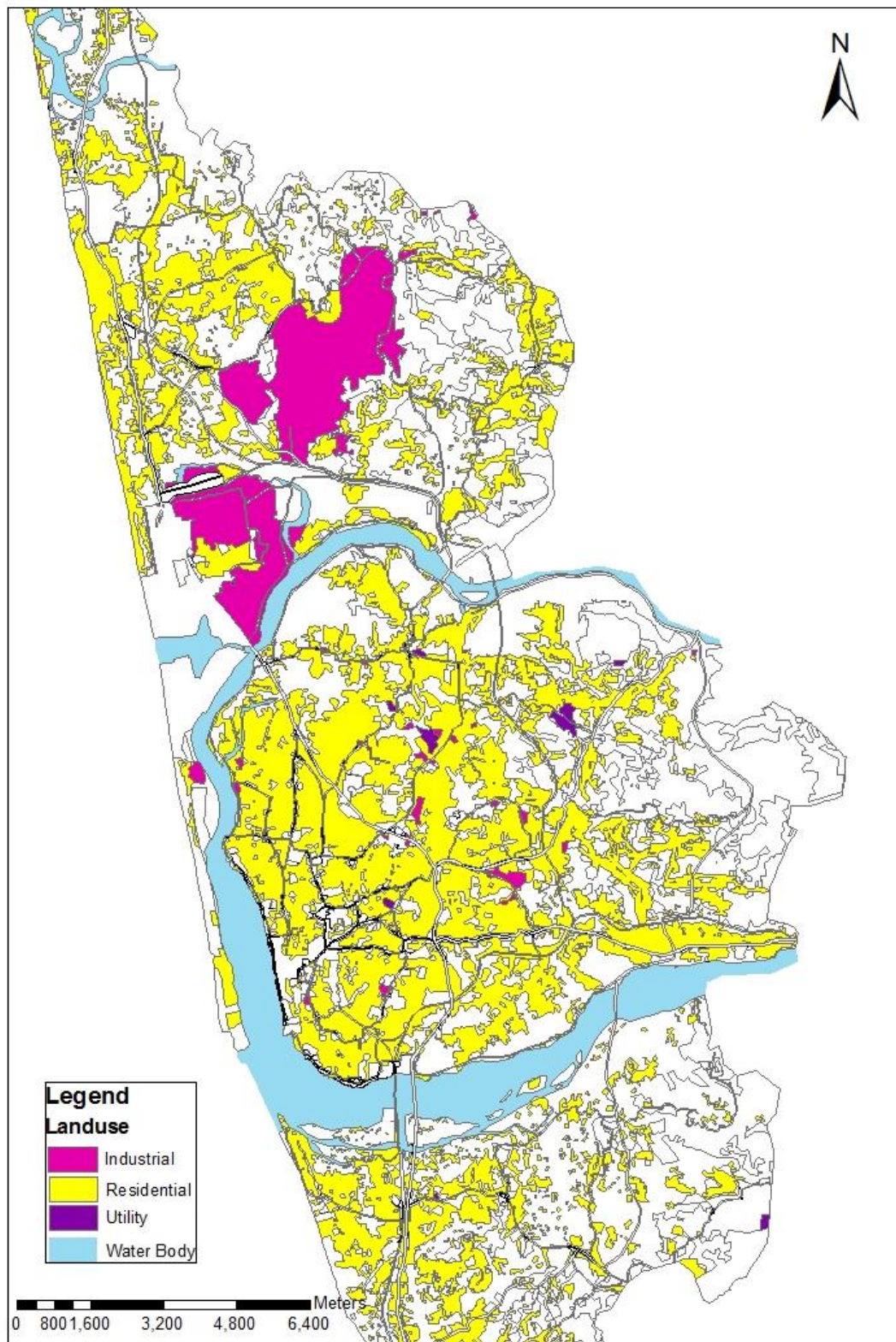
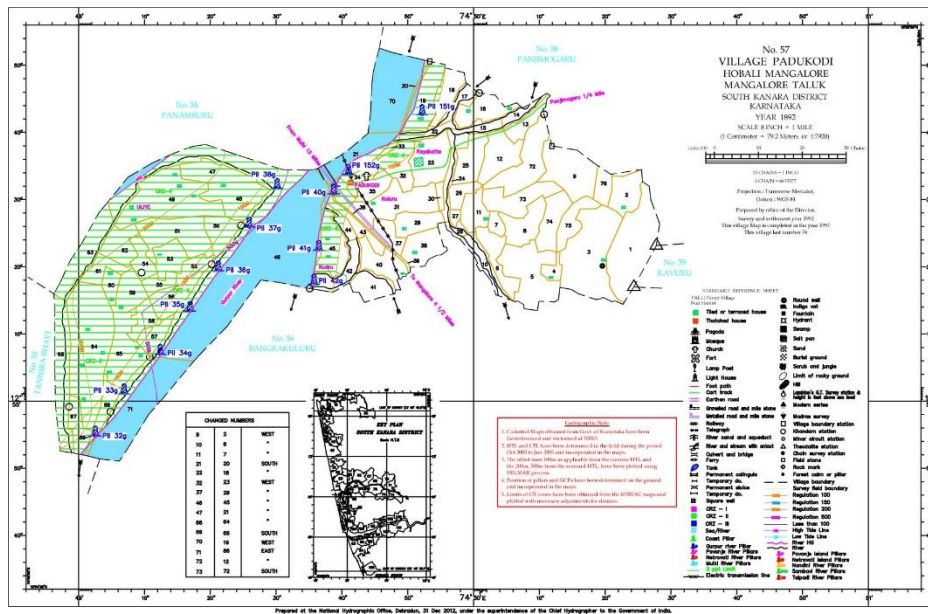


Fig 16: The image shows the documentation of the land use mainly along the stretch-1 of the magala corniche project, source: Author



Fig 17: The image shows the documentation of the land use mainly along the stretch-1 of the magala cornice project, source: Author

### 3.16 Coastal regulation Maps of the stretch-1 of the Mangala cornice project



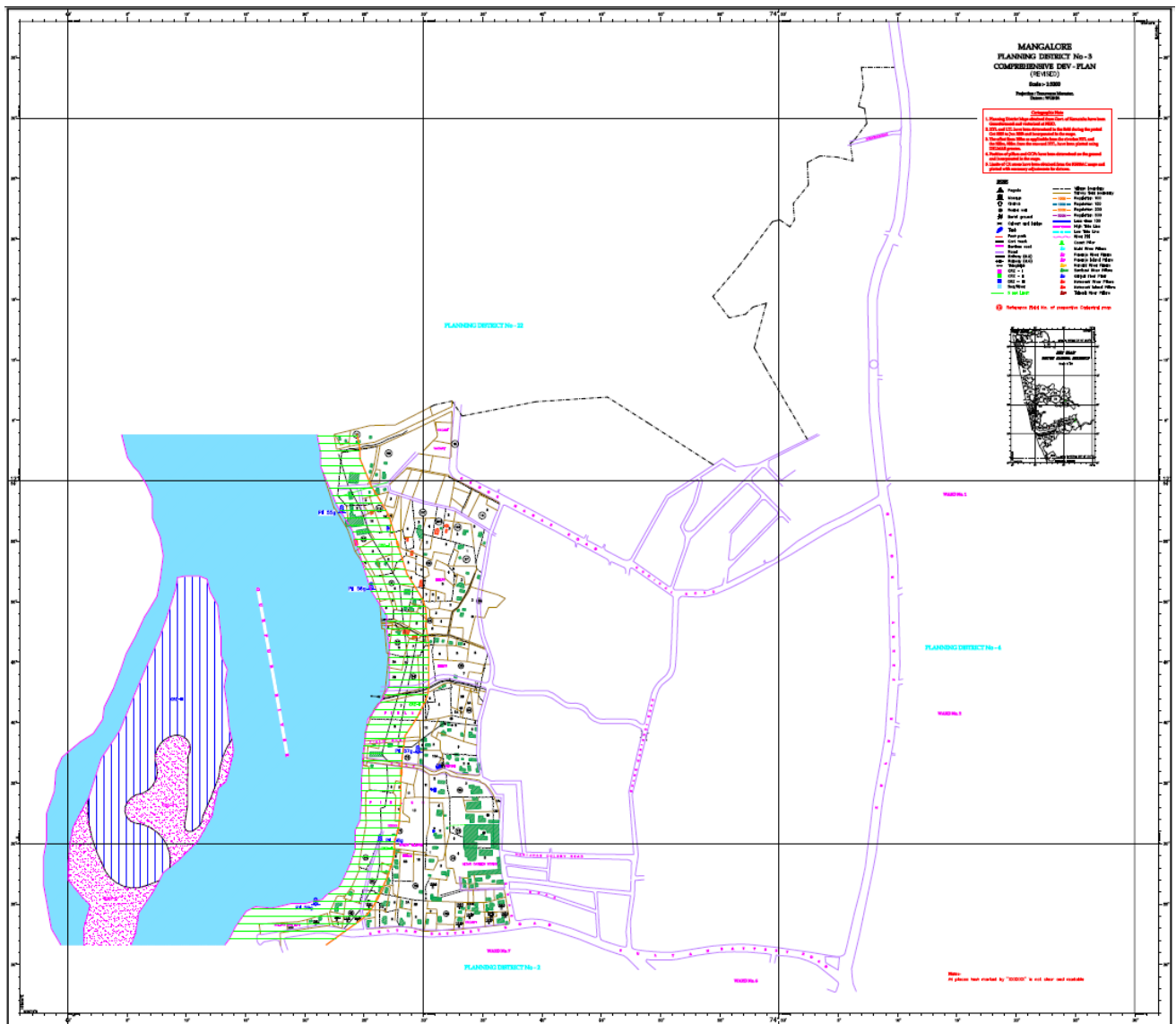


Fig 20: The image shows the documentation CRZMP maps of stretch-1, of the magala corniche project, source: KCZMA(Karnataka coastal regulation zone management authority) and MUDA (Mangalore urban development authority)

