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Assessing lessons learned after the tsunami



This newsletter is the first in a two-part series which examines the consequences of ignoring environmental safeguards in coastal development, and points to the ways in which coastal managers can address these omissions.

Coastal areas of Indian Ocean countries have long been subject to intense development needs and pressures. They contain a striking concentration of human settlement and commerce, face rapid rates of population immigration and economic growth, and have extensive networks of transport, ports, urban facilities, industries and other infrastructure. As development has taken place over the last decades, environmental safeguards have been frequently ignored. This has had devastating consequences on coastal ecosystems, and on the human populations who depend on the goods and services they provide. The environmental costs of such short-sighted and short-term development mandates have been often ignored.

The Indian Ocean tsunami of December 2004 sparked off a massive process of reconstruction, aiming to meet the urgent need to rebuild shattered settlements and infrastructure. In many cases these efforts, too, have been carried out with little regard

for the environment. Yet post-tsunami reconstruction did not create these environmental problems, it brought a series of long-term issues sharply into focus. The rapid pace of post-tsunami reconstruction has meant that over the last year and a half, many of the environmental impacts of haphazard coastal zone development have been illustrated graphically over a short period of time.

Although the tsunami provided an opportunity to demonstrate a truly environmentally sustainable approach to coastal zone development, and to apply the many lessons and best practices that have

been learned over recent decades, in reality these critically-needed inputs were most often lacking. This is despite the fact that many people had recognised publicly the need to incorporate environmental concerns into the reconstruction process, and there had been a massive rise in public awareness about ecosystem values.

As described in this newsletter, although numerous guidelines and recommendations were provided to coastal developers, and despite the fact that some tsunami-affected countries have a comprehensive set of laws and regulations governing development in the coastal zone, these do not for the most part seem to have been followed in the post-tsunami reconstruction process. It is now 21 months since the tsunami, and time to reflect on why this opportunity to incorporate environmental safeguards was missed, and why decades of accumulated knowledge about sustainable approaches to coastal development was apparently ignored.

*Photograph: Beachscape in Thailand © IUCN
Thumbnails top and bottom © Sriyanie Miththapala;
middle © Jerker Tamelander*

Environmental safeguards were not internalised into reconstruction process

to the detriment of long-term sustainable coastal development.

Ali Raza Rizvi Environmental Advisor, CARE International

The tsunami was the most deadly natural disaster of its kind but the ensuing international response was also unprecedented. Regrettably however, most of the tsunami recovery plans seemed to have lacked the vision for holistic and integrated development that is environmentally sustainable. Although Rapid Environmental Assessments (REAs) were carried out immediately after the tsunami, their recommendations were not usually integrated into the reconstruction and rehabilitation process.

In many instances, local environmental conditions have already been damaged as a result of bad or lack of planning in the past, as well as during the reconstruction process. Indiscriminate dumping of tsunami debris in wetlands has decreased fish catch; decreased water depth and diminished water storage during the drought period. A sudden increase in the extraction of timber and land requirements for housing units has resulted in deforestation. This, in turn, has resulted, in some areas, in habitat loss for species such as elephants, thereby increasing human-elephant conflict, and not only depleting livelihoods (damaging crops) but also causing deaths of both humans and elephants. Increased sand mining for building is another issue that has the potential to severely deplete water resources. The oversupply of boats and fine-meshed nets, and consequential over-fishing has the potential to wreak havoc on the fisheries sector. Improper management of solid waste at the shelter sites is a serious and ever-increasing health hazard.

These environmental concerns were overridden either to achieve rapid results on the ground or by some cosmetic work to satisfy internal environmental standards, if any. That sound environmental conditions are essential to the sustainable revival of communities and to long term livelihoods and economic security has been ignored largely. Frequently, the environment is seen as a stumbling block to efficiently rehabilitating disaster victims. In addition, governmental environment agencies



Elephants near a garbage dump, Sri Lanka
© CARE International

have little influence in decision-making processes. Meanwhile, environmental organisations are trying to convert the converted by reaching out only to the environmental community, developing guidelines and checklists which few outside their sector, value or even read. They are finding it difficult to accept the unfortunate fact that the very word 'environment' is viewed by the mainstream development sector as an ill-afforded luxury.

There is a critical need for environmental organisations to analyse what went wrong in spite of the REAs, well-researched guidelines and checklists, and environmental capacity building programmes. The environmental sector must accept the responsibility that its strategy was too weak to ensure the mainstreaming of environmental issues into tsunami recovery plans. An impact study of tsunami-environmental initiatives must be carried out to learn better from the failures (and a few successes) and then a strategy developed for disaster preparedness and emergency response. This should be formulated through the involvement of the stakeholders.

Although post tsunami reconstruction is winding down, development of coastal areas will continue. We need to ensure that present and future coastal development programmes will incorporate environmental safeguards as integral part components of their work plans and strategies. If we manage to do this, then we can look forward into the future with hope. If we do not, then all development efforts, all coastal programmes will fail.

Lack of clear regulatory frameworks for coastal zone management

Coastal Ecosystems

Mangrove ecosystems are a symbol for the many failings of regulatory regimes that govern the coastal zone. They tend to “fall through the cracks” of governance structures, even in countries whose regulatory regimes specifically include provisions for integrated coastal management (ICM). There is a great deal of variation in the regulatory regimes for ICM in the five countries most severely affected by the tsunami – India, Indonesia, Maldives, Sri Lanka and Thailand – and in their enforcement.

