

FINAL FRONTIER

Agenda to protect the ecosystem and habitat
of India's coast for conservation and livelihood
security

Report of the Expert Committee on the draft Coastal
Management Zone (CMZ) Notification, constituted by the
Ministry of Environment and Forests, under the
Chairmanship of Prof M S Swaminathan

July 16, 2009



Government of India
Ministry of Environment & Forests

Executive summary

On June 15, 2009, the Ministry of Environment and Forests (MoEF) constituted a four-member Committee under the Chairmanship of Prof M S Swaminathan to recommend future steps on the draft Coastal Management Zone (CMZ) Notification, 2008. The other members of the Committee were Dr Shailesh Nayak, Secretary, Ministry of Earth Sciences; Mr J M Mauskar, Additional Secretary, Ministry of Environment and Forests; and Ms Sunita Narain, Director, Centre for Science and Environment. The Committee was given the following Terms of Reference (TOR):

- To examine the comments received by the Ministry on the draft Coastal Management Zone Notification, 2008
- To advise on the policy and legal framework for Integrated Coastal Zone Management

The Committee has found in its deliberations that there are a number of areas of concern in coastal areas that need to be addressed. Due to the limited time at its disposal, the Committee has outlined these issues in its report, so that necessary follow-up actions can be taken. The Committee suggests that the government should initiate consultations and amend the Coastal Regulation Zone (CRZ) Notification, 1991 based on the outcome.

A summary of the Committee's recommendations is as follows:

The Committee is clear that the Indian coast is doubly vulnerable today. On one hand, it is facing unprecedented pressures because of industrial and urban development; on the other, it will be threatened by climate change-related devastation – from growing intensities of cyclonic storms to sea surges and eventual sea level rise. All this requires increased attention and vigilance for the protection of the coasts and the people who live there. It is also clear that coastal areas are the habitats of fishing communities. These communities are in double danger as well – ironically, from conservation on one hand and development on the other. Future policies for coastal area management must reverse these trends and find approaches to conserve and protect vulnerable ecosystems and secure the livelihoods and habitats of its people. This is the challenge.

Recommendation for TOR 1: Let the CMZ Notification, 2008 lapse and incorporate amendments as recommended in the existing CRZ Notification, 1991 for better coastal management.

Recommendations for TOR 2: An agenda for coastal areas

- Check violations to CRZ through improved space technology-enabled enforcement, strengthened institutions, and regulatory and legal reform.
- Enhance protection to fishing communities and families for habitat and livelihood security through amendments in the CRZ Notification.
- Resolve issues regarding the development and redevelopment of Mumbai, based on locale-specific amendments.
- Introduce regulations to manage the proliferation of ports along the coasts with possible impacts on the coastline by considering cumulative impacts of these developments.
- Introduce tighter standards for disposal of effluents into coastal waters so

that these waters do not become cheaper alternatives to inland pollution management.

- Introduce new management regimes in the Andaman and Nicobar as well as Lakshadweep Islands after deliberation and discussion.
- Introduce any new protection regime – such as critically vulnerable coastal areas – after careful and deliberate understanding of the impact of conservation policies on local communities, particularly fisher families.
- Strengthen protection to mangroves based on clear definitions.
- Include the seaward side to ensure protection from current and future threats, but with safeguards to ensure there is no restriction to livelihoods of fishing communities.
- Introduce measures to greatly strengthen research and regulatory capacity at all levels.
- Introduce policies to cope with and adapt to the future dangers from sea level rise and increased vulnerability of the coasts.

6. TOR 2: Advise on the policy and legal framework for integrated coastal zone management

The Committee is clear that the Indian coast is doubly vulnerable today. On one hand, it is facing unprecedented pressures because of industrial and urban development. On the other, it will be threatened by climate change-related devastations – from growing intensities of cyclonic storms to sea surges and eventual sea level rise. All this requires increased attention and vigilance for the protection of the coast and the people who live there.

It is also clear that coastal areas are the habitats of fishing communities. These communities are in double danger as well – ironically, from conservation and from development. On one hand, these communities are marginalized and even alienated from their lands because of the need for conservation in marine parks or forested islands. And on the other, they are in jeopardy because of large development projects which displace them and take over their lands and livelihoods. Their land is today prized for tourism and high-end housing projects. Future policies for coastal area management must reverse these trends and find approaches to conserve and protect vulnerable ecosystems and secure livelihoods and habitats of its people. This is the challenge.