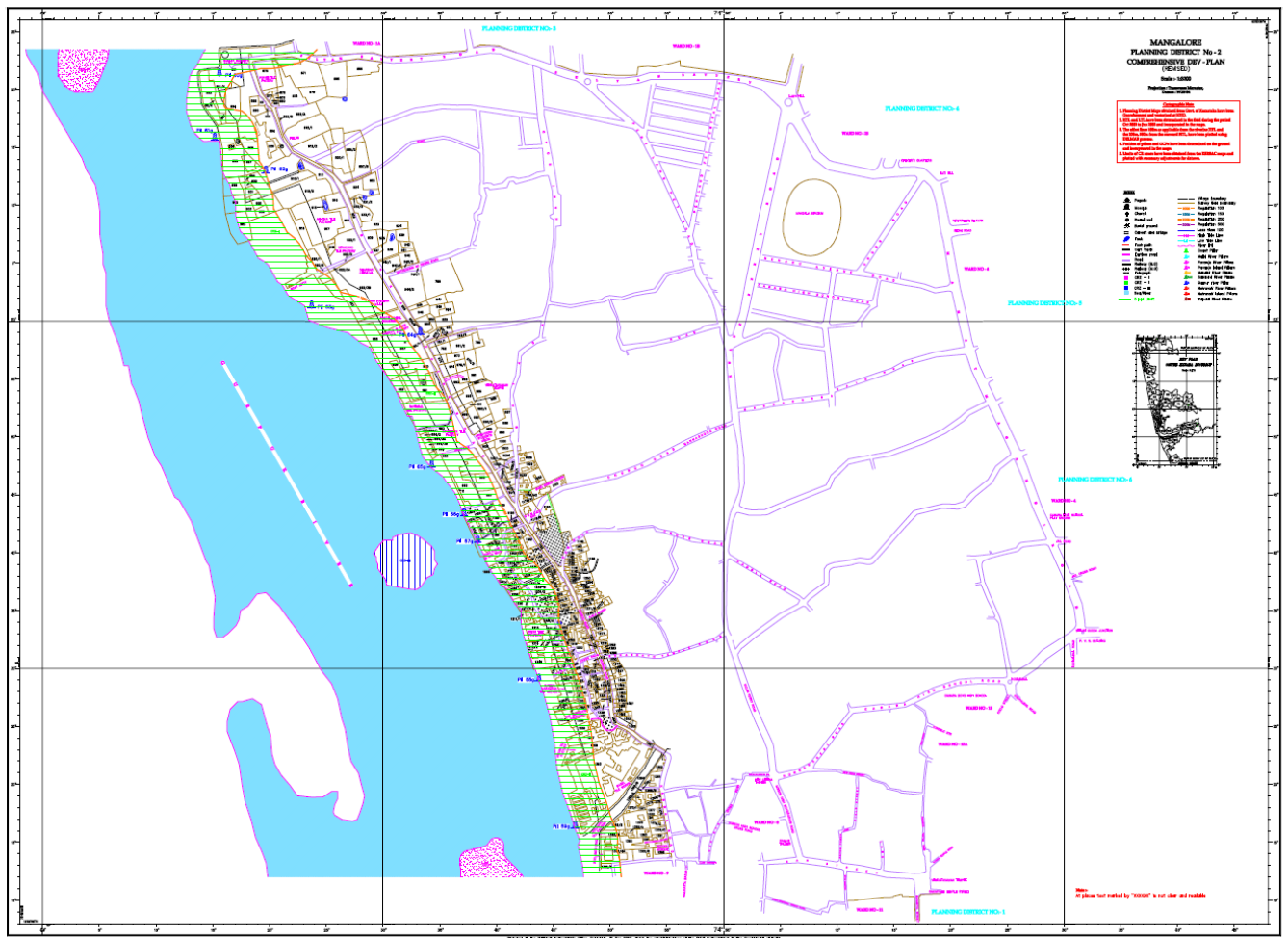


Fig 21: The image shows the documentation CRZMP mapsof stretch-1, of the magala cornice project, source: KCZMA(Karnataka coastal regulation zone management authority) and MUDA (Mangalore urban development authority)

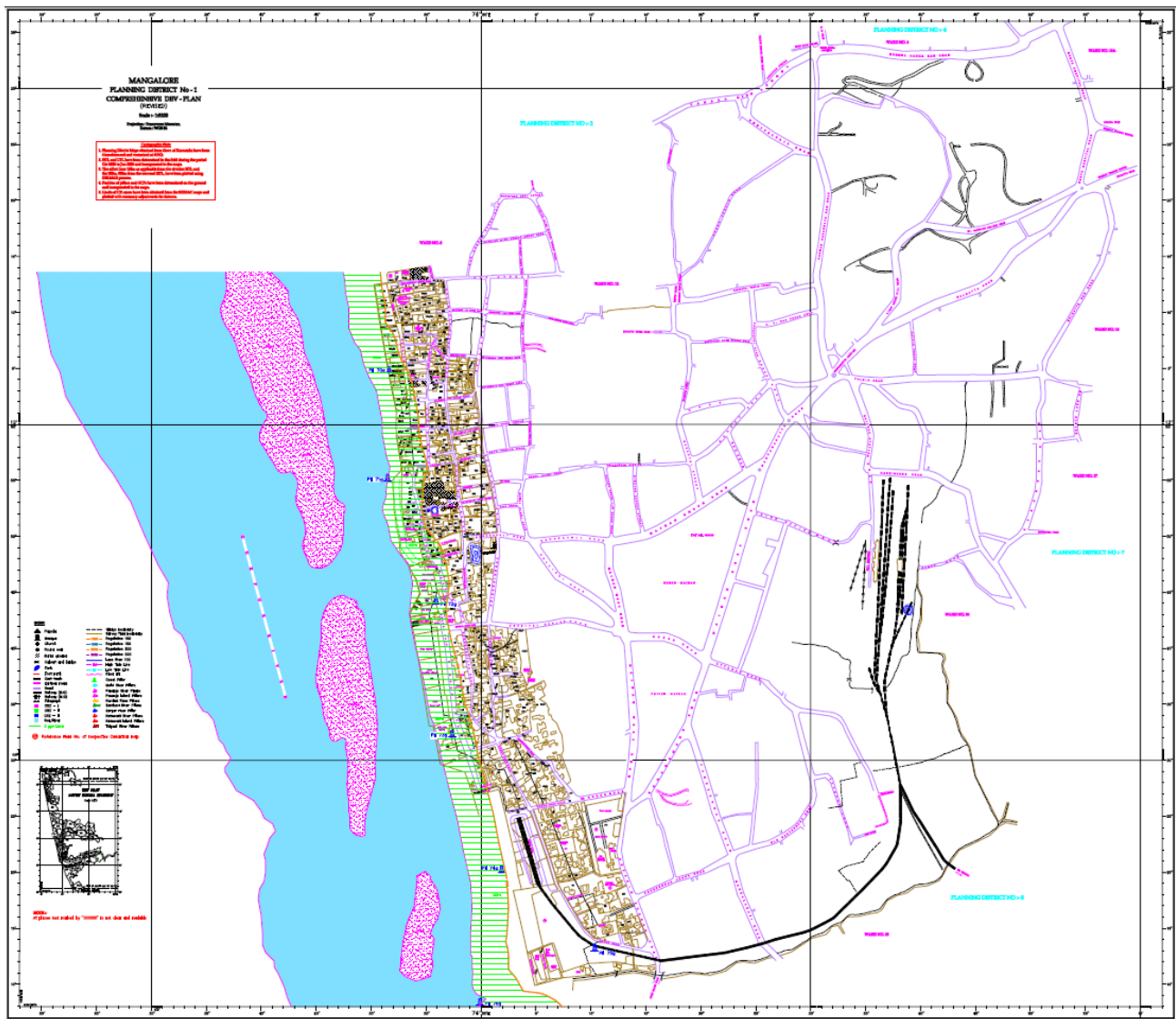


Fig 22: The image shows the documentation CRZMP mapsof stretch-1, of the magala corniche project, source: KCZMA(Karnataka coastal regulation zone management authority) and MUDA (Mangalore urban development authority)

