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A CRITICAL ANALYSIS OF THE CRZ NOTIFICATION, 2019: UNVEILING PATHWAYS FOR UNSUSTAINABLE COASTAL DEVELOPMENT IN INDIA

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Abstract

Indian coasts are constantly threatened by factors such as rapidly rising sea levels, increasing levels of human activity, and large-scale development along the shoreline. Despite this, the current Indian coastal regulatory regime has been drafted with the intent to primarily preserve the coast by prohibiting certain activities and to restore it when damaged. Its object is to protect, not to proactively enhance, which, to date, remains a crucial need for both coastal protection and long-term development. The Coastal Regulation Zone (CRZ) Notification, 2019, forms the crux of the Indian coastal regulatory regime and is responsible for balancing developmental needs with environmental concerns.

This paper aims to critically analyze the provisions of the CRZ, 2019, and evaluate the extent to which it aligns with the principles of Ecological Modernization, a theory that posits that environmental protection and economic growth can be mutually reinforcing, wherein technological advancements and innovative policies lead to improved environmental outcomes. The paper aims to identify lacunae in the current law and suggest possible amendments that allow for sustainable development. This paper also discusses whether the current notification caters to the 'Standard view' of ecological discourse and examines the adverse socio-ecological consequences that such a law will invite.

A detailed analysis of the CRZ 2019 and its consequences post-enactment have been considered

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to identify gaps in the law. Judicial Decisions with respect to coastal development, principles of environmental law, the object of environmental policies, frameworks for coastal and wetland management implemented by other countries, and scientific methods examining the vulnerability of coasts and the reasons behind the same have been examined to deduce suggestions geared towards the streamlining of coastal legislation in accordance with the Theory of Ecological Modernization. The findings of this study contribute to the ongoing discourse on coastal governance and sustainability, offering insights to policymakers, stakeholders, and environmentalists on ways to enhance the eco-modern aspects of the CRZ Notification 2019. This paper intends to secure the long-term preservation of coastal ecosystems, their biodiversity, and its overall ecological integrity, while ensuring sustainable development. Findings indicate this can be done by incorporating eco-modern developmental practices, establishing accountability amongst government agencies, incentivizing ecologically responsible policies and practices, and by deterring infringement.

Keywords: CRZ Notification 2019, Sustainable Development, Ecological Modernization, Standard View

INTRODUCTION

The coastal regions of India have long led to clashes between the state's desire for development and its duty to conserve the environment. The Coastal Regulation Zone (CRZ) Notification, first introduced in 1991 and subsequently revised in 2011 and 2019, plays a pivotal role in governing human activities along India's vast coastline. While it is designed to balance the need for economic growth with the duty to preserve fragile coastal ecosystems, its implementation and effectiveness remain subjects of rigorous debate and scrutiny. While policymakers and industries advocate for economic growth to uplift communities and boost the national economy, environmentalists and local communities emphasize the irreversible damage caused to coastal ecosystems and the long-term consequences for both the environment and livelihoods. Striking a balance between economic prosperity and environmental sustainability remains a formidable challenge in India, as stakeholders grapple with varied priorities and seek solutions that can harmonize growth with the imperative of preserving the country's invaluable coastal ecology.

This paper aims to critically analyse the CRZ Notification, 2019, while examining scope for

shifting towards an eco-modern framework for sustainable coastal development in India. In light of the rapid transformation that Indian coastal regions are undergoing due to a multitude of factors, such as population growth, urbanization, industrialization, and climate change, there exists a dire need to incorporate sustainable developmental practices into the Indian framework of coastal management. This can be done through amendments to the notification made in accordance with principles of ecological modernization. The paper through a comprehensive review of relevant literature, an analysis of the current legal and policy framework, and case studies from select coastal regions in India aims to evaluate the current status of CRZ regulations, and provide insights into the practical application of the theory of ecological modernization in the context of Indian coastal development.

Ecological modernization, as a theoretical framework, suggests that modern societies can achieve sustainable development by integrating ecological considerations into their economic and technological advancements. It advocates for a transition from a "business-as-usual" approach, which often leads to environmental degradation, towards a more holistic and sustainable approach to development. This perspective emphasizes that environmental concerns should not be seen as impediments to progress but as integral components of a prosperous and resilient future.

Within the context of India's coastal development, ecological modernization offers an innovative approach that envisions a future where economic growth coexists harmoniously with the protection and restoration of coastal ecosystems. By critically examining the CRZ Notification, 2019, in light of ecological modernization principles, this paper aims to identify gaps, challenges, and opportunities in India's quest for sustainable coastal development.

Objectives of the CRZ 2019: Whether outdated?

The CRZ Notification 2019 (CRZ 2019) retains all three objectives laid down in the CRZ Notification 2011 (CRZ 2011). Using scientific methods, it seeks to promote sustainable development along coasts while considering various factors that threaten coastal ecosystems. It also aims to secure the livelihood security of fishermen and other local communities, all while trying to ‘conserve and protect’ the environment unique to coasts and marine areas.

The objectives of the CRZ 2019 are, however, outdated as they fail to augment the objectives listed in the CRZ 2011 per the recommendations made by the Swaminathan Committee and in the Dr Shailesh Nayak Committee Report. With nearly 33.6%, that is, 1/3rd of the Indian coastline being vulnerable to erosion,[2] effort ought to be made to not only conserve and protect but also to restore what has been lost over the years. With 60.5% of the Coast in West Bengal, 46.4% in Kerala, 42.7% in Tamil Nadu, and 56.2% in Puducherry suffering erosion,[3] there exists a dire need to not only protect what is left of the coast but also to reinstate coastal stability in such areas to secure long-term development, and to prevent adverse environmental consequences.

Countries such as the United States of America have recognised the need for employing such a proactive approach, and through its Coastal Zone Management Act of 1972, has declared that its object, in addition to preserving, protecting, and developing the coast, shall be to restore and enhance national coastal resources where possible.[4] Thus, such express recognition of the proactive intent of the law may pave the way for policies solely concerned with improving the existing state of coasts in India.

Areas declared as CRZ (Coastal Regulation Zone)

Both notifications classify "land area from High Tide Line to 500mts on the landward side along the seafront" as CRZ.[5] The CRZ 2019, however, reduces the CRZ area from "land area between HTL to 100 mts or width of the creek whichever is less on the landward side along the tidal influenced water bodies that are connected to the sea"[6] to "land area between HTL to 50 meters or width of the creek, whichever is less."[7]

[2]Ministry of Environment Forest and Climate Change, 'Press Release: Government committed for taking proactive steps in combating sea erosion and protection of India's coastal areas and the coastal communities' (PIB, 27 March 2023)
<https://pib.gov.in/PressReleaseIframePage.aspx?PRID=1911131> accessed 15 October 2023
[3]Shiv Sahay Singh, 'Bengal Coast Faces Most Erosion' (The Hindu, 7 April 2022) <https://www.thehindu.com/sci-tech/energy-and-environment/34-of-indias-coastline-is-eroding-ministry-of-earth-sciences/article65305899.ece> accessed 15 October 2023
[4]P Leelakrishnan, *Environmental Law in India* (5th Edn. 2019, Lexis Nexis 1999) 76
[5] ¶ 1(i), S.O.19(E) dated 6th Jan. 2011; ¶ 1(i), G.S.R. 37(E) dated 18th Jan. 2019
[6] ¶ 1(ii), S.O.19(E) dated 6th Jan. 2011
[7] ¶ 1(ii), G.S.R. 37(E) dated 18th Jan. 2019

Under the CRZ 2011, land lying between the hazard line and 500mts from the High Tide Line on the landward side, in case of the seafront and between the hazard line and 100mts line in case of tidal influenced water body, was also declared to be CRZ area. The CRZ 2019 has done away with such demarcation, thus ensuring that certain areas do not come within the purview of coastal laws.[8] This will open high-risk areas for development and will have the effect of endangering the lives of local communities and other persons involved in the development of this area. While the delineation of a hazard line alone may serve as a tool to guide the design and implementation of hazard mitigation measures, visibly demarcating the CRZ area that was done away with would've helped provide clarity regarding the area within which mitigation measures are to be applied.

Classification of CRZ

Zonation, or the process of classifying coastal areas on the basis of activities that complement each other while excluding those that do not, is one of several scientific principles incorporated into the Indian coastal management scheme on the recommendation of the Swaminathan Committee.[9] Such classification will help identify areas capable of sustaining increased development while distinguishing them from sensitive areas requiring higher levels of protection. Classification can also help reduce ambiguities in the list of prohibited and permissible activities in each zone. It will also resolve conflicts by allowing regulatory authorities to frame site-specific policies and plans that promote development without imposing costs on the environment. The CRZ 2019 has accordingly introduced several additional classifications within the existing list of zones and has provided for zone-specific regulations and exceptions. A general description of the same has been provided to help make sense of the relative impact of permissible activities in each of these zones.

CRZ-I: The CRZ 2019 retains all ecologically sensitive areas mentioned under CRZ-I in the CRZ 2011. It further classifies this critically vulnerable zone into 2 categories, namely, CRZ-I A and CRZ-I B. CRZ-I A consists of ecologically sensitive areas and physical features that play an

[8] ¶ 1(iii), S.O.19(E) dated 6th Jan. 2011
[9] M.S. Swaminathan Committee, *Reportof the Committee to Review the Coastal Regulation Zone Notification 1991* (2005) 25

integral role in maintaining the integrity of the coast.[10] They consist of mangroves, coral reefs, sand dunes, biologically active mudflats, marine parks, salt marshes, turtle nesting grounds, etc.[11] CRZ-I B consists of the intertidal zone, that is, the area between the High Tide Line and the Low Tide Line.[12].