The Committee has found in its deliberations that there are a number of areas of concern in coastal areas that need to be addressed. Due to the limited time at its disposal, the Committee proposes to outline these issues in its report, so that necessary follow-up actions can be taken. The Committee suggests that the government may initiate consultations and amend the CRZ Notification, 1991 based on the outcome.

7. Agenda for the future

The Committee is outlining below the specific areas that need to be addressed in future.

7.1 Check violations to CRZ through improved space technology-enabled enforcement, strengthened institutions, and regulatory and legal reform.

CRZ 1991 did not provide in detail the mechanism for ensuring compliance. The Notification reads: "The Ministry of Environment and Forests and the state or Union territory government and such other authorities at the state or Union territory level, as may be designated for this purpose, shall be responsible for monitoring and enforcement of the provisions of this Notification."

In 1993, the Indian Council for Enviro-Legal Action filed a writ petition in the Hon'ble Supreme Court on coastal zone management. In 1996, the Hon'ble Court directed the government to set up Coastal Zone Management Authorities under the Environment (Protection) Act, 1986. Subsequently, the National Coastal Zone Management Authority, based in Delhi and headed by the Secretary, MoEF and 13 State/Union Territory Coastal Zone Management Authorities (CZMAs) were constituted.

These Authorities have been delegated powers under the Environment (Protection) Act, 1986 to take punitive action against violations. They are delegated with Sections 5, 19 and 10 of the EP Act, 1986 which give them the powers to inquire into violations, file complaints, verify facts and also take punitive action to temporarily close down polluting or violating units. Over the years, while these powers have indeed been used to check violations, there is a need for reform for more stringent enforcement.

Currently, projects falling within CRZ are sent to the state authority for scrutiny and clearance (projects below an investment of Rs 5 crore are cleared at the state level), while the others go to the MoEF. The MoEF takes decisions based on the recommendations of the state authorities. In addition, proponents for major projects like ports and harbours, which require environmental clearance, also apply under both CRZ and EIA for clearance from the Central government. These processes need to be strengthened.

The Committee would recommend the following actions to be taken:

7.1.1 Use satellite and information technology to map the coast and to monitor real-time violations that are taking place. This mechanism has been used in the case of State of Goa where, based on a decision of the Hon'ble High Court of Bombay, the government undertook mapping of the entire coast to identify violations (see Box on page 16: Goa: Violations to book). The Committee recommends that the MoEF should institute a national-level programme to map the coast and to develop technology that can inform authorities of changes/violations as and when they occur.

7.1.2 It is essential to streamline the clearance process under the different

Goa: Violations to book

In 1998, the Goa Foundation, an environmental NGO based in the state, filed a writ petition (No 422 of 1998 with No.99/1999) regarding violations of the CRZ Notification, 1991 in the state. The matter concerned the construction activities being undertaken in the CRZ-III – restricted for residential and livelihood use by rural communities residing close to the sea.

The petitioners contended that the government was clearing projects in violation of the CRZ Notification. As per the CRZ 1991, construction or reconstruction of existing dwelling units between 200 and 500 metres from HTL in CRZ III areas is permitted, so long as it is within the ambit of traditional rights and customary uses. It also stipulates that the total number of dwelling units should not be more than twice the number of existing units, and the Floor Area Ratio (FAR) should not exceed 33 per cent of the plot size with height 9 metres and 2+1 floors.

The petitioner claimed that the authorities had granted approval to dwelling units in violation of the CRZ and "two villages were virtually sought to be converted into concrete jungle which paradoxically, the CRZ had designed to prevent". It also claimed that in the name of residential units, people had been allowed to construct shops, hotel rooms, beach resorts, etc.

The Hon'ble Bombay High Court, in its order dated October 13, 2006, directed the state government to identify the violations within one year and the Central government to take action against the violations. To comply with the directives of the Hon'ble Court, the Goa state government assigned M/s Remote Sensing Instruments, a Hyderabad-based company, the task of undertaking temporal analysis based on 1991-2005 satellite data. The computed data indicated an increase of structures from 1991 up to 2005. Furthermore, a detailed survey through DGPS was carried out in the villages of Calangute, Candolim and Baga.