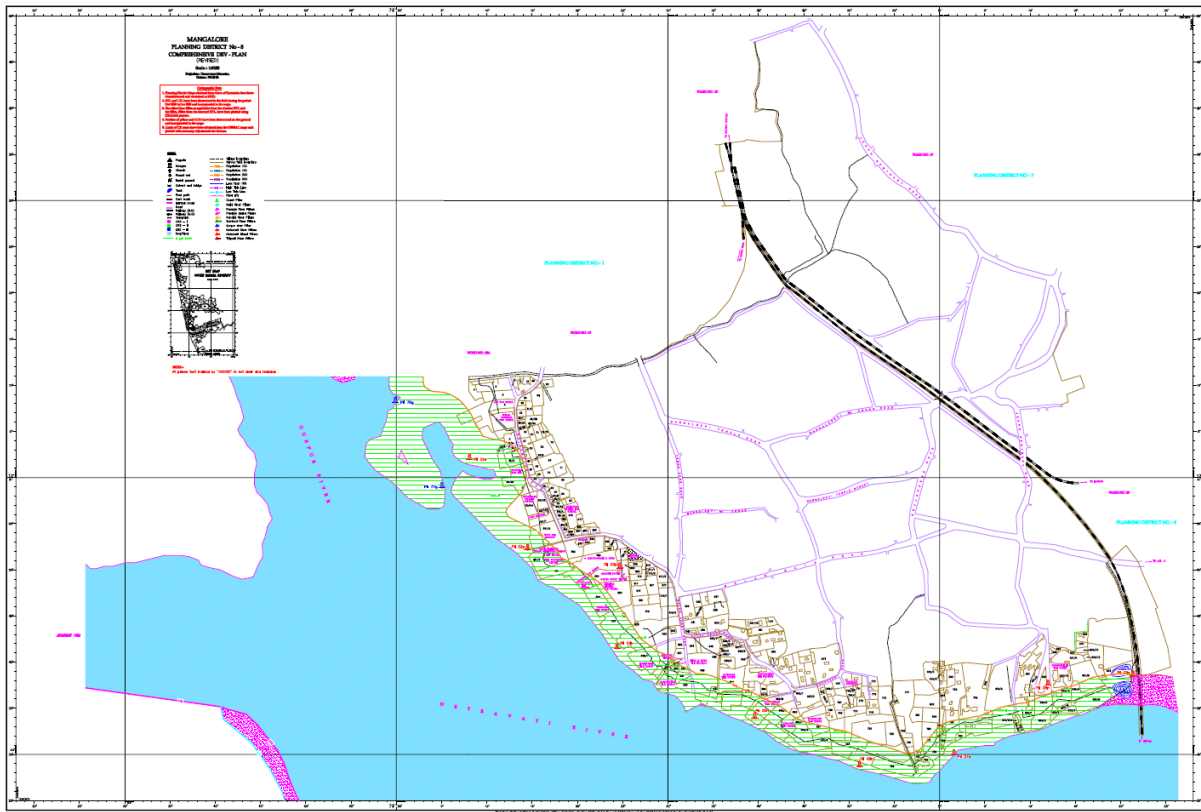


Fig 23: The image shows the documentation CRZMP mapsof stretch-1, of the magala corniche project, source: KCZMA(Karnataka coastal regulation zone management authority) and MUDA (Mangalore urban development authority)

### 3.17 Land use map of Mangalore as per 2001 survey



Fig 24: The image shows the land use plan of mangalore city, surveyed in 2001 source: MUDA (Mangalore urban development authority)

### 3.18 Proposed land use map for 2021

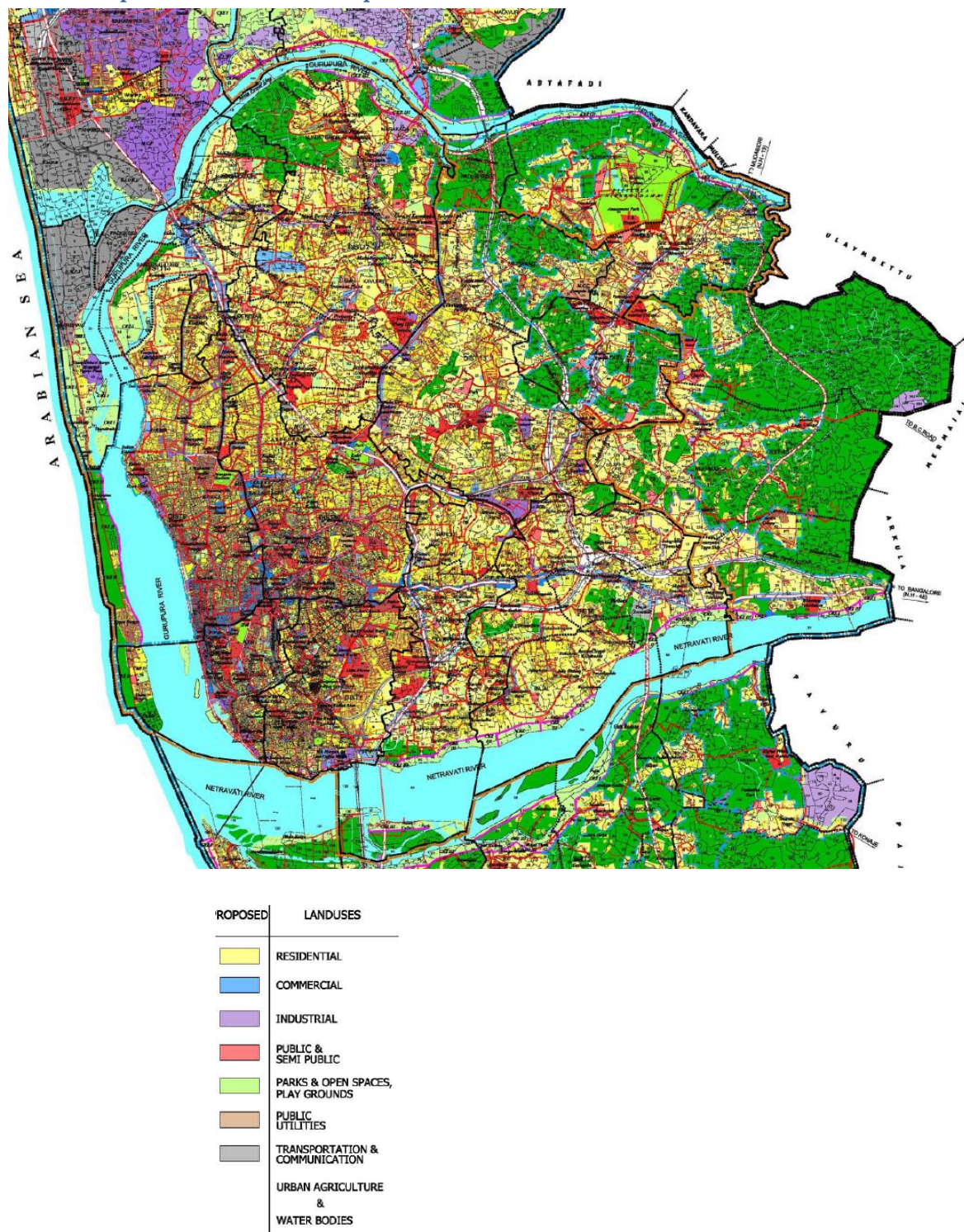


Fig 25: The image shows the proposed land use plan of mangalore city for the year 2021 source: MUDA (Mangalore urban development authority)

## Chapter 4: analysis and assessment

There are many risks associated with the proposal of the but we will be dealing only with the environmental risks associated with the project and the projects compliance with the CRZ rules and the problems in implementing the crz rules and with the other policy related lapses that has enabled this project to hit on floors.

### 4.1 Study of risks-

The objective of this study is to identify the environmental and social hazards involved during the course of the project so as to take precautionary measures for protecting the environment. This study involves preliminary environmental and outlines the scope for future. It is based on various resources, identifying sensitive locations and mitigation measures.

### 4.2 Environmental screening-

- Discussion on environmental and legal impacts due to the project, Policy frame work quoted for the project.
- Scope of Environmental Impact Assessment (EIA) and Comprehensive Environment Management Plan for the project.

### 4.3 Approach-

An area of 10 km is defined on either sides of the road and this corridor is taken as the influential area of the project meeting the requirements of ministry of environment and forest MOEF. Environmental and social hazards along this corridor are noted. This area is divided into direct impact zone, immediate vicinity and indirect impact zone (area within the proposed alignment).

#### 4.4 Environmental (CRZ notification rules) analysis of the project-

The analysis of this project is based on the GIS mapping of the existing land use, future proposed land use obtained from the MUDA, studying of the existing policies associated with the coastal area development and various other environmental laws, surveys, and on filed interviews conducted for the research

- The ring road marked by the riverfront falls under coastal regulation zone-II, according to which only existing roads can be expanded, no new infrastructural development can be brought in. The CRZ restricts additional built up areas and promotes only landscaped areas along the riverfront. On the contrary this new development of the ring road projects aims at making this low density area into high density mixed use development zone with various commercial, housing and office in to the current zone, which will put severe pressure on the existing infrastructures and will pose threat to the river front estuary ecosystem. The proposal of the project in itself a big violation of the CRZ zone –II regulations
- The riverfront of the city acts as a habitat for a wide variety of terrestrial and Aqua marine species. Migrant birds and animals are observed in this area. The ring road development has a major impact on the flora and fauna of the place and also the fishing and agriculture practices.
- Due to the undulations in the topography next to the river front The ring road should adhere strictly to the levels of the contours, according to the CRZ regulations natural contours of the site under development should not be changed, but for the purpose of this road construction at some places land up to 12feet has been reclaimed from the river side, which is alarming violation of the CRZ rule.
- Environmental clearance from the state coastal zone regulation authority is mandatory before even starting the project of such scale, a project of such a sensitive nature, causing huge irreparable damage to the coastal ecosystem has been accepted by the state government on principal is a huge shock to the people and the coastal communities.
- Destruction on the ecosystem is to be completely assessed by comprehensive environment management plan CEMP formulated by the state of Karnataka.

The following section of the report will analyse the positive Developments and the weaknesses of the CRZ Notification that has allowed the above project to go ahead with all the above said issues. This section will also discuss about the positive developments have taken place with the crz regulation and the existing deficits with the policy which needs to be improved so that really addresses the problem of the coastal ecosystem preservation and improvements

## 4.5 Positive Developments

CRZ rules, in seeking after its general objective the Notification progressed beyond anyone's expectations reacting to the real imperfections inherent to its 1991 adaptation. Contrasted with the CRZ Notification, 1991 the present version now incorporates more particular measures for especially unprotected territories, clearance techniques for monitored schemes, targets real land based contaminations, furthermore progressively perceives the privileges of customary waterfront groups.

From a general viewpoint a few parts of the CRZ Notification, 2011 can be esteemed positively. Initially, the Notification's administrative way to deal with prohibit particular activities, and grant others however subject the later to a particular license administration is simple and clear. Supplementing this fundamental methodology with a region specific administration likewise recognizes the special conditions, formative stages, and preservation needs of particular coastal regions. Second, the CRZ Notification, 2011 now conceals territories stretching out to 12 nautical miles into the ocean. This adds to the Notification's degree ranges that are profoundly influenced by and inseparably connected to land based waterfront exercises. Third, the Notification additionally recognizes, at least to some degree, the need to arrange and adjust project clearances to other regulatory choice making bodies and administrative prerequisites.