CRZ-II: CRZ-II areas under both notifications consist of developed areas close to the shore. The CRZ 2019 additionally specifies that 'developed land areas' are those that are "substantially built-up with a ratio of built-up plots to that of total plots being more than 50 per cent ."[13]

CRZ-III: CRZ-III, under the CRZ 2011, in general, consisted of those areas that have been left relatively undisturbed and those that do not fall under CRZ-I or II.

Under the CRZ 2019, CRZ-III shall consist of relatively undisturbed areas that do not fall under CRZ-II.[14] CRZ-III has been further sub-classified into CRZ-III A (consisting of densely populated areas), where an area of up to 50mts from the High Tide Line shall be designated as a "No Development Zone" (NDZ), provided the same has been approved.[15] Otherwise, an NDZ of 200mts shall remain. CRZ-III B shall consist of areas with low population density, and similarly, an area of up to 200mts from the High Tide Line on the landward side shall be an NDZ.[16] Land falling within 50 mts from the High Tide Line or land equivalent to the width of the creek (whichever is less) along the tidal-influenced water bodies in CRZ III shall also be designated as an NDZ in CRZ III under CRZ 2019.[17] CRZ 2011 deems area extending to 200mts from the High Tide Line on the landward side in case of the shoreline and 100mts along tidal-influenced water bodies or the width of the creek, whichever is less is to be an NDZ.[18] This indicates that width of the NDZ along tidal influenced water bodies has been reduced by half under the CRZ 2019.

[10] ¶ 2.1.1(a), G.S.R. 37(E) dated 18th Jan. 2019
[11] Ibid.
[12]¶ 2.1.2, G.S.R. 37(E) dated 18th Jan. 2019
[13] ¶ 2.2, G.S.R. 37(E) dated 18th Jan. 2019
[14] ¶ 2.3, G.S.R. 37(E) dated 18th Jan. 2019
[15] ¶ 2.3.1, G.S.R. 37(E) dated 18th Jan. 2019
[16] ¶ 2.3.2, G.S.R. 37(E) dated 18th Jan. 2019
[17] ¶ 2.3.3, G.S.R. 37(E) dated 18th Jan. 2019
[18] ¶ 8 III A, S.O.19(E) dated 6th Jan. 2011

CRZ-IV: CRZ-IV shall consist of water and seabed areas and shall be sub-classified into CRZ-IV A and CRZ-IV B.[19]

The general trend seems to be that of decreasing the amount of protected spaces in favour of development. The Central Government has yielded to the demands of certain stakeholders and made substantial concessions to accommodate their requests. The government arrived at this decision despite being met with widespread opposition from stakeholders seeking to protect the environment.[20]

Regulation of permissible activities within CRZ

Changes within the CRZ-I:

Para 5 of the CRZ Notification 2019 lays down norms for regulating permissible activities within the CRZ.[21] It lays down distinct rules for regulating activities in CRZ-I A and CRZ-I B and has introduced several new provisions that legitimize activities that were previously prohibited in CRZ-I A areas. The CRZ 2011, in contrast, does not expressly distinguish between activities that were to be permitted in specific areas within the zone.

Introducing eco-tourism in a critically vulnerable zone

Through the CRZ 2019, the state permits eco-tourism in ecologically sensitive areas (CRZ-I A) by allowing mangrove walks, nature trails, tree huts, etc.[22] In its bid to introduce economic development in coastal areas, the state now facilitates tourism in critically vulnerable zones, knowing full well the problems such laws will pose. While sustainable eco-tourism may be envisaged, given how fragile the ecosystems are in CRZ-I A, permitting the same may not have

[19] ¶ 2.4, 2.4.1, 2.4.2, G.S.R. 37(E) dated 18th Jan. 2019
[20] Meenakshi Kapoor, 'India's 2019 coastal regulation law ignored 90% of the objections made to the draft' (Scroll.in, 29 February 2020) <https://scroll.in/article/954402/indias-2019-coastal-regulation-law-ignored-90-of-the-objections-made-to-the-draft > accessed 20 October 2023
[21] ¶ 5, G.S.R. 37(E) dated 18th Jan. 2019
[22] ¶ 5.1.1 (i), G.S.R. 37(E) dated 18th Jan. 2019

been the best course of action. Success in eco-tourism may damage the environment, further strain local infrastructure and natural resources, adversely affect local communities and lead to the development of vulnerable industries and eco-exploitation.[23] The zone ought to be reserved for research aimed primarily at improving the environment, mitigating harm caused by natural hazards, and conserving flora and fauna unique to that area. While eco-tourism may be utilised to sensitize people towards the environment and to improve local economies, it may be more effective if introduced in zones other than the CRZ-I A.

Permitting road construction in CRZ-I A at the cost of mangrove buffer zones

The CRZ 2019 has also permitted the construction of roads and roads on stilts for defense, strategic, and public utility purposes in mangrove buffer zones and other CRZ-I A areas[24], an act that was previously permitted only in intertidal areas that were not ecologically sensitive[25] (now classified as CRZ-I B). Mangrove buffer zones support a large number of plant and animal species, and the construction of roads in such areas may disrupt local ecosystems. Destruction of mangrove zones for such purposes should be strictly discouraged, as mangroves continue to be one of the most effective means of coastal defense.[26]

For example, of the 2 villages situated close to each other in the Eastern Samar Region of the Philippines, the one surrounded by mangroves survived the impact of the devastating Typhoon Haiyan, while the one situated beyond the limits of the mangrove forest was completely destroyed.[27] Similarly, studies of various catastrophic coastal events indicate that cost effective coastal protection measures such as mangroves go a long way towards protecting and preserving

[23]Jonathan Nash, 'Eco-tourism: Encouraging conservation or adding to exploitation' (PRB, 1 April 2001) <https://www.prb.org/resources/eco-tourism-encouraging-conservation-or-adding-to-exploitation/#:~:text=Jonathan%20Nash&text=At%20the%20nexus%20of%20population,ecological%20conservation%20and%20economic%20development.> accessed 10 October 2023

[24] ¶ 5.1.1 (ii), G.S.R. 37(E) dated 18th Jan. 2019

[25] ¶ 8.I.(ii)(g) , S.O.19(E) dated 6th Jan. 2011

[26] HL Koh and Others, 'Mangrove Forests: Protection Against and Resilience to Coastal Disturbances' (2018) 30 (5) Journal of Tropical Forest Science <https://www.jstor.org/stable/26514436> accessed 5 November 2023

[27]Matikas Santos, 'How a forest of mangroves saved a village from 'Yolanda'' (Inquirer.Net, 6 November 2014) <https://newsinfo.inquirer.net/649122/how-a-forest-of-mangroves-saved-a-village-from-yolanda> accessed 1 December 2023

the coastline.[28]

They significantly reduce coastal risk by mitigating the amount of damage suffered due to waves, large storms, tsunamis, coastal erosion and sea level rise.[29] They also increase siltation, or sediment settlement along the belts, thus contributing to coastal accretion. From an economic perspective, they help reduce construction and maintenance costs of revetments and levees by reducing their run-up and overtopping heights (as they play a role in reducing wave height and act as natural buffers).[30] Moreover, given the large number of problems associated with creating new mangrove forests, all efforts must be taken to preserve and expand existing ones.[31]

Removing existing safeguards and shifting regulated activities from less eco-sensitive zones to an ecologically fragile zone to promote development

The CRZ 2019 permits land reclamation in CRZ-I B for foreshore and waterfront facilities, defense, strategic and security purposes, erosion control measures, generation of power by non-conventional energy sources, receipt and storage of petroleum products and LNG, modernization of fish-processing units, waste treatment facilities, mining of atomic minerals, etc.[32] None of these activities were permitted in CRZ-I under the CRZ 2011. For example, construction of facilities for receipt and storage of petroleum products and LNG, generation of power through use of non-conventional sources, facilities associated with desalination plants were earlier permitted not in CRZ-I, but in CRZ-II,[33] and CRZ-III[34] under the CRZ 2011. By permitting several activities that were previously prohibited in CRZ-I, and by shifting permissible activities from less ecologically sensitive zones to a critically vulnerable zone it is evident that the CRZ 2019 seeks to prioritize economic development over environmental concerns. The CRZ 2019 has also removed certain safeguards that were present in the CRZ 2011, such as conducting a

[28] Siddharth Narayan and others., 'The Effectiveness, Costs and Coastal Protection Benefits of Natural and Nature-Based Defences' (2016) 11(5) PLOS ONE <https://doi.org/10.1371/journal.pone.0154735> accessed 26 November 2023

[29] Mark Spaldin and others, 'Mangroves for Coastal Defence: Guidelines for Coastal Managers & Policy Makers'. (Wetlands International and The Nature Conservancy, 2014) accessed 20 December 2023

[30] H.J. Verhagen and Tran Thi Lo, 'The Use of Mangroves in Coastal Protection: In the 8th International Conference on Coastal and Port Engineering in Developing Countries' (COPEDEC 2012, IIT Madras, Chennai, India, 20-24 February 2012) accessed 20 December 2023

[31] Ibid.

[32] ¶ 5.1.2 (i), G.S.R. 37(E) dated 18th Jan. 2019

[33] ¶ 8.II , S.O.19(E) dated 6th Jan. 2011

[34] ¶ 8.III , S.O.19(E) dated 6th Jan. 2011

Social Impact Assessment (SIA) prior to setting up facilities for generation of power and desalination plants.[35]

What is a Strategic Project? Left open for interpretation

The CRZ 2019 has also left terms such as 'strategic projects' undefined. This can be exploited to allow for excessive land reclamation from the sea in CRZ-I B, or construction of roads by clearing mangrove belts and other areas in CRZ-I A. In other words, this provision creates room for activities that would have otherwise been illegal to be permitted under the garb of it being "strategic". A clear definition of what projects can be considered 'strategic' or a list specifying the same ought to be issued at the earliest to prevent abuse of this provision.