Based on these surveys, the Goa government has identified 4,553 structures that have come up in violation of the CRZ post-1991 in the 200-500 metres zone and another 2,272 structures that have been built post-1991 in the restricted zone of 100 metres along rivers with tidal influence. The Hon'ble High Court has asked for strict action to be taken against these violations. In June 2009, the state government has approached the MoEF, seeking an amendment to the CRZ Notification to provide a one-time exemption to these structures. Clearly, if agreed upon, this would be tantamount to legalizing violations and creating a precedence for further negation of CRZ regulations. The MoEF, in the view of the Committee, must take a highly cautious view of the matter, given its implications as a precedence for the rest of the coast and for future violations.

Source: MoEF

regulations; however, greater diligence and rigour is a must to ensure environmental integrity. Currently, it is observed that state authorities, headed in most cases by the Secretary, Environment are involved primarily with deliberations concerning the clearance of projects. As a result, these authorities have little time to enforce regulations for which they were primarily constituted under the order of the Hon'ble Supreme Court. It would be desirable to change the functioning at the state level so that clearance of projects under CRZ and EIA is done by the State Environmental Appraisal Committees or the Departments of Environment. The role of the state CRZ authorities should be mainly directed towards monitoring and enforcement. This separation of roles will lead to better decision-making and implementation. This will also require that the State Environmental Appraisal Committees have the necessary expertise to review CRZ projects.

7.1.3 Build the capacity of State Coastal Zone Management Authorities; in particular, build information sources for better decision-making. The key

problem of coastal regulations is the lack of scientific data and information to enable decision-making. There is a serious lack of scientific institutional capacity at the state and Central levels. This needs urgent attention.

7.1.4 Use web-enabled systems to publish all clearances related to CRZ and its links with EIA clearances. Currently, while the MoEF has put all projects which require EIA and CRZ clearances on its website, all the state authorities have not done so. The Committee has noted that the MoEF has written letters recently to the various state authorities asking for all clearance-related data to be published in the public domain. The Committee would strongly reiterate this directive and recommend that this action should be taken urgently.

7.1.5 Bring changes in the EP Act, 1986 to ensure better compliance. Currently, violations under the provisions of the EP Act (Sections 21 and 22) are non-cognizable and bailable, which delays and impedes successful enforcement. The financial penalties provided under the Act – a maximum of only Rs 1 lakh – are also insufficient as deterrents. The Committee recommends that these provisions should be reviewed and changes made to improve enforcement.

7.2 Enhance protection to fisher families for habitat and livelihood security through amendments in CRZ.

7.2.1 Recommendations concerning fisherfolk dwelling units in CRZ-III:

As per the CRZ Notification, 1991, the area defined as CRZ-III is where rural communities (including fisherfolk) reside. In this zone, the area between the HTL till 200 metres is a 'No-development Zone'. No constructions are permitted within this zone except for repairs of existing authorized structures not exceeding the existing Floor Space Index (FSI), existing plinth area and existing density (frozen as per 1991). Activities like agriculture, horticulture, gardens, pastures, parks, playfields and forestry are permissible within this no-development zone. Furthermore, construction/reconstruction of dwelling units between 200-500 metres from the HTL is permitted so long as it is within the ambit of traditional rights and customary uses such as existing fishing villages and *gaothans*. The construction and reconstruction is subject to restrictions. In this zone, infrastructure for local communities such as public rain shelters, community toilets, water supply, schools, dispensaries, etc are permitted.

The issue of restricted development of the dwelling units, based on FSI of 1991 (restricted to one floor plus two floors, subject to 9 metres height) has been raised by some fisherfolk organizations. They prefer a higher FSI to cater to growing family needs. This seems justifiable; however, any change must also bear in mind the need to ensure continued ownership and use by fisherfolk of these prized properties. The Committee would recommend that government should discuss this matter and take a considered decision on the raising of FSI in Zone-III, subject to ownership and usage restrictions.

7.2.2 Recommendation concerning inclusion of livelihood-related activities

The livelihood needs of fisherfolk – activities concerning their occupation, namely fishing – are seen as left ambiguous in the 1991 CRZ Notification. As a result, on several occasions, fisherfolk communities

have raised demands that their genuine needs have been ignored. In the CMZ Notification, 2008, an effort was made to correct this ambiguity by including the provision that there would be "no restriction in fishing and fisheries related activities of local communities living in the area". Currently, in CRZ 1991, there is no explicit mention of activities which relate to the 'profession' of traditional fisherfolk – fish drying, auction halls, net-mending areas, etc. This is a serious anomaly which impinges on the lives of fisherfolk.