As depicted over, the clearance system obliges that proposed projects are subjected to, inter alia, thorough EIAs and need to incorporate 'no objection certificates' from the concerned State Pollution Control Board. Fourth, the obligation presented in the post-clearance instrument to make particular project information freely accessible bears the possibility of effective implementation through increasing openness. The Notification additionally incorporates a system that gives structure to strategic planning of the coastal activities. Passage 5 and the rules in Annexure I of the CRZ Notification, 2011 obliges that the Coastal Zone Management Plans are science based, that they target coastal hazards, and that they are taking into account stakeholders involvement, and are investigated and sanction by the MoEF. Coastal Zone Management Plans then frame the fundamental system by which all development activities will be managed. At long last, it should be regarded that the Notification recognizes to some degree the special situations of local coastal communities. Regardless of all these positive directions and improvements, a few components and administrative methodologies of the CRZ Notification should be critically studied and countermeasures should be considered.

## 4.6 Targeting the Lack of Orientation

In general, planning requirements under the CRZ Notification remain fairly open ended and unspecific; the CRZ Notification does not have a reasonable vision of how and to what degree debilitated beachfront ranges should be ensured and which measures are really required [82] Accordingly, it doesn't give a sound and very much organized administrative system

to control and plan developments in India's coastal zones. It especially does not have a general vision of what great ecological status in coastal regions could and ought to be. It does neither set up clear measures of insurance, neither gives plain targets and standards to direct regulatory decision making, nor does it portray particular projects to accomplish or keep up that standard of security. It is contended here that Indian that Indian coastal management and planning should first and foremost aim at identifying a goal to strive for. To guide ecological and especially sectoral policies, the governing bodies need to address what sort of environmental status ought to be accomplished or kept up (reference level).

Such a reference level ought to be in light of the presumption that development and use of coastal regions must be comparable with the carrying capacity of the environment. Likewise, environment necessities should be considered. Several components of an integrated approach to coastal and marine management follow from these premises.[83]

- There should be an investigative and scientific evaluation of the conditions of the coastal and marine environment.
- Sustainable use and exploitation limits that take into account carrying capacity of the ecosystem as well as 'good environmental status' .should be characterized.
- Measures that viably ensure the coastal environment to maintain ecosystems, ensure long term returns by environment administrations.

- Sectoral laws influencing seaside and marine regions should be accustomed to regard measures and purposes stated under environmental enactment.

Executing these steps, legislation ought to incorporate clear and judicially reviewable standards and ideas which adequately direct organizations. Likewise, regulating concepts, for example, 'sustainable exploitation', the 'prudent methodology', and the 'ecosystem community approach'[84] ought to be made effective. To this end, law administering waterfront and nearshore zones must furnish them with some particular components. First and foremost, the legislator ought to furnish the regulating concepts with a legitimate impact, i.e. make them lawfully tying standards. Standards are seen here as those standards that have lawful impact, are focused on a goal, and are open for adjusting against other legitimate principles.[85] By contrast, provisions and policies are not expected to be binding.[86] Laws should then give clear prerequisites to measure the contending goals of achieving sustainability, i.e. economic, environmental and social objectives, as well as clearly explain how the precautionary and ecosystem approaches relate to these economic and social conditions. In that regard, laws must acknowledge that there usually is a limit where the level of pressure (use, exploitation or pollution)) risks the future existence of environments or resources. Accordingly, activities are no longer regarded as sustainable when they exceed the critical point at which ecosystems or resources are threatened by a substantial decline or collapse. Since any meaningful application of the precautionary approach requires the avoidance of critical use and exploitation levels, this reference point should likewise serve as a source of perspective point for the cautionary approach. A safety margin or precautionary buffer that takes into account uncertainties, especially the unpredictable nature of ecosystems, must be factored into the sustainable exploitation rate. With regard to the inclusion of the ecosystem approach, it must be acknowledged that the concept is still far from having a clear content. Nevertheless, the ecosystem approach recognizes the need to consider the impacts of individual activities on the ecosystem in general. To offer substance to the environment approach, governing laws should incorporate clear and judicially reviewable legalised obligations to decrease the overall pressure on coastal and protect habitats and species.

## Chapter 5: Conclusion & way forward

### 5.1 Conclusion

The advancement of the CRZ Notification from 1991 to 2011 fundamentally mirrors the demand for a coordinated approach to manage the increasing use and protection interests and requirements in India's coastal areas. The 2011 rendition of the Notification incorporates numerous essential ideas and methodologies for a decent legislative coastal management practice.

Then again, the administrative methodologies are either not completely evolved or else broadly palliated by wide or unsystematic exemption clauses, In order to balance the use and conservation interests to steer towards sustainably, India must build up a reasonable vision of how its coastal regions should look, and by whom and by which means and measures this vision ought to be accomplished. Moreover, clear and judicially reviewable goals, guidelines, pointers, and projects of measures must be received and adequately actualized. Just where there is a reasonable reference point which is then operationalized by exact and judicially reviewable targets and measures, other (sectoral) strategies may be coordinated to add to an environmentally sound and sustainable coastal management. Hopefully the appropriation of a law by the Parliament sooner rather than later will give us the chance to enhance the CRZ Notification and subsequently help to avoid coastal environmental degradation.

From the above discussion we can safely put that despite being specific policies put in place there is a serious lapse from the individual states in enacting these laws in to action, lethargic behaviour from the state governments and the improper institutional structure with poor hierarchy of power distribution has made this legislation to fail time and again, apart from the above mentioned policy implementation lapses, the policy in itself have been amended many time allowing special developments to happen on the coastal states for the short term economic gains, claiming that the project of such nature are of national importance, these kinds of activities from the government has given a strong impression that both the state and the central government is seeing environmental laws as something that is standing in between the economic development of the country. And it gives us an impression that government has put the environment protection and ecological preservation to the back seat and chasing behind the short term economic gains, as they want to increase the country's GDP and want to put India as this raising global power at the expense of the environment.

### 5.2 Way forward-

- i) We have more than 200 Central and State enactments which manage environmental issues. More laws means more challenges in implementation. There is a need to have a complete and a coordinated law on environmental issues for significant implementation.

- ii) It is insufficient to establish the legislations. An inspirational state of mind from everybody in the public arena is key for compelling and productive implementation of these enactments.
- iii) The authority vested to the Pollution Control Boards are insufficient to counteract contamination. The Boards don't have power to penalise and punish the violators however can launch summons against them in the Courts which at last defeats the reason and object of the Environmental Laws because of long delays in deciding the cases. Consequently, it is imperatively important to give more powers to the Boards.
- iv) The Environment Protection Laws have failed to achieve the expected results. Thusly, with the end goal of proficient and compelling endorsement of these laws, it is important to setup the Environment Courts. In any case we may have such Courts at the State and National levels that may later be reached out to region level on need-based guideline. So as to discourage delayed suit, the provisions ought to be kept to single request.
- v) There is a variety of environment contamination control gauges for the same kind of industries. Be that as it may, under the Environment (Protection) Act, 1986 now the power has been presented upon the Central Government for setting out the measures for the quality of air, water and soil. It is expected that this will guarantee consistency of guidelines all through the nation.
- vi) So as to uphold the environmental laws stringently, simply wrong description and technical flaws should be slighted by the Courts. The imaginative part of judiciary has been noteworthy and praiseworthy. The jurisdiction of the Courts has been extended by process for Public Interest Litigation. The Supreme Court of India has assumed an imperative part in giving directions occasionally to the authorities to make essential strides for enhancing environment.
- vii) The Public Liability Insurance Act, 1991 which accommodates compulsory open obligation protection for establishment and handling hazardous substance to provide minimum relief to the victims, is an appreciated stride in the right direction. Such a protection separated from shielding the interests of casualties of mishap will likewise give cover and empower the enterprise to meet its obligation.
- viii) What we need is social responsiveness from beneath, not laws from the above. No law works out easily unless the communication is wilful. With a specific end goal to instruct individuals about the ecological issues. Further, as coordinated by the Supreme Court of India, Environment

studies should be made an obligatory subject at school and school levels in evaluated framework so that there ought to be general development of awareness about the environment.

- ix) The traditional idea that progression and environment are against one another, is no more adequate, since 'sustainable development' is the answer. The Supreme Court has acknowledged 'sustainable development' as a major part of the laws of the land and has confirmed the 'precautionary principle' and the 'polluter pays standard' are fundamental elements of sustainable development.
  - x) The tapping of common assets must be done with essential consideration and care so that environment may not be influenced in any negative way. A long term planning must be embraced by the Central Government in counsel with the State Governments to ensure and enhance the environment and to keep up the national wealth.
  - xi) Finally, protection of the earth and keeping ecological harmony unaffected is an undertaking which the government as well as every person, association and organization must embrace. It is a social commitment and crucial obligation revered in Article 51 A (g) of the Constitution of India.
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- [4] E.g. Indian Forest Act, 1927; the Factories Act, 1948; the Atomic Energy Act, 1962; insecticide 1968.
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[56] See CRZ Notification, 2011, note 32 above. Under Para 6, the SCZMA's were directed to prepare Coastal Zone Management Plans in order to identify and classify the CRZ areas in the respective States.

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

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

[64] *Id.* Para 4.2, 'Procedure for clearance of permissible activities'.

[65] *Id.* Para 7, 'Classification of CRZ'.

[66] *Id.* Annexure I.

[67] *Id.* Para 3.