Only India and Sri Lanka have laws or regulations in force specifically governing the coastal zone. India’s Coastal Regulation Zone Notification totally prohibits development in mangrove ecosystems, but for various reasons the Notification is not enforced consistently. In Sri Lanka, the Coast Conservation Act governs the coastal zone, but mangroves are governed by the Forest Act, which opens the door to conflicts of jurisdiction under the two laws and inadequate enforcement of both. In July 2006, Thailand finalised a draft ICM law, which may be considered for adoption in 2007. Indonesia is in the process of preparing an ICM law. The Maldives does not currently have a regulatory regime for ICM or for mangroves.

Recent studies in India, Maldives, Sri Lanka and Thailand revealed deficiencies in the regulatory regimes, including: no clear definition of the coastal zone in some countries; unclear property rights in the coastal zone in others; inadequate representation of local communities in making decisions on resource allocation and use and inadequate provisions for sharing benefits of using mangroves and other coastal resources with coastal communities; inadequate provisions for zoning and other land use controls and for environmental impact assessment; little or no accountability required of government officials responsible for mangroves and other coastal resources. Positive aspects of some of the regulatory regimes include strict liability for hazardous activities in the coastal zone in India and in Thailand’s draft law, and provisions for protection of natural barriers, including mangroves, and prohibition of all activities that negatively affect them.

Ensuring the sustainability of mangroves and other coastal ecosystems will require a regulatory framework for ICM in the countries where one does not yet exist and a comprehensive evaluation to of legal instruments governing all aspects of ICM in each country to determine what needs to be revised. It will be important to harmonise existing laws,



Koh Phra Thong, Thailand, where land tenure rights were unclear before the tsunami © IUCN

particularly to provide for coordination among government authorities responsible for different features of ICM and to eliminate conflicts of jurisdiction among them, which will facilitate enforcement. As part of the process of harmonising the regulatory regime, field surveys should be carried out to identify factors other than conflicts of jurisdiction that undermine enforcement and amend the regime to deal with them. It will be equally important to identify and put into practice a range of incentives for compliance with laws and regulations governing ICM.

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The consequences of ignoring environmental safeguards

After the tsunami there was a huge displacement of populations and extensive damage to infrastructure. In India, 235,377 homes were reported to have been damaged or destroyed; in Indonesia, 141,000; in Sri Lanka 103,836; in the Maldives, 8,074; in Thailand, 4,806; in the Seychelles, 500 and in Somalia 1,400.

In the rush to rebuild, environmental safeguards were ignored, often with damaging consequences.

In Aceh, 123,000 houses needed rebuilding after the tsunami, and 8.5 million m³ of timber was needed for this. Targeted for the supply of timber was the Gunung Leuser National Park (a UNESCO natural world heritage site), with a unique variety of habitats and one of the last places in Indonesia where endangered Sumatran tigers, orang-utans, rhinoceros and elephants all exist. While authorities discussed the issue, mushrooming NGOs went ahead with their building, obtaining their timber illegally. WWF called for those involved in reconstruction efforts to use timber from sustainably managed forests and in response, the British Red Cross and Oxfam used imported timber in Aceh.

In southern Sri Lanka, several intact coastal ecosystems were cleared after the tsunami for resettlement. The siting of houses in areas used as migratory pathways by elephants created problems, because elephants continued to use their established pathways, destroying newly-built houses, home gardens and crops in their wake. The human-elephant conflict is serious in Sri Lanka, and in the last 10 years, has resulted in the death of 1,369 elephants and 536 people.

In the rush to rebuild, many existing policies, laws and regulations were often disregarded, and there was great uncertainty about whether new policies and regulations had been established after the tsunami. In Sri Lanka, a coastal zone management plan specifies site-specific setbacks in different areas of the coastline taking into account, *inter alia*, coastal morphology, wave function and vulnerability. Despite this existing plan, following the tsunami, a blanket setback buffer

zone of 100-200m was proposed, but never gazetted, paralysing decision making and delaying reconstruction by ten months before this restriction was lifted.

Coastal zone management in Thailand has, for decades, been governed through *ad hoc* application of natural resource and environmental quality laws, which is seldom coordinated with the implementation of laws governing sectors that carry out activities in the coastal zone. The tsunami provided the impetus to draft a law that, if adopted, would provide a framework for coordinating coastal zone and marine area management.

Solid waste management is another problem in many of the tsunami-affected countries. Somalia - which has already been affected by droughts, civil war, poverty and poor economy - is now being overrun by garbage. In addition, illegal shipments of hazardous wastes have been dumped from other countries onto Somalia's coastline. The tsunami stirred up these hazardous wastes and caused many health problems in surrounding communities. Currently, the problem still exists, as the dangers of war have overridden environmental concerns.

In Sri Lanka, the tsunami carried inland coastal invasive alien species and these have spread rapidly, threatening native biodiversity. Prickly Pear Cactus has spread in sea-shore habitats in the district of Hambantota. This has affected nesting habitats of marine turtles which visit these areas, and affected the regeneration of natural coastal vegetation such as *Pandanus* species.

All these issues existed before the tsunami, and will continue afterwards. The tsunami merely focused these problems and magnified an already seriously deteriorating situation for Asian coastal ecosystems. Unfortunately post tsunami reconstruction has only added to these conflicts, both in the immediate and the longer term, rather than serving as a model of best practice in sustainable coastal development.

The challenge for coastal ecosystems managers is clear: a) identifying what when wrong in integrating environmental safeguards; b) learning the mistakes we made and c) find ways to rectify these mistakes. If, as the first article points out, coastal ecosystem managers are not communicating effectively, then perhaps a paradigm shift in thinking about coastal ecosystems is needed urgently.



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