The Committee recommends that the CRZ Notification, 1991 should review the list of such activities and suggest their inclusion in the permissible list in Zones II and III. The list will have to be carefully evaluated to ensure that it does not lead to misuse. For instance, there is a case to be made for inclusion of 'fish processing units' in the permissible activities. However, it is also clear that such units could potentially be large, polluting and owned by non-fishers.

In the no-development zone of CRZ-III (0-200 metres), while dwelling units are allowed for fisherfolk, economic activities like tourism are not permitted. There is a growing demand for inclusion of such activities in this zone, under the ownership of fisherfolk. This demand, however legitimate, can lead to a proliferation of tourism units in this zone and will be difficult to regulate in terms of size, impact or ownership. The Committee is of the view that this modification, if considered, must be handled with extreme caution.

7.2.3 Recommendations concerning legislation for the rights of fisherfolk

The Committee heard testimonies of fisherfolk regarding how development projects had displaced their livelihoods and homes. For instance, in Versova in Mumbai, Machlipattnam on the Andhra Pradesh coast and Mundra in Gujarat, large developmental activities – from housing to ports – have encroached upon the habitats of fisherfolk and affected their livelihoods. The fishers recounted how their struggles against large corporations and building contractors have been long and difficult.

The Committee endorses the recommendation made by Prof M S Swaminathan to the Parliamentary Committee reviewing CMZ on the need for consideration of a separate legislation, along the lines of the Traditional Forest Dwellers Act, 2006 for securing traditional fisher families' rights by the relevant Union ministry.

7.3 Resolve issues regarding the development and redevelopment of Mumbai based on locale-specific amendments.

In CRZ-II, construction of buildings on the landward side of an existing road or existing building structure is permitted. The definition of an authorized existing building is that such a building must have existed prior to February 19, 1991. This provision, important to regulate development in the 500-metres zone, is open to different interpretations, and has proven to be difficult to implement. It has led to large numbers of litigation, many of which are still pending. This issue has reached a flashpoint in the city of Mumbai, with its high-priced land and large slum population.

The Committee had discussions with builders' associations, NGOs and state government officials with regard to rehabilitation of slums as well as rehabilitation of the dilapidated structures in the municipal area of Mumbai. It was explained that the existing dwellings are located on the landward side, within 500 metres and close to the sea. It is contended that as development and redevelopment on the 500-metre zone is restricted through the FSI – CRZ says that the FSI should be as it existed on February 2, 1991 – it is leading to a situation where builders do not have the FSI incentive to rebuild. An NGO specifically brought out the issues regarding pre-1940 chawls and housing, which are in very bad condition and are a health hazard to their tenants.

The Committee was informed that the issue of FSI has been discussed in the Hon'ble High Court of Bombay. In writ petition number 1019, of 1999, filed by a city builder, the Hon'ble High Court upheld the Ministry's clarification which states that the word 'existing Floor Space Index' shall mean 'FSI as existed from the date of issue of the Notification, i.e. February 19, 1991'. As per this clarification, the existing FSI was 1.00 in rural areas and 1.33 in urban areas of Mumbai.

The Committee was also informed that the Ministry had set up a committee in May 2000 to examine the matter precisely related to the Mumbai slums and other dilapidated structures in the CRZ zone of the city. This committee, under the chairmanship of D M Sukthankar, former Union Urban Development Secretary, concluded that a higher FSI should be permitted. This committee recommended that FSI in Mumbai CRZ areas should be as per the development control regulations – existing FSI in non-CRZ areas. The Ministry did not accept the recommendations of the Sukthankar report, in view of the directives of the Hon'ble High Court of Bombay.

The Committee also asked developers and city administrators about the change in FSI that they would require. Most builders argued that they needed a very high – even unlimited – FSI to make the projects financially viable. Their argument was that to provide free housing for existing dwellers who live in cramped conditions, they needed to construct more within the same area. And to make this housing viable, they needed to build more to sell and to recover their costs.

On the other hand, the Committee also heard from fisherfolks' representatives that they did not benefit from the slum redevelopment schemes. They explained that in the name of slum rehabilitation or reconstruction of dilapidated structures, the houses of local communities were given the least priority. The prime land, especially the sea-facing properties, belonging to these communities were sold at exorbitant costs by the developers, while the redeveloped area earmarked for fisherfolk was small and on marginal lands. They requested the Committee to debar all projects of slum redevelopment in these lands, arguing that only projects which secured their ownership should be permitted.