Sagarmala Programme

The Sagarmala Programme launched by the Ministry of Ports, Shipping and Waterways in 2015 aims to promote port modernisation, port connectivity enhancement, and port-led industrialisation along Indian coasts.[36] To achieve these objectives, plans have been drawn to establish 14 Coastal Economic Zones (CEZs)[37] and over 25 industrial clusters dealing with petrochemicals, steel, cement, automotive, electronics, apparel, etc.[38] It also intends to develop an extensive "freight-friendly" coastal road network to improve connectivity and to tide over traffic woes. Experts contend that the CRZ 2019 may have been notified to facilitate government projects such as the Sagarmala Programme; it being a "strategic project" means it can now avail clearance to proceed with land reclamation from the sea and construct roads in CRZ-I areas.[39]

Construction and expansion of such a large number of ports pose severe threats to the environment and local communities. Port operations have been known to significantly lower

[35] ¶ 3(i)(c) , S.O.19(E) dated 6th Jan. 2011
[36] Ministry of Shipping, Govt. of India, *Final Report for Sagarmala (Vol.I)* (2016)
[37] Ministry of Shipping, Govt. of India, *Final Report for Sagarmala (Vol.II)* (2016) 85
[38] Id. at 4-5.
[39] Ishan Kukreti, 'Coastal Regulation Zone Notification: What development are we clearing our coasts for' (Down to Earth, 4 February 2019) <https://www.downtoearth.org.in/coverage/governance/coastal-regulation-zone-notification-what-development-are-we-clearing-our-coasts-for-63061> accessed 10 December 2023

water quality, harm marine life, destroy habitats, and cause air and water pollution.[40] They also accelerate rates of coastal erosion, place the health and livelihoods of fisher communities at stake, and may result in their displacement.[41] Evidently, the CRZ 2019 is not equipped with the tools necessary to deal with the aftermath of the projects sanctioned under its clauses.

Experts have also noted that as several Indian ports are currently underutilised, there exists no need to construct so many new ones as envisioned under the Sagarmala Project.[42] Efforts must be made to better utilise existing ports' import-export capacity and prevent the construction of unnecessary coastal infrastructure deemed permissible under the CRZ 2019.

The Mumbai Coastal Road Project: A Case Study

The CRZ 2011 was amended on the 30th of December 2015, to pave way for coastal road projects. It ultimately permitted land reclamation and clearance of mangroves for construction of roads in exceptional cases on recommendation by the regional Coastal Zone Management Authority.[43]

Consequently, a proposal for the construction of a coastal road from Princess Street Flyover to Worli end of Sea Link in Mumbai (both north and south portions) received CRZ clearance on 11th May, 2017, after being scrutinized by an Expert Appraisal Committee (EAC). The project spans CRZ-I B, II, III, and IV A, and according to the documents submitted by the project proponent, would involve no destruction of mangroves and forests. Certain sources, however, report that close to 33.17 hectares of reserved mangroves would be destroyed to construct the northern portion of the road alone.[44] The project also involves large-scale land reclamation from

[40] United States Environmental Protection Agency, 'Ports Primer: 7.1 Environmental Impacts', <https://www.epa.gov/community-port-collaboration/ports-primer-71-environmental-impacts>

[41] Special Correspondent, 'Sagarmala Project will hurt fishers' (The Hindu, 28 July, 2017) <https://www.thehindu.com/news/national/tamil-nadu/sagarmala-project-will-hurt-fishers/article19376274.ece> accessed 14 January 2024

[42] Pavan Kumar H, 'Sagarmala project: Do we really need more ports?' (The Deccan Herald, 12 June 2022) <https://www.deccanherald.com/india/sagarmala-project-do-we-really-need-more-ports-1117395.html> accessed 16 January 2023

[43] S. O. No. 3552(E) dated 30.12.2015

[44] Badri Chatterjee, 'Coastal Road project: Mumbai to lose mangrove cover equivalent to 4 Oval Maidans'(Hindustan Times, 29 May, 2017) <https://www.hindustantimes.com/mumbai-news/coastal-road-project-mumbai-to-lose-mangrove-cover-equivalent-to-4-oval-maidans/story-H5mCqmfPB1jVO5FxuCKXOL.html> accessed 16 November 2023

intertidal zones. This will lead to changes in land use and local topography (since close to 90 hectares of land is to be reclaimed to complete just the south portion of the project).[45]

The coastal road project, which was proposed to combat Mumbai's traffic problem, has also been heavily criticised by urban city planners and conservationists for disregarding sensible transport solutions and promoting private transport within the city.[46] The Report of the Joint Technical Committee (JTC) justifying the need for construction to decongest the city was drawn from outdated baseline data against the instructions of the MOEFCC.[47] It had, however, failed to consider viable alternate transport solutions and the effects of such alternatives in decongesting the city, such as a metro line spanning 246km, which had already received approval and commenced construction.

Despite concerns raised by NGOs regarding the destruction of mangroves, loss of local eco-systems, and shortage of space in Mumbai to compensate for such loss by planting the requisite amount of mangroves, the EAC, on the basis of the clarifications and information provided by the project proponent alone, that there were no mangroves in the area proposed for construction, granted CRZ clearance.[48] When NGOs pointed out how destruction along the coast of Mumbai would rob the city of natural protection from cyclones and coastal flooding, the EAC stated that the problem would be remedied through the construction of sea walls, a 'hard' protection measure that is neither practical nor cost efficient in the long run.[49] Sea walls require periodic overtopping due to the rise in sea levels and coastal erosion. This will increase costs and resource consumption, as these stones are often sourced from distant regions. Seawalls are also known for obstructing natural underground drainage, thus leading to coastal flooding.[50] They are more

[45]https://environmentclearance.nic.in/auth/FORM_A_PDF.aspx?cat_id=IA/MH/MIS/62969/2017&pid=New

[46] Meenaz Kakalia, 'Supreme Court Must Reconsider its Stand on Mumbai's Coastal Road Project due to Climate Change and rising Sea Levels' (The Leaflet, 10 October 2020) <https://theleaflet.in/supreme-court-must-reconsider-its-stand-on-mumbais-coastal-road-project-due-to-climate-change-and-rising-sea-levels/> accessed 20 November 2023

[47]Comptroller and Auditor General of India, Govt. of India, Report No.4 Of 2022 - Performance Audit On Conservation Of Coastal Ecosystems (2022) 15

[48] Ministry of Environment, Forests and Climate Change, *Minutes of the 168th Meeting of Expert Appraisal Committee for Projects Related to Coastal Regulation Zone* (17th March 2017)

[49] Worli Koliwada Nakhwa Matsya Vyavasay Sahkari Society Ltd. v. Municipal Corporation of Greater Mumbai, High Court of Bombay (unreported) ¶ 32-34

[50] Sabah Virani, 'How can Mumbai get more public spaces?' (Citizen Matters, 17 September 2021) <https://mumbai.citizenmatters.in/how-mumbai-can-get-more-public-spaces-25857> accessed 20 November 2023

prone to failure as they can be easily overwhelmed by various natural factors.[51]

When the above issues were raised through a PIL filed before the Bombay High Court, the Court deemed the amendment to be valid, as there existed a need to afford government authorities and other relevant parties a certain amount of leeway to respond to contingencies, cases of extreme hardship, to plan projects to further public interest and to prevent greater hardship.[52]

Furthermore, the Court clearly stated that an 'exceptional case' would entail there being a "dying need of the society" and that projects under this section should be undertaken only after exhausting all alternative options and conducting deep and pervasive environmental impact assessments.[53] Thus, the impugned amendment was held to be within existing legal policy, as the term 'exceptional cases' indicated that this provision was to be used sparingly.[54]

A report drawn by the CSIR-NIO (National Institute of Oceanography) in January 2016 indicates that the project would lead to "long term-degradation of sensitive and essential breeding and nursery habitats for coastal and marine organisms"[55] and destroy habitats of marine flora and fauna. Environment Impact Assessments conducted by STUP Consultants Pvt. Ltd. and Ernst & Young Pvt. Ltd., under the directions of the MCGM, indicate that the reclamation will have several indirect effects on marine ecology by reducing oxygen levels, causing nutrient imbalances, increasing concentration of suspended solids, etc.[56] The EAC in granting CRZ clearance has failed to undertake adequate scientific studies and has overlooked several critical issues, that private consultants were able to identify. The Court itself noted that apart from the EIA conducted by the consultants, all other reports published by the authorities failed to undertake a complete and exhaustive study of the data required to accurately assess the environmental impact of the project. This case thus highlighted the importance of using current

[51] Camille Parmesan and others, 'Terrestrial and Freshwater Ecosystems and Their Services. In: Climate Change 2022: Impacts, Adaptation and Vulnerability' (Contribution of Working Group II to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change 310 (Pörtner eds.) Cambridge University Press, Cambridge, UK and New York, NY, USA 2022)
[52] Worli Koliwada Nakhwa Matsya Vyavasay Sahkari Society Ltd. v. Municipal Corporation of Greater Mumbai, High Court of Bombay (unreported) ¶ 133
[53] Id. at ¶ 145
[54] Id. at ¶ 135
[55] Id. at ¶ 152
[56] Id. at ¶ 154

data to make decisions and mandating comprehensive impact assessment studies prior to allowing clearance. Due to the aforementioned reasons, the High Court of Bombay quashed approval granted by the EAC, MCZMA, and the final approval granted by the MOEFCC, thus halting a project that was set to have a devastating impact on the environment.