81 See Ministry of Environment and Forests note above.

82 See Para 7, 'Classification of CRZ'.

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# Annexure 1

## EQUATIONS Analysis of the CRZ Notification, 1991 as amended upto 25.06.2005

| Section                          | Positive                                                                                                                                                                                                                               | Negative                                                                                                                                                                              | Unclear                                                                                                 |
|----------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------|
| 1. Introduction                  | Imposes restrictions on activities in the coastal zone                                                                                                                                                                                 | Does not include areas on the seaward side of the Low Tide Line (LTL)                                                                                                                 |                                                                                                         |
| 2. Prohibited activities<br>2(i) | Prohibits setting up of new and expansion of existing industries<br>No setting up of:<br>Units for power generation through non-conventional sources<br>Desalination plants<br>Airstrips in A&N and Lakshadweep Islands in CRZ-I areas | Allows "non-polluting industries" like IT, services in CRZ of Special Economic Zones                                                                                                  | What are the criteria for understanding which industries need waterfront and / or foreshore facilities? |
| 2(ii)                            | Units and processes dealing with hazardous waste substances in CRZ-I have been prohibited; in other areas subjected to safety regulations                                                                                              |                                                                                                                                                                                       |                                                                                                         |
| 2(iii)                           | While prohibiting setting up of new and expansion of existing fish processing units including warehousing, excludes hatcheries and natural fish drying                                                                                 |                                                                                                                                                                                       |                                                                                                         |
| 2(iv)                            | Setting up & expansion of waste disposal units have been prohibited                                                                                                                                                                    | (iv.c) Disposal of treated wastes and effluents from tourism establishments located in non-CRZ-I areas is permitted<br>(iv.d) such units are permitted in A&N and Lakshadweep Islands |                                                                                                         |
| 2(v)                             | Untreated wastes and effluents have been prohibited                                                                                                                                                                                    |                                                                                                                                                                                       |                                                                                                         |

| Section                                 | Positive                                                                                                                                        | Negative | Unclear                                                                                                 |
|-----------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------|----------|---------------------------------------------------------------------------------------------------------|
| 2(vi)                                   | Land filling from waste dumping has been prohibited                                                                                             |          |                                                                                                         |
| 2(vii)                                  | Prohibition of wastes, ash from thermal power stations                                                                                          |          |                                                                                                         |
| 2(viii)                                 | Land reclamation for tourism and entertainment activities not permitted                                                                         |          |                                                                                                         |
| 2(ix)                                   | Mining of sand, rocks and substrata materials is prohibited Although allowing sand mining in A&NI, a process to phase it out has been suggested |          |                                                                                                         |
| 2(x)                                    | Prohibits drawal of groundwater within 200m of HTL; allows only manual extraction for drinking, horticulture, agriculture and fisheries         |          |                                                                                                         |
| 2(xi)                                   | Prohibition of construction activities in CRZ- I                                                                                                |          |                                                                                                         |
| 2(xii)                                  | Any construction between HTL and LTL is prohibited                                                                                              |          |                                                                                                         |
| 2(xiii)                                 | Alteration of natural forms is prohibited                                                                                                       |          |                                                                                                         |
| 3. Regulation of permissible activities | Permissible activities are regulated                                                                                                            |          |                                                                                                         |
| 3(1)                                    |                                                                                                                                                 |          | What are the criteria for understanding which industries need waterfront and / or foreshore facilities? |
| 3(2.i)                                  | Construction of various activities have been generally prohibited                                                                               |          | (i.a) validity of clearance is 5 years what is the criteria? Evaluation is required.                    |

| Section     | Positive                                                                                                                 | Negative                                                                                         | Unclear                                                        |
|-------------|--------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------|----------------------------------------------------------------|
| 3(2.ii)     | Provision for Lakshadweep only; scientific study of impacts suggested prior to clearing activities                       |                                                                                                  |                                                                |
| 3(2.iii)    |                                                                                                                          | Foreshore facilities for thermal power plants permitted (iii.a)<br>(iii.c) SEZ projects accepted |                                                                |
| 3(2.iv)     | Regulation of demolition or reconstruction of buildings of architectural, historical, heritage and public use            |                                                                                                  |                                                                |
| 3(2.v)      | Regulation of activities above Rs. 5 crores investment; less than Rs. 5 crores delegated to state / UT level authorities |                                                                                                  |                                                                |
| 3(3.i)      | Preparation of CZMPs suggested                                                                                           |                                                                                                  |                                                                |
| 3(3.ii)     | Delegates responsibility of regulation to state / UT level authorities                                                   |                                                                                                  |                                                                |
| 3(3.iii)    | No violation of the CRZ Notification is allowed even if CZMPs are not approved                                           |                                                                                                  |                                                                |
| 4.          |                                                                                                                          |                                                                                                  | What is the process of monitoring and enforcement is not clear |
| Annexure-I: |                                                                                                                          |                                                                                                  |                                                                |
| 6(1)        |                                                                                                                          |                                                                                                  | Is 500m from HTL enough?                                       |

| Section           | Positive                                                                                                                                                                                                                      | Negative                                                            | Unclear                                                                                                                                         |
|-------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------|
| 6(2)CRZ-II(i)     |                                                                                                                                                                                                                               |                                                                     | When the notification says road becomes the demarcating feature to allow, does it include the norm of not allowing activity within 200m of HTL? |
| 6(2)CRZ-III (i.a) | Construction of dispensaries, schools, public rain shelters, community toilets, bridges, roads and provision of facilities for water supply, drainage, sewerage which are required for the local inhabitants may be permitted |                                                                     |                                                                                                                                                 |
| 6(2)CRZ-III(i.b)  |                                                                                                                                                                                                                               | NDZ reduced to 50m in A&NI for tourism development purposes         |                                                                                                                                                 |
| 6(2)CRZ-III(ii)   |                                                                                                                                                                                                                               | Tourism allowed in vacant plots between 200 & 500m in CRZ-III areas |                                                                                                                                                 |
| 6(2)CRZ-III(iii)  | Dwelling units, public amenities permitted between 200 & 500m in CRZ-III areas                                                                                                                                                |                                                                     |                                                                                                                                                 |
| 6(2)CRZ-III(v)    |                                                                                                                                                                                                                               | SEZs accepted, beach resorts and recreational facilities permitted  |                                                                                                                                                 |
| 6(2)CRZ-IV(i.d)   |                                                                                                                                                                                                                               | NDZ reduced to 50m in A&NI for tourism development purposes         |                                                                                                                                                 |
| Annexure-II       |                                                                                                                                                                                                                               | Limited to CRZ-III; CRZ-II should also have been included           |                                                                                                                                                 |
| 7(1.i)            | Any tourism establishment within 200m of HTL and inter-tidal area has been prohibited                                                                                                                                         |                                                                     |                                                                                                                                                 |
| 7 (1.v)           | Ground water shall not be tapped within 200ms of the HTL                                                                                                                                                                      |                                                                     |                                                                                                                                                 |

| Section    | Positive                                                                                                                                                                                                                                                                | Negative | Unclear |
|------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|---------|
| 7 (1.vi)   | Extraction of sand, levelling or digging of sandy stretches not permitted                                                                                                                                                                                               |          |         |
| 7 (1.viii) | Necessary arrangement for the treatment of the effluents and solid wastes must be made. It must be ensured that the untreated effluents and solid wastes are not discharged into the water or on the beach and no effluent/solid waste shall be discharged on the beach |          |         |
| 7(2)       | Construction of tourism establishments in Ecologically Sensitive Areas not permitted.                                                                                                                                                                                   |          |         |

# Annexure 2

## A CHRONOLOGY of AMENDMENTS & EVENTS RELATED TO THE CRZ NOTIFICATION

*EQUATIONS gratefully acknowledges Ms. Aartbi Sridhar (ATREE) for contributing the chronology of amendments*

| Date of amendment / order / event & legal clauses                                                                                                                          | Details / comments / features                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
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| 31st December 1992                                                                                                                                                         | <ul style="list-style-type: none"> <li>Intense pressure from hotel &amp; tourism lobby on Govt. of India that the restrictions under CRZ severely limited their scope of work.</li> <li>As a consequence, the BB Vohra Committee set up by the Central Government to study the CRZ Notification and its implications and submitted its report with recommendations to Gol on December 31, 1992.</li> <li>S.O 690(E) Corrigendum dated 19th September 1994 rectified that the BB Vohra Committee was set up to look into 'tourism' and hotel facilities in the said zone' (i.e. CRZ)</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| 11th November 1993<br>S.O. 859 (E)                                                                                                                                         | <ul style="list-style-type: none"> <li>Based on pressure from the tourism lobby, amendments were proposed to CRZ Notification</li> <li>A draft notification was issued inviting objections and suggestions from the public.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| 18th August 1994<br>later changed to <b>16th August 1994</b> vide Corrigendum dated 19th September 1994<br>S.O. 595 (E)<br>EPA, 3(2)(v), 3(1)<br>EP Rules 5(3)(a), 5(3)(d) | <ul style="list-style-type: none"> <li>Amendment stated that HTL was to be demarcated by demarcating authority constituted by Gol in consultation with Surveyor General.</li> <li>Importantly, the resultant amendment, in clarifying the meaning of HTL:               <ul style="list-style-type: none"> <li>Significantly amended the mandatory CRZ of 100m for rivers, creeks, etc to 50m</li> <li>Gave expansive powers to Central Government, which could now grant permission for construction on the landward side within 200m from HTL (i.e. No Development Zone (NDZ)) according to its discretion.</li> </ul> </li> <li>Did not allow for flattening of sand dunes while landscaping, but allowed live and barbed fencing and conditional construction of basements.</li> <li>Goal posts, net posts, lamp-posts were allowed.</li> <li>Basements were permitted subject to receipt of No Objection Certificate from State Ground Water Authority and provided it would not obstruct the free flow of ground water.</li> <li>Permitted plot falling in NDZ areas to be included for FSI calculation, although no construction would be permitted in NDZ.</li> </ul> |
| 18th April 1996<br>The Supreme Court's judgment in the Indian Council for Enviro Legal Action case:                                                                        | <p>The SC dealt with two main contentions of the petitioner; that of non-implementation of the notification and the validity of the 1994 amendment.</p> <ul style="list-style-type: none"> <li>The SC <b>quashed</b> 3 of the proposed amendments of August 1994:               <ol style="list-style-type: none"> <li>The relaxation of CRZ limits to 50m from 100m limit for rivers, creeks, etc.</li> <li>Unbridled power granted to the Central Government</li> <li>The area of NDZ to be taken into account while calculating FSI-FAR be 100 per cent. (FSI-FAR indexes, it was decreed, could take into account only 50 per cent of NDZ in its calculations.)</li> </ol> </li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |

| Date of amendment / order / event & legal clauses                                                                                                       | Details / comments / features                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
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| <p>Writ Petition (Civil) 664 of 1993<br/>I.A 19 of 1995 by<br/>The Goa Foundation,<br/>India Heritage Society<br/>(Goa chapter), Nirmal<br/>Vishwa.</p> | <p>Regarding the Notification implementation, the Supreme Court:</p> <ol style="list-style-type: none"> <li>1. Pulled up enforcement authorities for dereliction of duties, while directing authorities to implement the Notification. The court further commented that a single authority may not be able to monitor the CRZ, and suggested the constitution of State and National Coastal Zone Management Authorities, which could also draw upon the resources of NGOs to help implement laws.</li> <li>2. Ruled that CRZ for rivers be reinstated as a minimum of 100m in the absence of adequate justification to reduce it to 50m, and quashed the move to grant the Central Government arbitrary “unguided and uncanalised” powers to grant permissions for relaxation of NDZ limits. In addition, the court directed that CZMPs of all coastal states and union territories must be submitted by end June 1996, and set the date of hearing compliance of submission and finalisation regarding this for September 1996.</li> <li>3. Directed that in matters dealing with local geographical areas, the High Court must see that the law is enforced and hear complaints made by local inhabitants. The Supreme Court would only scrutinise matters regarding approval of CZMPs, or any suggested modifications in existing classification of areas.</li> <li>4. Issued show cause notices to the chief secretaries of states of Andhra Pradesh, Karnataka, Gujarat and Kerala for not having submitted their management plans as directed in interim orders issued earlier.</li> <li>5. Finally, ruled that till the CZMPs are finalised, the interim orders mentioned above would continue to operate.</li> </ol> |
| <p>31st January 1997<br/>S.O.73(E)<br/>EPA 3(1), 3(2)(v),<br/>EP Rules5 (3)(a), 5(4)</p>                                                                | <ul style="list-style-type: none"> <li>• This amendment was result of requests from A&amp;N Islands Administration to Central Government regarding difficulties faced by local people due to restrictions on withdrawal of ground water and prohibition of sand mining in CRZ.</li> <li>• No objections were invited for this amendment.</li> <li>• Manual drawal of ground water through ordinary wells or hand pumps was permitted for drinking purposes for local inhabitants only.</li> <li>• Permission for the same was required from Secretary, Department of Environment</li> <li>• Sand mining was allowed in A&amp;N Islands as long as a special Committee gave permission based on certain conditions.</li> <li>• Mining was permitted upto 31st March 1998 and <b>not beyond. (This means a prohibition exists on the extension of the deadline)</b></li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| <p>9th July 1997<br/>S. O. No. 494(E)<br/>EPA 3(1), 3(2)(v),<br/>EP Rules5 (3)(a), 5(4)</p>                                                             | <ul style="list-style-type: none"> <li>• No objections were invited for this amendment.</li> <li>• The Court has issued no orders to date.</li> <li>• The rationale was that State Governments had expressed need for several essential facilities to be constructed in the coastal zones.</li> <li>• Several provisions of the amendment continue to be operative.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| <p>20th April 1998<br/>S.O 334 (E)<br/>EPA 3(1), 3(2)(v),<br/>EP Rules 5(3)(a), 5(4)</p>                                                                | <ul style="list-style-type: none"> <li>• This rationale for this amendment was stated again to be difficulties faced by local people of A&amp;N Islands due to restrictions on sand mining.</li> <li>• No objections were invited for this amendment.</li> <li>• The amendment extended the permission for sand mining to the 30th September 1998, ignoring prohibition of extension of this deadline as stated in 31st January 1997 amendment.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |

| Date of amendment / order / event & legal clauses                                           | Details / comments / features                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
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| <p>30th September 1998<br/>S.O 873(E)<br/>EPA 3(1), 3(2)(v),<br/>EP Rules 5(3)(a), 5(4)</p> | <ul style="list-style-type: none"> <li>Based on the same rationale of difficulties of local people of A&amp;N Islands another amendment was issued.</li> <li>No objections were invited for this amendment.</li> <li>Permission for sand mining was extended upto 30th September 1999</li> <li>The permitted quantity of sand for mining was to be based on the "requirements of 1998-99 and 1999-2000 annual plans."</li> <li>This amendment also ignores prohibition of extension of this deadline as stated in 31st January 1997</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| <p>29th December 1998<br/>S.O 1122(E)<br/>EPA 3(1), 3(2)(v),<br/>EP Rules 5(3)(a), 5(4)</p> | <ul style="list-style-type: none"> <li>No objections were invited for this amendment.</li> <li>The Central Government is said to have deliberated upon and decided to simplify procedure for demarcation of HTL, which it laid down in this notification</li> <li>The HTL is defined as the line on land up to which the highest water line reaches during spring tide</li> <li>The amendment lays down that HTL shall be demarcated uniformly in all parts of the country by demarcating authority or authorities so authorised by Central Government, in accordance with general guidelines issued in this regard.</li> <li>However these have not been spelt out in the Notification.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| <p>Draft amendment dated<br/>5th August 1999<br/>S.O 692(E)<br/>EPA 3(1), 3(2)(v), 6</p>    | <ul style="list-style-type: none"> <li>Objections were invited to this amendment</li> <li>The notification states that inhabitants of the CRZ area have faced difficulties and there is a need for infrastructure facilities along the coast</li> <li>It sought once again to reduce CRZ for rivers, creeks and backwaters to 50m based on certain conditions.</li> <li>It also stated that for permitted facilities for storage of petroleum products in Annexure - III, both MoEF and MoST were involved depending on location of project and port limits (port limits are those that have been notified as such before the 9th July 1997 amendment)</li> <li>Facilities for receipt, storage and regasification of Liquefied Natural Gas were permitted according to guidelines issued by MoPNG and MoEF.</li> <li>It permitted salt harvesting in CRZ-I areas between the LTL and HTL provided they were not classified as CRZ-I</li> <li>It removed the authority for permitting construction along CRZ-III areas, which was introduced by the 9th July 1997 amendment.</li> <li>Permission for construction required for 'local inhabitants' is to be granted by either the Centre or State or any designated authority (however it is not specified which of these is the final authority). The amendment lays down more conditions under which such construction may be permitted.</li> <li>Constructions in CRZ III between 200-500m from HTL, were previously permitted for meeting traditional rights and customary uses. The words 'local inhabitants' have replaced the previous words 'traditional rights and customary uses'. The term local inhabitant used in this clause and elsewhere in the notification is defined as a person or his descendants who have been inhabiting in the area prior to the 19th February, 1991.</li> <li>Relaxations were made for reconstruction / alteration of existing buildings allowing for horizontal landward extension of dwelling unit not exceeding a total plinth area of 100m.</li> <li>It made 'exploration for extraction of oil and natural gas in CRZ a permissible activity requiring permission from the MoEF'.</li> </ul> |

| Date of amendment / order / event & legal clauses                             | Details / comments / features                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
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| 29th September 1999<br>S.O. 998 (E)<br>EPA 3(1), 3(2)(v)<br>EP Rules 5(4)     | <ul style="list-style-type: none"> <li>• No objections were invited for this amendment.</li> <li>• Using the rationale that local people of A&amp;N Islands faced difficulties, another amendment was issued.</li> <li>• Permission for sand mining was extended upto 30th September 2000.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| 4th August 2000<br>S.O 730 (E)<br>EPA 3(1), 3(2)(v), 6                        | <ul style="list-style-type: none"> <li>• The amendment is the final notification for 5th August 1999 draft amendment.</li> <li>• The amendment states that all objections and suggestions relating to oil and natural gas exploration; procedure for according clearance to storages of specified petroleum products and receipt, storage and regasification of LNG and points raised by the petitioner in Delhi High Court in civil writ petition No. 4198/98 have been duly considered by the Central Government</li> <li>• This final amendment to earlier draft retained only two of proposed changes and withdrew the rest.</li> <li>• The changes were ones related to para 2(ii) about facilities for receipt, storage and regasification of LNG, which was permitted according to guidelines issued by the MoPNG and MoEF and 3(2)(ii) about exploration for oil and gas in the CRZ.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| 12th April 2001<br>S.O 329(E)<br>EPA 3(1), 3(2)(v),<br>EP Rules 5(3)(a), 5(4) | <ul style="list-style-type: none"> <li>• No objections were invited for this amendment.</li> <li>• Projects of Department of Atomic Energy were exempted from prohibition.</li> <li>• Facilities for receipt and storage of petroleum products and LNG as specified in Annexure III appended to the Notification and facilities for regasification of LNG were permitted provided certain guidelines were followed.</li> <li>• The delegation of powers to accord clearances to MoST were withdrawn.</li> <li>• Land reclamation etc was permitted for certain activities provided that reclamation was not done for commercial purposes such as shopping and housing complexes, hotels and entertainment activities.</li> <li>• Mining of sands, rocks and other substrata materials was permitted for exploration and extraction of oil and natural gas</li> <li>• Construction activities related to projects of Department of Atomic Energy were treated as permissible activities requiring permission from the MoEF.</li> <li>• Operational constructions for ports, harbours and light houses and constructions for activities such as jetties, wharves, quays and slipways, pipelines, conveying systems including transmission lines were also added to permissible activities needing MoEF clearances.</li> <li>• Projects relating to Department of Atomic Energy and (b) Pipelines, conveying systems including transmission lines were permitted in CRZ-I (i) areas</li> <li>• In the CRZ-I area, exploration and extraction of natural gas was permitted.</li> <li>• The West Bengal CZMA was made responsible for according permission for construction of dispensaries, schools, public rain shelters, community toilets, bridges, roads, jetties, water supply, drainage, sewerage which are required for traditional inhabitants of the Sunderbans Biosphere Reserve</li> <li>• The amendment permitted storage of petroleum products specified in the Annexure in any part of CRZ other than CRZ-I areas. Previously this was restricted only to port areas.</li> <li>• LNG was added to list of petroleum products on Annexure III</li> <li>• Environmental clearances accorded by MoST from 9th July 1997 till publication of this Notification are valid. All proposals for environmental clearance pending with MoST stand transferred to MoEF from date of publication of this Notification.</li> </ul> |