The Committee recognizes the special case of Mumbai and its need for redevelopment of existing properties. However, it is not clear how this redevelopment, specific to certain areas of the city, can be allowed without jeopardizing the regulatory control, so essential for coastal areas,

in other CRZ-II areas. The Committee recommends that the government should take a careful view of this issue, perhaps restricting permitted construction to redevelopment of specified buildings in some specific areas.

It is also imperative that state governments must review their policies for private-developer based building projects in CRZ areas. The government must consider public finance for housing so that this development can be used for meeting the needs of existing households, without compromising on ecological safety.

7.4 Introduce regulations to manage the proliferation of ports along the coasts, with possible impacts on the coastline, by considering cumulative impacts of these developments.

The Committee noted that currently, the shoreline of the country is undergoing a major change because of a large number of port and harbour projects. These projects involve large quantities of dredging, shore protection works, breakwaters and reclamation. The problem is that there is little information of the cumulative impacts of these projects on the coastline. Officials of the Union Ministry of Shipping explained that it was difficult to track all projects, because permissions are given based on their scale and ownership. The Union Ministry of Shipping is involved in 'major public sector ports, while state governments give clearance to minor ports as well as upgraded ports being proposed by private developers'. Experts are unanimous that each structure would impact the shoreline – particularly the beach formation. Already, many of these infrastructure projects have caused significant shoreline changes, as in Ennore, Puducherry, Alibag, Digha and Dahej.

It is also observed that the shoreline is being impacted adversely by mining projects and by interventions like the building of shore-protection structures like groynes (**see Box: Blocking the sea**).

Under the existing CRZ and EIA notifications, various port projects are indeed regulated. Under the EIA Notification, the ports which attract cargo-handling capacity need clearance. In other words, the ports which may only involve dredging or disposal of dredged material or shore-protection projects, will not be included. The EIA Notification also categorises the clearance required based on the handling capacity of the port – ports with a handling capacity higher than 5 million tonnes per annum require clearance from the MoEF, while the rest can get clearances from State Environmental Appraisal Authorities. In CRZ 1991, all port projects require clearance from the Central government, but only for components which fall within the land area of CRZ; this is because CRZ 1991 has no jurisdiction in the water area.

The Committee was of the view that these developments have all led to serious threats to the coast, as especially beaches face severe erosion and shorelines are visibly changing. Given that the Central and state governments propose to construct several ports and harbours all along the shore in the coming years, these projects could have irreversible adverse impacts on the coast. The Committee recommends the following:

7.4.1 The government must immediately study the cumulative impacts of the

Blocking the sea

Coastal erosion is a serious problem in Puducherry. But the beaches did not disappear overnight. Activists say the problem began in 1989, when a harbour was built at the southern tip of the Union territory. Two breakwaters were constructed as a part of the harbour which stopped the littoral drift, the natural south to north movement of sand.

The country's eastern coast has a high littoral drift with an estimated 6 million cubic metres of sand moving south to north along the coast. The breakwaters in southern Puducherry meant that sand from the beaches of the state moved north, but there was no sand to replenish it. So the area north of the breakwater lost all its beaches.

Consulting Engineer Services, a New Delhi-based organization which designed the harbour, had anticipated this problem. It had incorporated a sand bypass system in the harbour's design to obviate sea erosion: silt from the harbour would be dredged and artificially pumped to the other side, restoring the movement of sediments along the coast. Says M D Kudale, chief research officer of Central Water and Power Research Station (CWPRS), "A sand bypass system was put in place but seldom used except for a brief period between 2000 and 2001, when small stretches of beach began to reappear. But the system was discarded in 2002, and the beaches disappeared once again."

SAND LOSS

By 2002, northern Puducherry had lost all its sand. Structures along the coast began to crumble as sea water intruded into their foundations. In 2002-03, the state government decided to build a seven-km long seawall consisting of boulders along the coast; Rs 40 crore was spent on the construction. While Puducherry was saved temporarily, the problem of erosion was transferred to villages in Tamil Nadu in the north.