The Supreme Court, however, through its Interim Order dated 17th December 2019, set aside the order of the Bombay High Court to allow for the construction of the coastal road project. It later modified its order to allow for other developmental activities in the land reclaimed, as only a portion of the reclaimed land was earmarked for road construction.[57] While doing so, it remarked that construction projects cannot be stalled for the sake of climate change when developed countries are more responsible for climate change and its consequences.[58] The Bench further opined that it is in the interest of civilisation to allow for greater urbanisation and that courts could, therefore, not intervene to restrict development to prevent climate change.[59]

The Hon'ble Supreme Court has rightly observed that development in developing countries is the need of the hour. This, however, should not be achieved at the cost of causing severe damage to the environment. The Supreme Court's decision to allow for construction was made despite there being an inadequate assessment of the social and environmental impacts of the project. No studies were undertaken to evaluate the reclaimed lands' assimilative capacity or that of the surrounding regions to sustain such modernisation. Reports from reputed agencies assessing the extent to which the environment would be damaged and flagging indirect long-term effects of such construction were also discounted while arriving at a decision.

[57] Court No.2, Record of Proceedings, Supreme Court of India, Petition(s) for Special Leave to Appeal (C) No(s).17471-17476/2019, (Arising out of impugned final judgment and order dated 16-07-2019 in WPL No. 560/2019, PIL No. 39/2019, PIL No. 44/2019, PIL No. 40/2019, PIL No. 36/2019 and PIL No. 25/2019 passed by the High Court of Judicature at Bombay),
<https://www.livelaw.in/pdf_upload/2547320192373857 7order30-sep-2022-438321.pdf>

[58] Abhimanyu Hazarika, 'Wrong to ask developing countries to halt projects citing climate change: SC' (Bar and Bench, 1 October, 2022)
<https://www.barandbench.com/news/wrong-to-ask-developing-countries-to-halt-projects-citing-climate-change-supreme-court#:~:text=The%20Supreme%20Court%20on%20Friday,Koliwada%20Nakhwa%20Matsya%20Vyavasay%20Sahakari> accessed 23 November 2023

[59] Bhadra Sinha, 'Can't stall development over climate change': SC modifies order on Mumbai coastal road project' (The Print, 30 September 2023)
<https://theprint.in/judiciary/cant-stall-development-over-climate-change-sc-modifies-order-on-mumbai-coastal-road-project/1149846/> accessed 24 November 2023

The Supreme Court, in this case, has downplayed the severity of the problem by employing an indifferent approach toward climate change, ignoring the loss of native wildlife and the effects it will have on coastal topography, communities and ecosystems. Its decision to prioritize development over the environment appears to have been made based on a flawed premise, as, in general, such projects have a tendency to overestimate benefits associated with development while underestimating the costs imposed on the environment.[60]

In categorising construction of coastal roads for the sake of alleviating traffic problems to be an "exceptional case", despite it not being a "dying need of society" and in the presence of alternatives, the Court has diluted the essence of the term "exceptional" and thrown open doors for a large number of similar developmental projects. By retaining such a provision under the CRZ 2019, and by setting such precedents, the Court may have increased the probability of CRZ violations occurring under the guise of strategic, defense, or public utility projects of "exceptional" nature. This apathetic approach of the authorities involved can only be described as one of short-sight, and ought to be remedied at the earliest to prevent further transgressions of the law.

Marginal improvements

The CRZ 2011 stated, in general, that projects of the Department of Atomic Energy[61] and installation of weather radars would be permitted in CRZ-I[62], whereas the CRZ 2019 specifies that such projects will be permitted only in CRZ-I B.[63] The CRZ 2011 also permits the construction of the Green Field Airport in Mumbai, schools, dispensaries, etc. in CRZ-I, all of which are not permissible in CRZ-I under the CRZ 2019. Instead, the construction of schools, residential buildings, hospitals, offices, etc. shall be now permitted on the landward side of existing roads in CRZ-II.[64] These provisions of the CRZ 2019 are an improvement over the CRZ

[60] Hussain Indorewala and Shweta Wagh, 'Why Maharashtra's latest plan for Mumbai coastal road is a disaster' (Scroll.in, 28 August 2015) <https://scroll.in/article/750661/why-maharashtras-latest-plan-for-mumbai-coastal-road-is-a-disaster) accessed 3 December 2023

[61] ¶ 3(i)(b), S.O.19(E) dated 6th Jan. 2011

[62] ¶ 8.I(i)(d), S.O.19(E) dated 6th Jan. 2011

[63] ¶ 5.1.2 (xi), G.S.R. 37(E) dated 18th Jan. 2019

[64] ¶ 5.2 (ii), G.S.R. 37(E) dated 18th Jan. 2019

2011, as by specifying that certain activities are to be carried out only in CRZ-I B, the Notification prevents such activities from taking place in CRZ-I A.

Changes within the CRZ-II:

An attempt to commercialise coasts: CRZ 2019 allows development for tourism projects and construction of tourist facilities in CRZ-II, prohibited under CRZ 2011

All activities that are permitted in CRZ-I B shall be permitted in CRZ-II. The CRZ 2019 has added in its list of activities permitted in CRZ-II, two new clauses that raise cause for concern.

It now allows for buildings to be constructed with an increased Floor Area Ratio or Floor Space Index in the CRZ-II, as compared to the CRZ 2011 (as they will be now subject to prevailing norms). This allows developers to construct larger buildings and tourist facilities near the coast.[65]

It has also continued to commercialise coasts by permitting development of vacant plots in CRZ-II in order to construct beach resorts, hotels and other development projects geared towards increasing tourism in coastal areas.[66] It also permits construction of 'temporary tourism facilities' in accordance with tourism plans that have been formulated.[67] Under the CRZ 2011, the same was to be permitted in CRZ-III (areas other than the NDZ), not CRZ-II. Several studies have indicated that tourism may have a negative effect on coastal environment, due to overcrowding, improper disposal of sewage, boat-generated waste, beach erosion, over-fishing, loss of flora-fauna, destruction of wildlife habitat, increase in air and water pollution, unsustained consumption of water and energy, exploitation of natural resources, disruption of natural patterns (in terms of behaviour, breeding and feeding of marine species) etc.[68] The damage caused to beaches in Goa, the Gulf of Mannar, the Caspian Sea region, and the Caribbean due to tourism

[65] Ishan Kukreti, 'Coastal Regulation Zone Notification: What development are we clearing our coasts for' (Down to Earth, 4 February 2019) <https://www.downtoearth.org.in/coverage/governance/coastal-regulation-zone-notification-what-development-are-we-clearing-our-coasts-for-63061> accessed 10 December 2023

[66] ¶ 5.2 (v), G.S.R. 37(E) dated 18th Jan. 2019

[67] ¶ 5.2 (v), G.S.R. 37(E) dated 18th Jan. 2019

[68] S. Zahedi., 'Environmental Problems in Coastal Regions VII, Tourism Impact on Coastal Environment' (WIT Press 2008) 45-57 accessed 1 December 2023

indicate the extent to which tourists can damage coastal environments.[69]

More recent studies, however, seem to indicate that tourism may promote environmental sustainability in tourist areas.[70] To promote sustainable tourism, the state ought to encourage tourists, locals and other entities in that area to conduct business in an environmentally and socially responsible manner. Thus, to foresee and prevent adverse consequences that may arise due to coastal tourism, there is a need to not only comprehensively plan but also mandate Social and Environmental Impact Assessments (SEIAs) prior to allowing tourism in CRZ Zones. [71]

Changes within the CRZ-III

Minor changes in activities permitted within the NDZ (primarily to promote tourism and to preserve rights of local communities)

Similarly, all activities permitted in CRZ-I B shall also be permitted in CRZ-III according to the CRZ 2019. The CRZ 2019 distinguishes between regulation of permissible activities in the NDZ and CRZ-III areas beyond the NDZ.

In the NDZ it prohibits construction except for those in relation to existing authorized structures or dwelling units of traditional coastal communities.[72] The CRZ 2011 imposed a similar condition, and this provision remained unchanged.

The CRZ 2019 also permits agriculture and allied activities, construction of facilities required for local communities, temporary tourism and associated facilities, dispensaries, schools, waste disposal, and mining of atomic minerals in the NDZ, all of which were permitted under the CRZ 2011. The key differences are that the mining of 'rare' minerals was also permitted in the NDZ within CRZ-III under the CRZ 2011 and that there was no mention of facilities for tourists under

[69] Ibid.

[70]Chien-Ming Wang and Tsung-Pao Wu, 'Does tourism promote or reduce environmental pollution? Evidence from major tourist arrival countries' (2022) 24 Environment, Development and Sustainability 3334-3355 <https://doi.org/10.1007/s10668-021-01568-w> accessed 1 December 2023

[71]T.P. Matias and others, 'A systemic environmental impact assessment on tourism in island and coastal ecosystems' (2022) 44 Environment Development <https://doi.org/10.1016/j.envdev.2022.100765> accessed 2 December 2023

[72] ¶ 5.3 (ii)(a), G.S.R. 37(E) dated 18th Jan. 2019

the same. Specifying the nature of rare minerals to be mined in the CRZ-III (only atomic minerals) prevents abuse of this provision. Despite this, such mining should be allowed only after considering viable alternate options, such as importing or mining in areas other than the CRZ.

Increasing scope for shoreline mining and construction in CRZ-III

With respect to regulated activities beyond the NDZ but within the CRZ-III, the CRZ 2019 permits land development for the construction of beach resorts, hotels, dwelling units for local communities, drains and sewers. Provisions for the same were derived from the CRZ 2011 and remain unchanged. However, as the NDZ has been reduced, the construction of hotels, resorts, and other tourist facilities is now permitted extremely close to the shore, without adequate buffer area. [73]

The Shailesh Nayak Committee, on considering the Gujarat Government's request to relax regulation of limestone mining along coasts (to aid certain well-established cement industries situated in that area),[74] recommended that limestone reserves along the coast be used for developmental purposes with appropriate safeguards to preserve groundwater quality and to prevent coastal erosion.[75] The CRZ 2019 accordingly permits limestone mining in specific areas within CRZ-III (subject to certain environmental safeguards). This was permitted despite the Committee noting that "indiscriminate mining and dredging have destroyed the benthic flora and fauna" and that "such activities have affected the coastal processes, leading to accretion, deposition, and change in hydrodynamics and morphodynamics."[76] Such an observation was made when limestone mining was prohibited within the CRZ area, and the Committee deemed there to be a dire "need to protect and regulate the activities that are detrimental to the integrity of the water bodies and their bed."