| Date of amendment / order / event & legal clauses                                                         | Details / comments / features                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
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| <p>3rd October 2001<br/>S.O 998(E)<br/>EPA 3(1), 3(2)(v),<br/>EP Rules 5(3)&amp; (4)</p>                  | <ul style="list-style-type: none"> <li>• No objections were invited for this amendment</li> <li>• The rationale was that local people of A&amp;N Islands faced difficulties, yet another amendment was issued.</li> <li>• Permission for sand mining was extended upto 30th September 2002.</li> <li>• The dates for annual plans were also extended by a year.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| <p>11th January 2002<br/>Draft amendment<br/>S.O 51(E)<br/>EPA 3(1), 3(2)(v), 6<br/>EP Rules 5(3)(a),</p> | <ul style="list-style-type: none"> <li>• The rationale for this amendment is stated to be: <ul style="list-style-type: none"> <li>▶ The inhabitants of areas falling within CRZ are facing difficulties and there is a need for infrastructural facilities in these areas.</li> <li>▶ The Central Government is stated to have had consultations with state governments and taken a decision to permit construction of dwelling units and development of infrastructural facilities for local inhabitants; housing schemes of Urban Development Authorities which had been approved prior to 19th February 1991, facilities and activities including setting up of <b>non polluting industries in the field of information technology and other service industries in the Special Economic Zones</b>, and salt harvesting by solar evaporation of sea water in the said zone.</li> </ul> </li> <li>• It introduced a 90-day time limit for assessment of projects and 30 days for conveying a decision on the clearance status of projects proposed within the CRZ.</li> <li>• It introduced the same provisions (with slight modifications) for the Note of Para 1 (i) of the notification that the 5th August 1999 draft amendment introduced. This was despite these proposed provisions of 5th August 1999 draft amendment being excluded in the subsequent amendments dated 4th August 2000 and 12th April 2001, and 3rd October 2001.</li> <li>• The <b>draft</b> amendment exempted "non polluting industries in the field of information technology and other service industries in the CRZ of Special Economic Zones" from prohibitions as Para 2 (i) (c).</li> <li>• It sought to exclude mining of certain minerals under Atomic Energy Act, 1962 from the prohibited activities clause, subject to EIA studies and an approved mining plan.</li> <li>• Housing schemes in CRZ area, mining of rare minerals and specified activities/facilities in SEZ were to be permissible activities requiring clearances from MoEF</li> <li>• Salt harvesting by solar evaporation of sea water was to be permitted in CRZ-I areas</li> <li>• In CRZ-II areas, exemption was made for housing schemes of State Urban Development Authorities</li> <li>• Further relaxations were sought for CRZ-III areas, based on similar changes proposed in 5th August 1999 draft amendment. <b>All activities within SEZs were permitted.</b></li> <li>• This amendment substitutes the words 'local inhabitants' for traditional rights or customary uses.</li> <li>• The notification replicates all other provisions of the 5th August 1999 draft amendment as far as relaxations for constructions for 'local inhabitants' etc are concerned despite most of these being omitted in subsequent final amendments.</li> </ul> |

| Date of amendment / order / event & legal clauses                                           | Details / comments / features                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
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| <p>21st May 2002<br/>S.O 550(E)<br/>EPA 3(1), 3(2)(v),<br/>EP Rules 5(3)</p>                | <ul style="list-style-type: none"> <li>• The amendment is the final notification for the draft 11th Jan 2002 amendment.</li> <li>• It redefined distance upto which CRZ is measured along the rivers, creeks etc, as upto the point where a minimum salinity level of 5 ppt is recorded.</li> <li>• All the provisions that were common to the 5th August 1999 draft and the 11th January 2002 draft were struck down by this final amendment.</li> <li>• It permitted “non-polluting industries in the field of information technology and other <b>service industries</b> in CRZ of Special Economic Zones (SEZ)”</li> <li>• It retained the time limit on assessment of project documents that was proposed in the 11th January 2002 draft.</li> <li>• Certain changes were made to activities permitted in CRZI, II &amp; III zones.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                   |
| <p>19th October 2002<br/>S.O 1100 (E)<br/>EPA 3(1), 3(2)(v),<br/>EP Rules 5(3)&amp; (4)</p> | <ul style="list-style-type: none"> <li>• No objections were invited for this amendment. It was issued in ‘public interest’ using Rule 5(4) of the EP Rules</li> <li>• Rationale was ‘to harmonise &amp; elaborate provisions of the Notification’ and to provide permission for setting up of certain projects that were presumably in public interest.</li> <li>• It stated that clearances given for activities in CRZ area were valid for 5 years before which construction or operations should commence. However further actions have not been elaborated on, for instance, on adherence to clearance conditions.</li> <li>• The following activities required MoEF clearances to be set up in CRZ areas: <ul style="list-style-type: none"> <li>▶ In CRZ-I areas installation of weather radar for monitoring of cyclone movement and prediction by Indian Meteorological Department was permitted.</li> <li>▶ In the CRZ-I between HTL and LTL, the following was permitted: desalination plants, storage of non-hazardous cargo such as edible oil, fertilizers and food grain within notified ports.</li> <li>▶ In CRZ II and III areas list of products in Annexure III was permitted subject to conditions mentioned in Para 2(ii).</li> </ul> </li> </ul> |
| <p>16th January 2003<br/>S.O 52 (E)<br/>EPA 3(1), 3(2)(v)<br/>EP Rules 5(3), 5(4)</p>       | <ul style="list-style-type: none"> <li>• No objections were invited for this amendment since it was stated to be in public interest.</li> <li>• Rationale was that A&amp;N Administration had stated that local population was facing difficulties due to restrictions on sand mining</li> <li>• It extended sand mining in A&amp;N Islands upto 31st March 2003.</li> <li>• This was to be permitted by a Committee from 1st April 2002 to 31st March 2003</li> <li>• There was total upper limit fixed on amount of sand that could be mined at 55,127 cu.m and this was only to be permitted for construction purposes on a case by case basis.</li> <li>• The sand was to be mined from selected sites inter alia based on rate of replenishment of deposition of sand</li> <li>• Permission could be granted based on mining plans, with stipulations on safeguards to prevent damage to the sensitive coastal eco-system including corals, turtles, crocodiles, birds nesting sites and protected areas.</li> </ul>                                                                                                                                                                                                                                             |

| Date of amendment / order / event & legal clauses                            | Details / comments / features                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
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| 22nd April 2003<br>S.O 460(E)<br>EPA 3(2)(1), 3(2)(v)<br>EP Rules 5(3), 5(4) | <ul style="list-style-type: none"> <li>• This amendment was issued using the public interest clause without inviting objections to the same.</li> <li>• Rationale given by Central Government was that it had been informed that large sized projects were being implemented without clearance from MoEF and that this resulted in destruction of mangroves, depletion of ground water and certain other activities involving ecological damage.</li> <li>• It sought to add a few more activities to list of permissible activities requiring environmental clearance from MoEF. These were:               <ul style="list-style-type: none"> <li>➤ The demolition or reconstruction of buildings of archaeological or historical importance, heritage buildings and buildings under public use (defined in the amendment as including use for purposes of worship, education, medical care and cultural activities.</li> </ul> </li> <li>• All other activities involving an investment of less than five crore rupees were to be regulated by the State level authorities in keeping with provisions of the Notification in Annexure I; any project costing more than five crores required clearance from MoEF</li> </ul> |
| 30th May 2003<br>S.O.635 (E)<br>EPA 3(1), 3(2)(v)                            | <ul style="list-style-type: none"> <li>• No objections were invited for this amendment either.</li> <li>• Rationale was that local people A&amp;N Islands were faced with difficulties</li> <li>• Permission for sand mining was extended upto 31st March 2004.</li> <li>• The dates for the annual plans were also extended by a year.</li> <li>• The quantity of sand to be mined was fixed at 44,102 cu.m only for construction purposes</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 30th May 2003<br>S.O.636(E)<br>EPA 3(1), 3(2)(v)<br>EP Rules 5(3), 5(4)      | <ul style="list-style-type: none"> <li>• No objections were invited for this amendment as this was in public interest</li> <li>• The amendment was introduced presumably taking into consideration requirement of construction of jetty and wharves for embarkation and disembarkation in Lakshadweep.</li> <li>• The amendment revised the Committee to permit sand mining</li> <li>• Permission for sand mining was extended upto 30th September 2001.</li> <li>• The dates for the annual plans were also extended by a year.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| 24th June 2003<br>S.O.725(E)<br>EPA 3(1), 3(2)(v)<br>EP Rules 5(3), 5(4)     | <ul style="list-style-type: none"> <li>• The notification introduced another clause under norms for development <i>for CRZ IV for setting up of facilities for treatment of wastes and effluents arising from hotels, beach resorts &amp; domestic sewage and disposal of treated wastes and effluents in areas other than CRZ-I</i></li> <li>• This was to be based on a detailed scientific study to assess environmental impact of the same.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| 24th July 2003<br>S.O.838 (E)<br>EPA 3(2)(1), 3(2)(v)<br>EP Rules 5(3), 5(4) | <ul style="list-style-type: none"> <li>• This amendment was issued using the public interest clause without inviting objections to the same.</li> <li>• The amendments were introduced by Central Government after it had considered specific requirements of projects relating to Department of Atomic Energy in terms of their location</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |

| Date of amendment / order / event & legal clauses | Details / comments / features                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|---------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 25th January 2005<br>SO.Nil (E)                   | <ul style="list-style-type: none"> <li>• The amendment states that in A&amp;N Islands, mining of sand may be permitted for construction purpose on a case to case basis by a Committee constituted by the Lieutenant Governor of the Andaman and Nicobar Islands consisting of – (1) the Chief Secretary, Andaman &amp; Nicobar Administration; (2) Secretary, Department of Environment; (3) Secretary, Department of Water Resources; and (4) Secretary, Andaman Public Works Department;</li> <li>• That total quantity of sand to be mined shall not exceed 28,226 cu m for period ending on 31st December, 2005 and that sand mining shall be undertaken only in those areas identified as accreting areas by Institute for Ocean Management (IOM), Chennai and based on rate of replenishment or deposition of sand;</li> <li>• That permission as may be granted under this sub-paragraph for mining of sand shall be based on mining plans and shall stipulate sufficient safeguards to prevent damage to the sensitive coastal eco-system including corals, turtles, crocodiles, birds nesting sites and protected areas</li> <li>• A&amp;N Administration to identify alternate construction materials within period of one year i.e., from 1st January, 2005 to 31st December, 2005;</li> <li>• A monitoring Committee shall be constituted for monitoring the mining activity and environmental safeguards taken, by A&amp;N Administration.</li> <li>• The monitoring Committee shall comprise of representatives from Union Territory Administration, Regional Office of the Ministry of Environment and Forests, Bhubaneswar and an NGO based at Andaman and Nicobar.</li> <li>• The monitoring report shall be sent quarterly to Ministry of Environment and Forests</li> </ul> |

# Annexure-3

The following is the Sample survey sheet prepared by National Fish workers Forum for identifying violations along the coast zone, the same were used for my on field survey to identify the violations along the stretch1 of the mangala corniche project.

Check List for Mapping Violations in CRZ (See at the end of the checklist: details given on conditions permitting activities in CRZ)

| Sl. No. | ACTIVITIES                                                                                                                                         | CRZ-I      |         | CRZ-II                        |                                 | CRZ - III           |           |
|---------|----------------------------------------------------------------------------------------------------------------------------------------------------|------------|---------|-------------------------------|---------------------------------|---------------------|-----------|
|         |                                                                                                                                                    | HTL - 500M | HTL-LTL | HTL-<br>Approved<br>Structure | Approved<br>structure<br>-500 m | HTL- 200 m<br>(NDZ) | 200-500 m |
| 1       | New Construction, Building                                                                                                                         | X          | X       | X                             | ✓                               | X                   | ✓         |
| 2       | Facilities for carrying treated effluents and waste water discharge into the sea                                                                   | ✓          | ✓       | ✓                             | ✓                               | ✓                   | ✓         |
| 3       | Facilities for carrying sea water for cooling purposes, oil, gas and similar pipelines                                                             | X          | X       | ✓                             | ✓                               | ✓                   | ✓         |
| 4       | Reconstruction of the authorised buildings                                                                                                         | X          | X       | ✓                             | ✓                               | ✓                   | ✓         |
| 5       | Activities like agriculture, horticulture, garden, pastures, parks, playfields, forestry and salt manufacturing from sea water                     | X          | X       | X                             | ✓                               | ✓                   | ✓         |
| 6       | Construction of hotels and beach resorts for temporary occupation of tourists and visitors                                                         | X          | X       | X                             | ✓                               | X                   | ✓         |
| 7       | Construction of basements for hotels and beach resorts                                                                                             | X          | X       | X                             | X                               | X                   | ✓         |
| 8       | Withdrawal of ground water for hotels & beach resorts                                                                                              | X          | X       | X                             | ✓                               | X                   | ✓         |
| 9       | Extraction of sand, levelling or digging of sand stretches only for structural foundation of buildings, swimming pool for hotels and beach resorts | X          | X       | X                             | ✓                               | X                   | ✓         |
| 10      | Flattening of sand dunes for hotels and beach resorts                                                                                              | X          | X       | X                             | X                               | X                   | X         |
| 11      | Permanent structures for sports facilities except goal post, net post and lamp post in the case of hotels and beach resorts                        | X          | X       | X                             | X                               | X                   | X         |

| Sl.No. | ACTIVITIES                                                                                                 | CRZ-I       |         | CRZ-II                   |                            | CRZ - III        |           |
|--------|------------------------------------------------------------------------------------------------------------|-------------|---------|--------------------------|----------------------------|------------------|-----------|
|        |                                                                                                            | HTL - 500 M | HTL-LTL | HTL - Approved Structure | Approved structure - 500 m | HTL- 200 m (NDZ) | 200-500 m |
| 12     | Discharge of untreated effluents and solid waste, emissions and noise levels from hotels and beach resorts | X           | X       | X                        | X                          | X                | X         |
| 13     | New industries and expansion of existing industries                                                        | X           | X       | X                        | X                          | X                | X         |
| 14     | Industries which needs water front or foreshore facilities                                                 | X           | ✓       | ✓                        | ✓                          | ✓                | ✓         |
| 15     | Manufacturing, handling, storage, disposal of hazardous substances                                         | X           | X       | X                        | X                          | X                | X         |
| 16     | Transfer of Hazardous substances from ships to port, terminal, refineries and vice versa                   | X           | X       | ✓                        | ✓                          | ✓                | ✓         |
| 17     | Setting up of fish processing units including warehouses                                                   | X           | X       | X                        | X                          | X                | X         |
| 18     | Expansion of fish processing units including ware houses                                                   | X           | X       | ✓                        | ✓                          | ✓                | ✓         |
| 19     | Natural fish drying and hatcheries*                                                                        | X           | X       | ✓                        | ✓                          | ✓*               | ✓         |
| 20     | Setting up and expansion of units/mechanism for disposal of waste and effluents                            | X           | X       | X                        | X                          | X                | X         |
| 21     | Setting up and expansion of facilities required for discharging treated effluents into the water course    | X           | X       | X                        | ✓                          | ✓                | ✓         |
| 22     | Construction of storm water drains                                                                         | ✓           | ✓       | ✓                        | ✓                          | ✓                | ✓         |
| 23     | Discharge of untreated waste and effluents from industries, cities/towns, human settlements                | X           | X       | X                        | X                          | X                | X         |

|      |                                                                                                                                                                                                                                                                           |   |   |   |   |   |   |
|------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---|---|---|---|---|---|
| 24   | Dumping of city waste for land filling or otherwise                                                                                                                                                                                                                       | X | X | X | X | X | X |
| 25   | Dumping of ash and other waste from thermal power stations                                                                                                                                                                                                                | X | X | X | X | X | X |
| 26   | Land reclamation, bunding or any disturbance to the course of sea water                                                                                                                                                                                                   | X | X | X | X | X | X |
| 27   | Bunding/disturbance of natural course of sea water for construction of port, harbour, wharf, quay, slipway, bridge & sealinks & for coastal protection structure, maintenance and cleaning of water way, structures for preventing salinity ingress & sweetwater recharge | X | X | ✓ | ✓ | ✓ | ✓ |
| 28   | Mining of sand, rock and other substrata materials                                                                                                                                                                                                                        | X | X | X | X | X | X |
| 29   | Mining of rare minerals not available outside CRZ                                                                                                                                                                                                                         | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| 30   | Withdrawal of ground water manually where no other source of water available                                                                                                                                                                                              | X | X | ✓ | ✓ | ✓ | ✓ |
| 31   | Dressing or altering of sand dunes, hills, natural features, land scape                                                                                                                                                                                                   | X | X | X | X | X | X |
| 32.a | Construction activity related to defence which requires foreshore facilities                                                                                                                                                                                              | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| 32.b | Residential, office, hospital complexes, workshops in connection to defence                                                                                                                                                                                               | X | X | X | X | X | X |
| 33   | Expansion or modernisation of existing fishing harbour, operational construction of ports, harbours, jetties, lighthouse, wharves, slipways, quays etc.                                                                                                                   | X | ✓ | ✓ | ✓ | ✓ | ✓ |
| 34   | Reclamation for commercial purposes such as shopping and housing complexes, hotels and entertainment activities                                                                                                                                                           | X | X | X | X | X | X |

| Sl.No. | ACTIVITIES                                                                                                                                             | CRZ-I      |         | CRZ-II                   |                            | CRZ - III        |           |
|--------|--------------------------------------------------------------------------------------------------------------------------------------------------------|------------|---------|--------------------------|----------------------------|------------------|-----------|
|        |                                                                                                                                                        | HTL - 500M | HTL-LTL | HTL - Approved Structure | Approved structure - 500 m | HTL- 200 m (NDZ) | 200-500 m |
| 35     | Facilities for transport of raw materials to thermal power stations; intake of cooling and outfall for discharge of treated waste water, cooling water | X          | ✓       | ✓                        | ✓                          | ✓                | ✓         |
| 36     | All other activities with investment exceeding Rs.5 crores                                                                                             | X          | X       | ✓                        | ✓                          | ✓                | ✓         |

X - Prohibited    ✓ - Permitted    ✓ - Permitted under condition    \* net applicable for hatcheries.