By 2006-end, areas in the state north of Puducherry had lost 200 metres of beach and the sea waves destroyed a few houses and killed a child. The Tamil Nadu government had to fortify these villages with a seawall. Meanwhile, in 2002, experts from the Indian Institute of Technology, Chennai and the National Institute of Ocean Technology (NIOT) suggested that groynes be erected on a trial basis in Puducherry. Civil society groups like the Indian National Trust for Art and Cultural Heritage and Citizens Forum for Puducherry opposed the move, contending that groynes would only transfer the problem of erosion towards the north of the structures — much like the breakwaters. The issue was raised in the Union territory's Legislative Assembly in 2002. The government then assured that it would seek a second opinion on the subject. In January 2008, Pondycan along with another NGO, Coastal Action Network, filed a public interest litigation in the Hon'ble Chennai High Court, seeking a stop on the construction work. A month later, the Court directed that the Public Works Department should get environmental clearances for the project. The Department applied for CRZ clearance in February 2008. Meanwhile, in January this year, the Tamil Nadu government initiated an enquiry on erosion in Kottakuppam block in Villupuram district. The report of the enquiry noted: "All villages in Kottakuppam block and other areas of Vannur taluk of Villupuram north of Puducherry, are at the risk of sea erosion because sea walls/groynes had blocked the natural transport of sand up and down the coast." It further added that if construction proceeds further in Puducherry, it would "aggravate the erosion on Tamil Nadu coast especially in Villupuram district". The proposal from the Puducherry administration seeking clearance from the MoEF for constructing the groynes is under consideration, while no proposal has been received from the government of Tamil Nadu.

Source: Down To Earth

individual projects on the coastline, pending which there should be a moratorium on expansion of existing ports and initiation of new projects.

7.4.2 The CRZ 1991 should be modified to include the seaward side so that port projects are regulated in terms of their impacts on the sea and its land

interface. In the CMZ 2008, an effort was made to regulate all activities related to the development of a port – including ancillary and road and transport-related activities – through an integrated port management plan. The CRZ 1991 should be amended to include this provision.

- 7.4.3 The amendments proposed in the EIA Notification of January 9, 2009 would require that modernisation or expansion proposals without any increase in pollution load and/or without any additional water and/or land requirement will be exempted from environmental clearance. This could lead to major impacts on the coast, as existing minor and major projects could increase in size and impact without any scrutiny or regulation. The Committee recommends that the Ministry should examine this amendment in the EIA notification in the light of its recommendations above.

- 7.5 **Introduce tighter standards for disposal of effluents into coastal waters so that these waters do not become cheaper alternatives to inland pollution management.**

The Committee is of the view that pollution of the coast is a serious threat. The Committee heard from representations of fisherfolk that fish resources have depleted over a period of time in many places because of effluent discharges into coastal waters. Taking advantage of lax effluent discharge standards, some industries are basing their operations in coastal areas. There is also a growing trend towards building pipelines for disposal from common effluent treatment plants into the sea. The problem is that it is impossible to monitor whether effluents are indeed being treated before disposal or if they are simply being dumped into the sea. Similarly, most cities and municipalities located in coastal areas discharge untreated sewage into the surrounding sea. The sea and the coast are also being used as a convenient dumping ground for solid wastes.

Under CRZ 1991, it is provided that “discharge of untreated waste and effluents from industries, cities or towns and other human settlements is a prohibited activity. Schemes shall be implemented by the concerned authorities for phasing out the existing practice, if any, within a reasonable time period, not exceeding three years, from the date of this notification.” This provision has been completely ignored in the past and in fact, cities are discharging their effluents with impunity. There is also a growing trend to lay underwater pipelines for discharge of effluents. These practices will be highly detrimental to marine life.

The Committee strongly recommends that action must be taken to mitigate pollution in the sea. It recommends that standards for effluent disposal should be revised; that there should be a strong monitoring programme with public data access on the quality of sea water; and that underwater effluent pipelines should be disallowed with amendments to CRZ 1991.

- 7.6 **Introduce new management regimes in Andaman and Nicobar as well as Lakshadweep Islands after deliberation and discussion.**

The Committee observed that the CRZ Notification, 1991 stipulates an

uniform 500-metres regulation along the islands of Andaman and Nicobar and Lakshadweep. This provision creates different problems for differently sized and located islands. In cases where the islands are small, the entire landmass of the island could be notified under CRZ, which in the absence of management plans, could lead to problems for the island-dwellers. On the other hand, in large islands, many regions which are ecologically fragile are not included in the 500-metres regulation. There is also a growing concern about the special vulnerability of the islands because of sea level rise.