[73] Ishan Kukreti, 'Coastal Regulation Zone Notification: What development are we clearing our coasts for' (Down to Earth, 4 February 2019) <https://www.downtoearth.org.in/coverage/governance/coastal-regulation-zone-notification-what-development-are-we-clearing-our-coasts-for-63061> accessed 10 December 2023

[74] Dr.Shailesh Nayak Committee, *Report of the Committee to Review the Issues Relating to the Coastal Regulation Zone Notification 2011* (2015) 25

[75] Id. at 82

[76] Id. at 85

Limestone mining entails reclamation of land, clearing vegetation, population displacement, road construction, establishment of processing facilities and other site preparation processes necessary for mine development. The deposits are extracted through drilling and blasting of ores and transported to other facilities where they undergo processing. The explosions so caused have been proven to cause erosion, loss of wildlife habitat and biodiversity, lower water quality, etc., due to resulting high noise levels and vibrations.[77] Now that limestone mining along the shoreline has been regularised, the toll that it will take on coastal health and stability is unimaginable. It will adversely impact not only the fragile ecosystems surrounding the mine area but also nearby coastal communities.

The rights of local communities have not been adequately protected

The CRZ 2019 also introduces several additional provisions aimed solely towards increasing economic development in that area. It authorises local communities to facilitate tourism by converting their homes into homestays.[78] This, combined with various other provisions seeking to facilitate tourism in CRZ areas, may either benefit them or eventually turn them wholly reliant on tourism and subject to the whims of a tourist economy.

A detailed Social Impact Analysis should, therefore, be carried out to analyse the extent to which the rights of local fishing communities are affected, as their needs have been repeatedly sidelined. For example, coastal projects such as the Turtle Interpretation Centre in Odisha, which was constructed with the promise to provide long-term benefits of employment and better infrastructure, robbed villagers of coastal commons and their customary right to enter and collect firewood in that region.[79] Again, in Odisha, a waste disposal plant was set up without consulting the locals or receiving the approval of the State Pollution Control Board on common land under the pretext of aiding local communities. This plant was later found to reduce fish catch in a nearby river, thereby affecting their right to livelihood. These are merely two of numerous

[77]Harsh Ganapathi and Mayuri Phukan, 'Ch 8: Environmental Hazards of Limestone Mining and Adaptive Practices for Environment Management Plan' in R.M. Singh (eds), *Environmental Processes and Management* (Springer Cham 2020) 121-134

[78] ¶ 5.3 (iii)(c), G.S.R. 37(E) dated 18th Jan. 2019

[79]Biswa Swaroop, 'How Coastal Regulation Zones Can Help India's Fishers Reclaim Coastal Commons' (The Bastion, 14 July 2020) <https://thebastion.co.in/in-depth/how-coastal-regulation-zones-can-help-indias-fishers-reclaim-coastal-commons/> accessed 4 December 2023

instances wherein decisions and changes have been made without the knowledge or consent of coastal communities ultimately to their detriment.[80] Therefore, while introducing development at a local level, community participation ought to be made mandatory, and their rights ought to be adequately safeguarded.

Right to coastal commons

Of the several rights local coastal communities are entitled to, the right to access coastal commons may be central to securing their socio-economic well-being and their continued protection from the onslaught of natural hazards that batter the coast. The right to coastal commons entails unhindered access to shared coastal resources and their subsequent use by local and other communities to derive various socio-economic benefits. It goes without saying, that the usage of common coastal resources must be sustainable so as to allow for long-term enjoyment of benefits.

Certain government projects hinder their access to essential resources, obstruct traditional practices and infringe upon their Right to Livelihood. For example, the Worli Koliwadas, a traditional artisanal fishing community, is one such group of urban indigenous people who will be adversely affected by changes in the health of coastal ecosystems, breeding spaces for lobsters, tiger prawns and fish patterns.[81] In a recent interview, representatives of the Koli community observed that nearly 80% of fish species have decreased due to mangrove destruction for construction purposes and that increasing costs associated with getting a profitable fish catch have forced fisherfolk to either venture further into the sea, amidst challenging weather conditions or to look for other employment opportunities.[82]

All traditional fishermen of the Konkan coast close to Mumbai have been left in a lurch on account of their daily catch being halved by the ongoing coastal road construction in Mumbai .[83]

[80] Ibid.
[81]Synne Movik and others., 'Claiming space: Contested coastal commons in Mumbai' (2023) 144 Geoforum <https://doi.org/10.1016/j.geoforum.2023.103805> accessed 10 December 2023
[82] Ibid.
[83]Prayag Arora-Desai, 'Coastal Road project cuts incomes of poor fishers by half: TISS study' (Hindustan Times, 4 April 2023)
<https://www.hindustantimes.com/cities/mumbai-news/mumbai-coastal-road-project-impacts-fisherfolk-livelihoods-tiss-report-finds-101680548813900.html> accessed 10 December 2023

Though the Brihanmumbai Municipal Corporation (BMC) agreed to compensate fishermen for the loss faced during the course of construction[84], their plight post completion of the project remains unconsidered, as the project is set to have a devastating long-term impact on breeding grounds and habitats of fish and other marine organisms.

Efforts should be made to protect the rights of coastal communities to access common coastal resources from which local communities and other stakeholders derive benefits, both ecological and modern. Mandating the conduct of Social Impact Assessments prior to undertaking any coastal project will increase public participation of local communities and help better identify the rights and concerns of all stakeholders.

Similarly, enacting a separate legislation with the sole object of expressly recognising, guaranteeing, and facilitating the rights and traditions of local and indigenous coastal communities or incorporating within the existing CRZ framework additional measures to ensure access to coastal resources may help safeguard their interests. Additionally, an act detailing the rights of local residents (including fishermen) and exemptions granted may help resolve ambiguities regarding the construction of dwelling units and usage of resources in coastal areas. It may help safeguard and strengthen their rights as disadvantaged local communities have historically been proven to bear the brunt of negative environmental and sociocultural impacts compared to other communities, such as tourists and local elites.[85]

Development of Airports in wastelands or future wetlands?

The CRZ 2019 has also authorised the development of airports in "wastelands and non-arable lands" within the CRZ-III.[86] Such provisions find no place in the CRZ 2011. It only permits the development of the Green Field Airport in Mumbai, which had received approval before the publication of the Notification.

[84]Jeet Mashru, 'Coastal Road Project (South): BMC starts giving compensation, pays ₹15.4 crore to 170 fishermen' (Hindustan Times, 15 September 2023) <https://www.hindustantimes.com/cities/mumbai-news/coastal-road-project-south-bmc-starts-giving-compensation-pays-15-4-crore-to-170-fishermen-101694717978980.html> accessed 13 December 2023

[85]Tazim Jamal & Dianne Dredge, 'Tourism and Community Development Issues' in R. Sharpley & D. Telfer eds. (2 ed.), *Tourism and Development: Concepts and Issue*s (Channel View Publications 2014) 178-204

[86] ¶ 5.3 (v), G.S.R. 37(E) dated 18th Jan. 2019

Given the location of the lands deemed to be a wasteland or non-arable, efforts ought to be made first to use such land in a manner that benefits the environment, and only then for other purposes. Since wetlands (both coastal and inland) are often regarded to be wastelands, over 64% of the world's wetlands have been destroyed since the 1900s.[87] Wetlands improve water quality, aid in carbon sequestration, protect local communities from coastal flooding and erosion, absorb shocks from storm surges, and help set up commercial fisheries, and therefore must be used to combat climate change and other factors that threaten coastal stability rather than being repurposed.[88]

For example, China, in its Sloping Land Conversion Programme (SLCP) has relied on local communities and rural households to implement the world's largest reforestation program. While its primary goal might be to increase tree cover, it also has the additional "soft goal" of afforesting Chinese wastelands,[89] which would have otherwise been used for agricultural or developmental purposes. A similar method can be employed in India to convert wastelands into wetlands. By combining 'volunteerism' with scientific methods to revive non-arable lands, the state can make use of a 'soft coastal protection measure' to conserve existing coasts and native wildlife.

Changes within the CRZ-IV

The CRZ 2019 permits and regulates fishing and related activities undertaken by local communities.[90] It also allows land reclamation for all purposes mentioned under the list of permissible activities in case of CRZ-I B. The CRZ 2011 also permits traditional fishing and allied activities by local communities.[91] It however makes no mention of land reclamation or development in that area. It instead states that it will regulate those activities that negatively impact the sea and tidal influenced water bodies. It specifically states that no untreated waste,

[87] 'Wetlands or Wastelands?' (The Corbett Foundation, 2 February, 2017) <http://corbettfoundation.org/articles/2017/02/02/wetlands-or-wastelands/> accessed November 25 2023

[88] Mariana Kendall, *From Wastelands to Wetlands: The Story of Coastal Wetlands in the United States* (2023)

[89] Michael T. Bennett, 'China's sloping land conversion program: institutional innovation or business as usual?' (2008) 65(4) Ecological Economics 699-711

[90] ¶ 5.4 (i), G.S.R. 37(E) dated 18th Jan. 2019

[91] ¶ 8.IV , S.O.19(E) dated 6th Jan. 2011

ship washes, fly ash or solid waste shall be dumped in such area and that a plan ought to be formulated to treat sewage produced by coastal cities. Pollution from mining, exploration and shipping shall also be regulated. Such repeated emphasis on control of pollution in such areas, and comprehensive plans that were to be created to tackle such issues in CRZ-IV indicates the CRZ 2011's commitment towards restricting pollution. The CRZ 2019 does not specify such pollution control measures in the CRZ-IV. Given the number of additional development activities that were deemed permissible under the CRZ 2019, provisions to ensure a greater degree of care ought to have been added to prevent environmental degradation. Despite this no study has been conducted to determine the capacity of the CRZ to accommodate such increased developmental activities or their projected impact, both on the environment, and on local communities.[92]

Impact of the CRZ 2019

Subsequent Amendments

Post-facto clearance for illegal constructions

The MOEFCC vide its Office Memorandum dated 19.02.21 laid down procedure for dealing with violation of CRZ norms where mandatory CRZ clearance was not obtained prior to carrying out permissible activities. The memorandum was a result of repeated requests from state governments for considering proposals for projects that were commenced without obtaining clearance due to inadequate knowledge of the CRZ Norms and other factors. The MOEFCC also refers to the order of the Supreme Court in the case of Alembic Pharmaceuticals Ltd. v. Rohit Prajapati & Ors., where the court held that the closure of industries was unwarranted, that the industry should pay compensation for any damage caused to the environment and that a future proposal for environmental clearance should be evaluated independently, without being influenced by any actions taken for alleged violations of environmental laws.[93] The MOEFCC has interpreted this order to mean needing a framework to appraise violations of CRZ 2019 that

[92] Ishan Kukreti, 'Coastal Regulation Zone Notification: What development are we clearing our coasts for' (Down to Earth, 4 February 2019) <https://www.downtoearth.org.in/coverage/governance/coastal-regulation-zone-notification-what-development-are-we-clearing-our-coasts-for-63061> accessed 10 December 2023

[93] (2020) 17 SCC 157

arise due to not obtaining prior clearance, and one that allows for post-facto clearance.

Para 4 states that constructions that have commenced prior to obtaining clearance can obtain prospective/ post-facto clearance, provided the project proponent approaches the relevant Coastal Zone Management Authority (CZMA) with the required documents. On assessing the damage caused, the CZMA shall give recommendations drawn from an Annexure that specifies activities under Compensatory Conservation Plan (CCP) and a Community Resource Augmentation Plan (CRAP).

The MOEFCC's faulty interpretation of the Supreme Court's decision in the Alembic Pharmaceuticals case has led to a perverse application of the 'polluter pays principle'. This was done despite the court in the supra case clearly stating that "ex post facto clearances are unsustainable in law and void"[94]. Similarly in Common Cause v. Union of India the Supreme Court has clearly mentioned that the concept of post facto or retrospective clearance is alien to environmental jurisprudence.[95]

While the regulated activities under the CRZ require prior clearance, there have been several instances where clearance has been granted post-completion of a project, despite it being violative of the procedure established by law. [96]Prima facie, there appear to be several problems with such a law. It creates a loophole that allows for activities that damage the environment to be carried out without prior approval and the ability to avail clearance at a later date, at which point an order directing authorities to scrap the development project will be unlikely as the harm caused to the environment due to its demolition may exceed harm caused by project retention.

Moreover, the memorandum undermines the precautionary principle by regularising violations

[94] Naveen Kumar, 'Story of the Forgotten Mandamus: The Opportunity to Fulfill the Need of a Regulator' (SCC Online, 1 August 2022) <https://www.scconline.com/blog/post/2022/08/01/story-of-the-forgotten-mandamus-the-opportunity-to-fulfil-the-need-of-a-regulator/> Accessed 11 December 2023

[95] (2017) 9 SCC 499

[96] Lianne D'Souza & Jayanti Jaya, 'Coastal Regulation Zone Management and the Grant of Post Facto Clearances: The Case of Vanashakti & Anr. V. UOI & Ors.' (CEERA-NLSIU, 18 May 2021) <https://ceerapub.nls.ac.in/coastal-regulation-zone-management-and-the-grant-of-post-facto-clearances-the-case-of-vanashakti-anr-v-uoi-ors/#_ftn2> accessed 13 November 2023

and condoning callous behaviour. While the law may seek to give wrongdoers an opportunity to rectify the situation by themselves, it may regularise illegal constructions, discourage developers from being diligent in conducting EIAs, and disincentivise them from complying with regulatory procedures. The law also contemplates project proponents voluntarily approaching the CZMA to obtain clearance, which is unlikely to happen in cases of willful violations.

The Bombay High Court in Vanashakti & Anr. v. Union of India & Ors. has stayed the grant of post-facto clearance for a construction project in CRZ area without environmental clearance.[97] The same has now been challenged by the Centre before the Supreme Court through a Special Leave Petition.[98]

An attempt to exempt exploratory drilling from the scope of CRZ Regulation

The MOEFCC vide its draft notification dated 01.11.2021, sought to exempt oil exploration, extraction and associated activities from obtaining prior CRZ clearance. If so permitted, exploratory drilling may further damage the environment by polluting water (surface and underground), air, soil etc.[99] Such an exemption will further dilute the precautionary approach, and promote the polluter-pays principle which causes little harm to large corporations in charge of such activities. Such a law, if ratified, will pose a serious threat to the environment and cause irreversible damage, and thus all efforts must be taken to prevent unsustainable exploitation of natural resources.[100] Fortunately, the proposed amendment did not secure the approval of the Lok Sabha.

Issue of accountability

The CRZ 2019 neither specifies any timeline for the preparation of a Coastal Zone Management Plan (CZMP), nor does it set any definite date within which the plans must be formulated. It

[97] PIL No. 8540 of 2021, High Court of Bombay

[98] Swati Deshpande, 'Centre moves SC against HC stay on post facto CRZ nod' (The Times of India, 24 September 2023)<https://timesofindia.indiatimes.com/city/mumbai/centre-moves-sc-against-hc-stay-on-post-facto-crz-nod/articleshow/103898199.cms?from=mdr> accessed 25 November 2023

[99] Gauri Anand, 'Proposed amendments to the CRZ Notification, 2019 and its implications' (The Leaflet, 24 December 2021) <https://theleaflet.in/proposed-amendments-to-the-crz-notification-2019-and-its-implications/> accessed 15 October 2023

[100] M.S. Swaminathan Committee, *Reportof the Committee to Review the Coastal Regulation Zone Notification 1991* (2005) 91

merely mentions that plans must be either revised or updated at the "earliest" and submitted to the MOEFCC for approval. Previous experience indicates that this may not be the best course of action.

The CRZ 2011, for example, failed to set a deadline within which the CZMPs were to be drafted, and in the absence of such deadlines, most states failed to draft and submit any plan for approval. Thus, in the eight years that CRZ 2011 was operative, most coastal states lacked region-specific frameworks for coastal zone management. 'Antiquated' plans using outdated methods of coastal regulation drafted under the CRZ 1991 remained operative in most states and UTs up until 2017, despite the enactment of the CRZ 2011, which called for entirely new means of management.[101] Of the nine coastal states and four Union Territories that were directed to frame plans under the CRZ 2011, only Lakshadweep had submitted its plan by 2017,[102] despite several deadlines being fixed by the NGT. CZMPs under the CRZ 2019 are headed toward a similar fate, with most states continuing to seek extensions for plan completion. For instance, Goa has yet to start the process of preparing its CZMP in accordance with the CRZ 2019 and continues to follow the plan drawn under the CRZ 2011.[103] In the past, it has failed to meet several NGT deadlines since 2018 to finalize its CZMP.[104] Other states are either still in the process of drafting their CZMP according to the CRZ 2019 or have only very recently finished updating their CZMP.

Chapter 6 of the CAG's 'Performance Audit Report on Conservation of Coastal Ecosystems' indicates that there were several inordinate delays in the preparation of CZMPs and that this led to the implementation of investment activities that were not in conformity with India's Integrated Coastal Zone Management Policy. The CAG noted that as plan preparation was delayed, in most cases there was no consonance between the plans eventually passed and the projects

[101] Meenakshi Kapoor, 'There Is Still No Real Coastal 'Planning' in India' (The Wire, 8 August 2023) <https://thewire.in/environment/coastal-planning-czmp-environment-ministry> accessed 26 November 2023

[102] Malavika Vyawahare, 'Lakshadweep is India's only state with a coastal regulation plan to protect its marine ecosystem' (Hindustan Times, 1 August 2017) <https://www.hindustantimes.com/environment/lakshadweep-the-only-indian-state-with-a-coastal-regulation-plan/story-UHSS5vrAHJodrY3DRQYRPI.html> accessed 26 November 2023

[103] The Goan Network, 'Centre not to grant CRZ nod for projects along coastline' (The Goan, 1 November 2023) <https://www.thegoan.net/goa-news/centre-not-to-grant-crz-nod-for-projects-along-coastline/105448.html#:~:text=Goa%20is%20the%20only%20State,Regulation%20Zone%20(CRZ)%20notification> accessed 26 November 2023

[104] 'CZMP caught in high tides', (Herald Publications, 11 September 2022) <https://www.heraldgoa.in/Review/CZMP-caught-in-high-tides/193888> accessed 27 November 2023

undertaken.[105]

This indicates that there exists a need not only to set enforceable deadlines within which the CZMPs must be drafted but also to hold accountable authorities responsible for preparing CZMPS in case of unjustified delays. Should future amendments to update or revise the existing plan be introduced, instead of repeatedly awarding extensions for the completion of the plan[106], the National Coastal Zone Management Authority (NCZMA) must make efforts to ensure that adequate time is given for preparation and that the relevant agency prepares the plan within the given time frame. At the moment, there are no consequences for such delays in preparation and faulty implementation of the plan. If the authorities fail to carry out post-clearance monitoring, overlook illegal constructions within the CRZ, refuse to disclose relevant information, or award clearance while bypassing necessary safeguards prescribed by law, the CRZ 2019 does not prescribe any course of action against them. This has fostered a attitude of complacency amongst agencies involved in preparing and implementing the plan, and there exists a need to curb the same. This can be done by allocating appropriate duties at different levels within the institutional framework,[107] and by penalizing defaulting agencies. Alternatively, better assignment of costs and responsibilities while carrying out development projects and providing incentives to reduce negative impacts may also help increase accountability.