These issues require a review into the CRZ Notification, 1991. The CMZ Notification, 2008 had advocated that the islands should base their development on an Integrated Coastal Zone Management Plan, which would require clearance from the MoEF. The Committee noted that these management plans have already been prepared for selected islands and approved by the respective administrations.

The Committee recommends that a separate island protection zone notification could be issued for the integrated management of the islands. This notification should keep in view the ecology, socio-economic issues, especially of fisherfolk, sea level rise and sustainable development as well as the impacts of the tsunami of December 26, 2004. The island protection zone notification should be finalized after deliberations with the island administration and its people.

Jambudwip: Conservation without people

Jambudwip Island is a tiny dot in the Bay of Bengal. A few years ago, it hit the headlines when wildlife activists dragged fisherfolk who used the landmass to dry their fish, to the Hon'ble Supreme Court. A case was filed regarding 'encroachment' of this island, partly covered by mangroves. The Apex Court's Central Empowered Committee (CEC), which advises it in all forest matters, in its report to the Court contended that fish drying was a non-forest activity, and therefore disallowed under the Forest Conservation Act, 1980.

The fisherfolk appealed. They had to go out into the open sea for days, putting life on hold and everything they had at risk. Jambudwip was a convenient transit camp; they used this nearest landmass, with a natural harbour, only to dry fish. They had no refrigeration facilities; this was the only way they could preserve fish for sale in the mainland. Their practices were sustainable – fishing nets were handcrafted to catch only the adult fish, leaving the small to the sea. They used the sun to dry fish. They took from nature only what they needed.

The fishers also explained that their use was not destructive to the ecology of the island, and, in fact, it was in their best interest to protect the mangroves as a buffer to the harsh sea. The permits and payments made to the forest department showed the island was in use from 1950. Destruction to the mangroves was marginal – satellite imagery confirmed the island had, over these long years of use, lost only 200 hectares of forest, out of its 2,000 hectares. The fisherfolk also put forward a plan – use the money we pay for permits to the forest department to plant mangroves; create a sustainable management plan for the island; restrict boat numbers.

But these pleas were unheard. The fishers were disallowed from using the island in the future and livelihoods of over 10,000 people engaged in fishing, drying, transporting and selling fish ended. Conservation in this case made enemies, not friends.

7.7 Introduce any new protection regime – such as critically vulnerable coastal areas – after careful and deliberate understanding of the impacts of conservation policies on local communities, particularly fisher families.

The CRZ Notification, 1991 declares areas like national parks/marine parks, sanctuaries, reserve forests, wildlife habitats, mangroves, corals/coral reefs, areas close to breeding and spawning grounds of fish and other marine life, areas of outstanding natural beauty/historically/heritage areas, areas rich in genetic diversity, areas likely to be inundated due to rise in sea level consequent upon global warming and such other areas as may be declared by the Central government or concerned authorities at the state/Union territory level from time to time, and the area between the Low Tide Line and the High Tide Line in CRZ-I as ecologically sensitive. Over the years, this open-ended definition has led to ambiguity and subjective interpretation.

In CMZ Notification, 2008, an effort was made to clarify the areas that should be considered as ecologically sensitive. A list of 12 such areas – ranging from mangroves to nesting grounds of birds – has been provided in Appendix II of the Notification.

Furthermore, the Committee is also aware that there are large marine parks, sanctuaries and national parks along the coastline of the country – Chilka, Pulikat, Pichawaram, Gulf of Mannar, Vembanad, Coringa, Gulf of Kachchh etc – which are also inhabited by fishers. These large biospheres require special attention, since they provide livelihoods to local communities and are also affected by developmental activities. It was proposed to the Committee that these regions could be provided with further protection by declaring them as Critically Vulnerable Coastal Areas (CVCA).

The Committee noted that in some cases, conservation has led to the impoverishment of fisherfolk. It noted instances from Orissa, where there have been cases reportedly of suicides by desperate families of fishers, dispossessed because of the creation of Bitharkanika National Park. Similarly, at Jambudwip, a small island off the coast of Bay of Bengal, fishers have been thrown off the island they were traditionally using for drying fish, because of intervention by some conservationists (**see Box: Jambudwip: Conservation without people**). These past experiences must not be repeated and efforts must be made to enjoin the interests of fishers with that of conservation.