Looking beyond the CRZ 2019? Identifying problems within its institutional framework

The NCZMA, the SCZMA, and District Level Committees (DLCs) were constituted by the MOEFCC to breathe life into Indian coast management policies. Several problems within its institutional framework have further weakened the role of CRZ 2019 as a protector of coasts.

Amongst several other issues, the most pressing may be that of Expert Appraisal Committees (EACs) making key decisions regarding coastal projects with less than half of its members in

[105] Comptroller and Auditor General of India, Govt. of India, Chapter 6 in Report No.4 Of 2022 - Performance Audit On Conservation Of Coastal Ecosystems (2022) 62
[106] Minutes of the 46th Meeting of the National Coastal Zone Management Authority (NCZMA) (2023)
[107] M.S. Swaminathan Committee, *Report of the Committee to Review the Coastal Regulation Zone Notification 1991* (2005) 94-95

attendance as no quorum is specified, and the EAC making recommendations in the absence of domain experts. Other issues include inadequate manpower in SCZMAs to discharge its functions, non-uniform composition of NCZMAs leading to a disjointed approach towards coastal conservation, failures to constitute an adequate number of DLCs and to reconstitute DLCs on term expiry, delay in demarcation of components of the CRZ, delay in preparation of CZMPs, lack of assessment of accuracy levels for maps, lack of digitisation of maps, failure to prepare action plans for protection of Ecologically Sensitive Areas, lack of public outreach etc.[108]

Most of these issues could have been avoided had the Notification mentioned the composition of such authorities, the qualification of its members, the quorum for making recommendations, the need to accord a high degree of importance to the decisions of technical experts, a framework for setting up and managing DLCs, consequences for not fulfilling its functions, etc.

Need to conduct Cumulative Impact Assessments (CIA)

The CRZ 2019 presently requires only EIAs to be conducted to secure clearance for regulated activities. In other words, while assessing the impact and viability of a proposed project, only those factors that will directly harm the environment if the project is allowed and the immediate consequences of the project alone are considered. This approach may no longer be sufficient. Due to the large number of development projects that often occur within quick succession of each other, some within the CRZ and others in nearby areas, Cumulative Impact Assessments need to be conducted.

A CIA evaluates the environmental impact accruing from a project in relation to other activities that have already occurred or are set to occur in a particular area. It assesses the incremental impact of an action when compounded with other past, future or foreseeable activities in the CRZ. This type of assessment evaluates not only large-scale coastal projects but also minor

[108]Comptroller and Auditor General of India, Govt. of India, Chapter 6 in Report No.4 Of 2022 - Performance Audit On Conservation Of Coastal Ecosystems (2022) 62

activities that may have a significant impact over time.[109] Mandating conduct of CIAs will facilitate the precautionary principle, as assessing activities in relation to each other may help foresee the harmful consequences of allowing incompatible activities. For example, while granting permission for setting up industries or other facilities for receipt and storage of petroleum products in areas with limestone-rich reserves, efforts must be made to ascertain whether explosions from future mining operations (which may or may not receive clearance) will affect socio-environmental stability of a particular area. Or, while an individual industry needing foreshore facilities may by itself have a negligible environmental impact, a large number of such industries in close proximity to one another may place a strain on coastal resources. In this manner, CIAs can be utilised to study the cumulative socio-environmental impact of activities occurring in a particular area, or during a set period.

Problems arising out of lack of visible demarcation of coasts

The CAG observed that the lack of visible hazard lines on the ground its use as a tool in local planning. The CRZ 2019 does not mandate visible demarcation of coasts. In the absence of visible demarcation, it will be difficult for local and indigenous communities to discern where one zone ends and the other begins, thereby hindering regional development.

Analysing the CRZ 2019 through the lens of popular environmental-ecological discourses

Of the several popular environmental-ecological discourses that have evolved over time, two remain central to the issues framed for discussion, i.e., the 'Standard View' of environmental management prevalent in capitalist societies and the 'Theory of Ecological Modernisation'. The principles set forth by the above theories can be used to analyse the current nature of the CRZ Notification 2019, possible developments such law will invite, and changes that may be needed to ensure a more robust, more dynamic coast protection policy.

The Standard View Theory

[109] R.K. Burris & Larry Wang Canter, 'Facilitating cumulative impact assessment in the EIA process' (1997) 53(1-2) International Journal of Environmental Studies <https://doi.org/10.1080/00207239708711114> accessed 20 December 2023

The Standard View theory strongly advocates that environmental concerns should not impede economic development and employs an approach that would mean taking action only "after the event" has occurred.[110] This view completely disregards the irreversibility problem and only acknowledges the problem posed by negative externalities, a type of market failure. It does not facilitate preventive or proactive measures seeking to safeguard the environment and is mainly concerned with damage control after the event has taken place. The state, according to this theory, can frame regulations directing firms and other players to internalise costs imposed on the environment only under two circumstances:

1. There should be clear evidence of environmental damage due to market failure, and the damage should be quantifiable

2. The cost of pollution and resource depletion due to a zero-sum trade-off between economic growth and environmental quality must be measured.

The standard view states that the environment can be managed only for the purpose of securing economic efficiency and profit maximisation, and the same are prioritised over environmental concerns.

The Ecological Modernisation Theory

The theory states that all economic activity will eventually harm the environment and that proactive measures are required to protect the environment. It strongly advocates that prevention is better than the cure and that the ad-hoc, fragmented political approach to protecting the environment should be done away with and replaced by a systematic, institutionalised framework for preserving the environment.[111]

At its core, this theory stresses upon the utilisation of socio-technological approaches to cure and prevent environmental problems by incorporating scientific measures in environmental policy

[110] David Harvey, 'The Environment of Justice' in Frank Fischer and Maarten Hajer (eds), *Living with Nature: Environmental Politics as Cultural Discourse* (Oxford, 1999; online edn., Oxford Academic, 1 November 2003), <https://doi.org/10.1093/019829509X.003.0009, accessed 28 July 2023> accessed 20 July 2023

[111] Mohammad Ali, *Sustainability assessment: Context of resource and environmental policy* (Academic Press, 2013)

frameworks.[112] It also states that a plan for sustainable economic development should be framed keeping in mind the rights of future generations, the irreversibility problem, and the findings of scientists with respect to the extent to which human activities impact the environment. This theory promotes a decentralized environment management program that tackles environmental issues at each level. In recent times, ecological modernization has been gaining popularity due to the failure of capitalist systems in managing economic resources.

Ecological Modernisation: The Way Forward

At first glance, extensive preventive measures listed in the notification may lead us to believe that it caters to the theory of Ecological Modernization; however, a more detailed reading of the provisions will indicate that several exceptions have been made to allow development, most being at the cost of irreversible environmental damage (reflecting the Standard View). The CRZ 2019 aims to prevent coastal damage and restore damaged coasts, both of which are essential. However, these measures alone are inefficient in the long run, given rapidly rising sea levels, increased occurrence of natural hazards, increased levels of human activity near coasts, and development of industries along the coast to improve the economy (all of which play a critical role in coastal destruction). The preventive measures listed in the Notification ought to be coupled with measures to simultaneously enhance the state of coasts if the environment is to be effectively protected. The object of the notification should be to identify, assess, and address the cause for coastal deterioration instead of trying to mitigate its impact post-development.

By reducing the amount of area to be classified as CRZ, the CRZ 2019 has successfully exempted certain areas from its provisions. It has also diminished the "No Development Zone", leaving several previously protected areas open for unchecked development. This move favours industries seeking to promote development in highly regulated areas, as they would have otherwise been subjected to a high level of regulatory compliance and environmental safeguards. It follows the Standard View of allowing economic growth, even if it comes at the cost of irreversible environmental harm.

The CRZ 2019 permits road construction, eco-tourism, development of tourist projects, land

[112] A.P.J. Mol and D.A. Sonnenfeld, *Ecological modernisation around the world: an introduction* (Taylor & Francis, 2000) 6

reclamation from the sea, shoreline mining, and establishment of airports in CRZ areas despite their significant environmental consequences. The above activities encourage increased commercialisation of coasts and have been allowed, notwithstanding the damage that may be inflicted on fragile coastal ecosystems and local communities. Further, most projects under the aforementioned categories receive clearances with inadequate measures to protect the environment.

The most pressing issue would be that of post-clearance compliance and post facto clearance of the project. These amendments are in sync with the standard view that prioritizes development and economic efficiency and has the effect of eliminating several constraints that were previously imposed in the case of coastal constructions. The current notification continues to facilitate the 'polluter pays principle', which may be perversely used to promote development at the cost of the environment, and has weakened the "precautionary approach" to such an extent that its application has been rendered useless in the face of extensive exemptions granted for environmentally destructive activities.

The CRZ 2019 exhibits weak-willed attempts to incorporate theories of sustainable economic growth by suggesting preventive measures in case of certain regulated activities. It also requires certain developmental activities to take place only subsequent to a "public hearing". The CRZ 2019 thus uses social approaches to protect the environment. The extent to which public opinion will be valued while making decisions is, however, not mentioned. The establishment of District Level Committees to regulate and monitor activities in coastal areas at a regional level is in accordance with the decentralised scheme of regulation recommended by the Theory of Ecological Modernisation.

This theory, however, attributes a high degree of importance to the findings of scientists and technical experts when allowing for development in CRZ areas. The Supreme Court's decision in Worli Koliwada Nakhwa Matsya Vyavasay Sahkari Society Ltd. v. Municipal Corporation of Greater Mumbai seems to discount the importance of such technical and scientific reports as it allowed completion of the project despite the reports raising several environmental alarms.

This theory aims to secure both inter-generational and intra-generational equity using technological methods to prevent environmental harm. Changes introduced in the CRZ 2019,

such as allowing for development in eco-sensitive areas for strategic and other purposes, may restrict access of local and indigenous coastal communities to coastal resources on which they were reliant for their livelihood. For example, the Mumbai Coastal Road Project, which forced the local Koliwada community to either relocate or abandon traditional fishing on account of dwindling catch, is set to benefit less than 2% of Mumbai's population as only private car owners are to be allowed on the toll-free coastal road.[113] This project, which was authorised under the amended provisions of the CRZ 2011 (which were retained in the CRZ 2019) stands in direct violation of the principle of intergenerational equity, as it deprives one community of essential resources while allowing another to reap the benefits of the same.

The theory of ecological modernisation also aims to establish a systematic, institutionalised framework for protecting the environment, and the creation of the NCZMA, SCZMAs and DLCs fulfil this requirement. They are, however, inefficient in their working due to several drawbacks intrinsic to the institutional framework. These authorities must first be reorganised to ensure efficient implementation of any coastal regime that the law seeks to enact.

Other drawbacks and solutions:

Constant amendments have plagued the Indian coastal regulatory regime. The first step towards establishing an effective coastal management policy could be to enact a statute or to solidify the existing Notification into an Act. This will prevent frequent unjustified amendments that jeopardise the environment and will ensure a more elaborate and transparent legislative process.

The CRZ 2019 fails to adequately address land-based sources of coastal pollution (such as agriculture run-off), waste disposal, and problems associated with the demarcation of coasts. Such factors and their impact must also be taken into account while determining the list of permissible activities within the CRZ. It also fails to mention where and how restoration is to be carried out in case of development in a particular area (Such as, the problem of unequal

[113] Aarefa Johari, 'As Mumbai's coastal road construction speeds up, even car owners are joining the protest against it' (Scroll.in, 14 March 2019) <https://scroll.in/article/915849/as-coastal-road-construction-speeds-up-even-car-owning-citizens-in-mumbai-are-rallying-against-it> accessed 22 December 2023

distribution of mangroves).

An analysis of coastal issues and the working of the CRZ in Tamil Nadu, Maharashtra, and West Bengal has revealed that coastal degradation is closely linked with human activities that, despite being regulated, pose a threat to coastal stability.[114] A key issue that is often ignored in the case of coastal protection in India is the detrimental effect that dam construction has on coastlines by destroying land-sea links which could have otherwise been used to replenish shorelines through sediment deposits.[115] The CRZ 2019 has overlooked the need to improve links between land and sea, and the same ought to be addressed. Alternatives to the construction of dams in such areas must also be considered so as not to obstruct sustainable development.

The importance of the intersection between the sea, coast and rivers, mangroves, and the role of physical features in determining the vulnerability of coasts cannot be disregarded. The successful American and Japanese approaches in improving links between sea and land to improve ecological connectivity must also be further examined in detail to identify scope for making changes along such lines.

Cities such as Mumbai have a plethora of buildings violating the CRZ Notifications much prior to its implementation. The CRZ 2019 does not prescribe any course of action to be taken in case of such situations, and this has led to much confusion. From an ecological modernisation perspective, illegal construction can be viewed as a problem that can be addressed through a combination of technological innovations, policy reforms, and public participation.Sustainable development can be promoted by incentivising the use of green construction designs or methods and imposing stringent penalties on violators. District-level committees enforcing the notification should make use of modern technology, such as remote sensing and satellite imagery, to monitor and detect illegal constructions more efficiently. This data-driven approach can help authorities identify and take action against violators, thus deterring future violations. Improvement and development of specific performance indicators are crucial to achieving the

[114] Krishnamurthy and others, 'Managing the Indian coast in the face of disasters & climate change: a review and analysis of India's coastal zone management policies' (2014) 18, Journal of coastal conservation, 657-672.
[115] Ibid.

goal of coastal protection.[116]

The CRZ 2019 must also introduce comprehensive guidelines for Environment Impact Assessment (EIA) and coastal protection which utilize the concept of an "environment softness ladder", a devise used to assess and rank coastal protection measures and the impact it will have on the environment.[117] The CRZ 2019 must be amended to incorporate a comprehensive set of guidelines aimed at balancing sustainability and economic development to facilitate holistic economic growth, and to make it compliant with the theory of ecological modernization.

Frequent changes in water level due to operation of hydroelectric plants may lead to erosion (in case of lowering and raising water level) and destruction of coastline (in case of accelerated water flow at turning points of rivers), and will require expensive dredging due to subsequent deposition and accumulation of alluvium at the bottom of the reservoirs.[118] Prior to adopting a method of shore protection questions of resource availability, construction period, requirements of structure, possibility of expansion and modernization etc. ought to be addressed. Preventive measures, like studying and protecting shorelines, can be a cost-effective alternative to expensive dredging. Tech driven measures may also be utilised by DLCs to prevent collapse of steep river banks. DLCs may systematically reduce slopes of vulnerable coasts through formation of terraces as coasts collapse frequently due to their excessive height and steep slopes.[119]

Bio-shields consisting of mangroves, salt marshes and other coastal vegetation can improve coastal health by strenthening local eco-systems and promoting biodiversity. They not only offer flood protection, but also help with carbon storage, create habitat for wildlife, improve water quality, and facilitate sediment accumulation.[120] They can also be used to shield coastal communities from the brunt of the impact of storm surges, coastal flooding and tsunamis by reducing wave height and increasing distance between settlements and high-risk areas. Efforts

[116] Sridhar R. and others, 'A Political, Economic, Social, Technological, Legal and Environmental (PESTLE) approach for assessment of coastal zone management practice in India' (2016) 21(3) International Review of Public Administration, 216-232

[117] Kerry P. Black and others, 'Guidelines to Prepare India's Coast for Climate Change' (2021) 37(6) Journal of Coastal Research, 1117-1129

[118] Zolina T. and others, 'Monitoring of the collapse of the shores of reservoirs and the technology of their surface and deep fixing' In E3S Web of Conferences (Vol. 157, p. 02011). EDP Sciences. (2020).

[119] Ibid.

[120] Van Zelst and others, 'Cutting the costs of coastal protection by integrating vegetation in flood defences' (2021) 12(1) Nature communications 6533

must be made to actively create such natural shields to protect the environment in the long run.

Additionally, Nature based Solutions (NbS) and Eco-system based Adaptation (EbS) can be used to protect and manage coasts and coastal communities from climate change and anthropogenic factors.[121] By integrating NbSs with existing coastal defense structures, a cost-effective hybrid coastal protection system will be created. Such hybrid systems allow for integration of technological innovations with nature, efficient use of resources and reduces amount of waste produced as compared to cases with traditional coastal defense infrastructure (which require periodic maintenance and repair due toconstant deterioration). They are more suited to combat challenges such as sea-level rise and changing wave patterns, as they can be adjusted and fine-tuned over time to increase coastal resilience. Hybrid coastal protection systems reflect one of the key principles of ecological modernization, that is, adaptive management.

Conclusion

This paper analyses in detail the objectives outlined in the CRZ 2019, changes within the areas demarcated as CRZ, the activities deemed permissible in each of these zones, and their social, economic, and environmental consequences. While doing so, it also compares the CRZ 2019 with the CRZ 2011 in an attempt to examine whether the current framework for coastal management is an improvement over its predecessor. Case studies and developments post-enactment are used to demonstrate how CRZ 2019 can be used to perpetuate unsustainable practices.

Research findings reveal that the CRZ 2019 prioritises growth over the green. It facilitates economic development to the detriment of local coastal communities, native flora-fauna, and coastal eco-stability. Some issues that require immediate attention are the reduction of safeguards for certain regulated activities within the CRZ, inadequate protection of customary rights of coastal communities, and increased commercialisation of coasts through the

[121] Camille Parmesan and others, 'Terrestrial and Freshwater Ecosystems and Their Services. In: Climate Change 2022: Impacts, Adaptation and Vulnerability' (Contribution of Working Group II to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change 310 (Pörtner eds.) Cambridge University Press, Cambridge, UK and New York, NY, USA 2022)

introduction of tourism, construction, land reclamation and shoreline mining in ecologically sensitive coastal areas. Additionally, post-facto clearance for illegal constructions, accountability issues, problems within the institutional framework, usage of outdated data and a lack of visible zone demarcation hinder effective policy implementation.

When examined in light of popular environmental-ecological discourses, the CRZ 2019 reveals itself to be a policy in line with the standard view goal of promoting aggressive economic growth irrespective of environmental consequences. The large number of developmental concessions made, in terms of allowing construction, commercialisation and industrialisation in areas where such development must ideally be restricted, indicate that its object is far from the eco-modern goal of aligning developmental needs with environmental concerns.

An eco-modern solution for the problems raised would be to increase regulatory requirements (in terms of CIAs and SIAs), mandating stakeholder participation, and incentivising usage of 'soft', 'green' and tech-driven protection and construction measures. It is posited that by incorporating adaptive coast management policies, strengthening the institutional framework, and increasing transparency and accountability within concerned agencies, the CRZ 2019 can be streamlined in accordance with principles of ecological modernisation.

This paper underscores the significance of reevaluating India's approach to sustainable coastal development in the 21st century. There exists a need to transform the current coastal regulatory framework to not only ensure environmental conservation but also to secure long-term communal and economic needs. Adopting an eco-modern perspective while drafting policies will help harmonise these seemingly conflicting goals.