The Committee recommends that the Ministry may take a view on the creation of Critically Vulnerable Coastal Areas based on the above factors.

7.8 Strengthen protection to mangroves based on clear definitions.

The CRZ Notification, 1991 provides for the protection of mangroves irrespective of their density. However, it is noted that often, state governments take the view that mangroves above 1 hectare in density and 1 metre height should be recognized as 'mangroves' for protection. The Hon'ble High Court of Bombay (writ petition 3246 of 2004) has directed the Maharashtra state government to map the mangrove area and declare all such areas as 'forests' for protection. However, it is understood that

this work to map mangroves and its declaration is still incomplete. As the definition is unclear, it is possible to impact large mangrove sites because of certain development projects. The committee recommends that the protection of mangroves is critical, particularly as these provide bioshields and nurseries for fish breeding in the coast – protecting against disasters like tsunamis or cyclones and providing livelihoods to fishers. It is also important to recognize that mangroves are difficult to regenerate. Once these mangrove areas are destroyed, new mangrove plantations do not come up easily.

The Committee recommends that the Ministry should conduct a nation-wide mapping of existing and potential mangrove areas. It must provide a definition of mangrove areas that need to be protected and include these and other suitable areas into its afforestation projects, like the Green India project. It should also include the concept of restoration – of degraded areas, mangroves or coastal, sandy beaches – into the plan. All mangrove areas should be strictly protected as bioshields and sea-productivity zones.

7.9 Include the seaward side to ensure protection from current and future threats, but with safeguards to ensure there is no restriction to livelihoods of fishing communities.

The coastal environment depends upon the hydrodynamics of the waters of the sea. We cannot plan or manage the land, without planning for the seawater. Furthermore, what is done on land could have major impacts on the sea – from pollution to construction. The Committee has informed about how in some cases, promoters of port and jetty projects were filling up the land in the sea – reclamation to use for other purposes – without any permissions. In CRZ 1991, the seaward side had been included and so its regulation was not possible. CMZ 2008 included the area up to territorial water limits (12 nautical miles measured from the appropriate baseline). It also included the seabed in its regulatory ambit.

Fishing communities have raised objection to this inclusion of the seaward side in CMZ 2008. They contend that the classification of the sea area under the Notification would have implications for the livelihoods of the fishing community. It would restrict their access and instead, would open out the sea for industrial development. Clearly, this should not be the aim of the regulation.

The Committee recommends that the seaward side should be included in the CRZ 1991. But the amendment must take into account the concerns raised by fishing communities and ensure strong and effective safeguards.

7.10 Introduce measures to greatly strengthen research and regulatory capacity at all levels.

It is clear that coastal areas face enormous challenges. But if these are to be managed, then we will need institutions for coastal research. Currently, there is a huge gap in data collection and information and more importantly, on using the knowledge for changing policy and practice. It is also clear that we need to strengthen the current regulatory institutions at the Centre and at the state for better decision-making, including the setting up of a new institute for coastal zone management. This will

require enhancing the capacity of current institutions and building new ones dedicated to coastal research. It will also require involving people – fishers and environmentalists – in this research so that their knowledge can be used to learn the practice of the future. Further, the National Board for Sustainable Coastal Management may be set up to assist the Ministry and the state governments and to address the policy and legal issues, including undertaking conflict resolution studies.

The Committee would recommend that urgent steps are taken to build institutional capacity for the coasts.

7.11 Introduce policies to cope and adapt to future dangers from sea level rise and increased vulnerability of the coasts.

The Committee is of the opinion that the coastal areas of the country face a danger due to sea level rise in future and the projected increase in frequency of storms and tidal surges. These developments would not only endanger inhabitants of coastal areas, but also have an adverse impact on the coastal ecosystem which provides livelihood support to millions. It is imperative that the Ministry undertakes a project to demarcate the vulnerability and hazard line along the coast. This will take into account present and future risks because of projected sea level rise and other threats. Once done, the demarcated vulnerability and hazard line must be incorporated into the CRZ 1991. This will initiate steps to improve protection of critical infrastructure and thickly populated areas. The study will also provide policy directions for adaptation strategies in our coastal areas. It is clear that the coast will need more protection measures and investment in adaptation to cope with the coming devastations.