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The Eastern Ghats

EPTRI - ENVIS Newsletter

Estuarine Ecology of Eastern Ghats


Mangroves


Coringa Mangroves


Rhizophora lamarckii, Pitchavaram


Mouths of Godavari & Krishna Rivers

Foreword

It was decided that we would bring out two issues of the Newsletter '*The Eastern Ghats*' on Estuarine Ecology. This issue, Vol.11, No.1, 2005 includes the second and final part of the article: 'Ecology and Biodiversity of Eastern Ghats – Estuaries of India' by Balasubramanian, T, *et al.* We are pleased to include an article: 'Coastal Follies and the Tsunami' by Ashish Kothari and Manju Menon.

The mangroves have played a vital role in reducing the impact of Tsunami 2004. In view of this, six publications from the M.S. Swaminathan Research Foundation and the 'Mangroves Special' issue of the ENVIS Forestry Bulletin provide adequate insight in understanding and nurturing mangroves. An overview of the said publications is given for the benefit of the stakeholders.

Conscious of the environmental impact of tsunami, EPTRI deputed a team to the Nizamapatnam Estuary to study the effect on population of aquatic birds. Notes on the observations made are also included.

The stretch of Eastern Ghats from Orissa, through Andhra Pradesh to Tamil Nadu has numerous features of ecological importance. The endeavour, while brining out the Newsletter, is to give importance to data gaps. Fragile ecosystems and hotspots of this broken mountainous terrain are important. Hence the forthcoming issue of The Eastern Ghats would address this topic.

We take this opportunity to draw the attention of our readers to send us articles and news clippings on 'Fragile Ecosystems of Eastern Ghats' the theme of our next issue.

ENVIS Coordinator

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Note The views expressed in the article/s are of the Authors.

Readers are Welcome
to contribute articles to our Newsletter. The theme of our next issue is on "**Fragile Eco-systems of Eastern Ghats**".

Coastal Follies and the Tsunami

Ashish Kothari and Manju Menon[1]

[**This article first appeared in *InfoChange News & Features*, January 2005**]

In the wake of the colossal, post-tsunami human tragedy unfolding in South and South-east Asia, the immediate needs of relief and rehabilitation are paramount. Such events however also require us to start working towards more long-term responses. The recurring question is: are there ways to minimise human casualties in the face of such disasters? Indeed, by intelligently using nature's own defences, can we buffer ourselves against the powerful forces generated by nature?

Most so-called 'natural' disasters today have a major element of human folly. Floods annually cause havoc, not because nature itself is cruel, but because we have encroached on floodplains, destroyed forests that act as sponges, and interfered with natural watercourses. Droughts become killer famines because people no longer have access to emergency foods from forests and wetlands, or to traditional crops that could grow even in conditions of rainfall failure. Earthquakes kill many people quite unnecessarily because of inappropriately built homes that come down like a pack of cards.

Nothing could have completely prevented the damage the tsunami caused. However, if India's natural coastal and marine defences had been intact, the destruction is likely to have been far less. Tropical coastlines are characterised by several natural buffers. Coral reefs grow like underwater rainforests, forming a protective shield around the shore, and mangrove forests a sturdy barrier between the sea and the land. Sand dunes, cliffs, and littoral forests form further buffers. In many areas, lagoons and estuaries also act as shock-absorbers. With all these intact, the force of the sea is significantly reduced. When a super cyclone hit the Orissa coast some years back, observers reported that areas with intact mangroves suffered significantly less than those where such vegetation had been destroyed. Some reports point to the same conclusion from the tsunami affected areas. Reportedly, communities living along the Pichavaram and Muthupet region in Tamil Nadu were protected against the tsunami's impact by intact mangroves. In Alappuzha and Kollam in Kerala, where the impact should have been less due to distance, it was actually greater due to illegal sand mining. On Sri Lanka's eastern coast, much less damage was seen in Yala National Park's intact ecosystems, than in the human-altered coastal stretches and tourist resorts.

Human folly along the coast

Unfortunately, far from protecting the natural ecosystems that protect us, we have dealt recklessly with our coasts and seas. The Government of India estimates that over 40% of India's mangroves have already been destroyed. Extensive coral reef damage has taken place in the Gulfs of Kachchh and Mannar, and parts of Andaman and Nicobar Islands. Till recently corals were actually mined for industrial use and road-building! Beaches across India have been mined for sand, leaving the coast vulnerable to even normal wave action. In Great Nicobar, 21 beaches have been lost to sand mining between 1981 and 2000. Sensitive coastal stretches have been used for tourist resorts, urban growth and mushrooming settlements. Reclamation of the sea by ports, harbours, roads, and industries, has greatly increased the coast's vulnerability. Communities too have been pushed into more vulnerable positions; scientists like John Kurien note that in many cases landward areas are occupied by private individuals and governments, and not made available for fishing settlements, forcing them to occupy more seaward lands.

And then there is pollution: in 1998, scientists R. Sengupta and S.Z. Qasim estimated that every year we threw into the sea 1.3 billion tonnes of domestic sewage, 1000 million tonnes of industrial effluents, 105 million tonnes of solid wastes and garbage, 2.6 million tonnes of chemical fertilizers, and 20,600 tonnes of pesticides! Is it any wonder that our seas are dying, and with them, the natural defences that India once abounded in?

Protection of the coast's protectors?

In 1991, the Government of India notified the Coastal Regulation Zone (CRZ) notification. This revolutionary legislation attempted to regulate development along the coasts, and was applauded by environmentalists, wildlife activists, and traditional fisherfolk. Unfortunately, the CRZ notification has been undermined by the government itself, by turning a blind eye to violations, or giving permission for destructive activities. Worse, the central government has repeatedly diluted the provisions of the CRZ notification... as many as a dozen times (see box)! States have been tardy in finalising Coastal Zone Management Plans and setting up Coastal Zone Management Authorities. Only one state (Goa) committee has a NGO member. It is not a major surprise that CRZ norms are observed more in the breach.

In July 2004, the MoEF set up a high powered committee, to review the CRZ notification. Given the record of dilutions in the last few years, environmentalists hope that the committee will recommend a roll-back of these dilutions, strengthen the norms for the protection

Weakening coastal regulations

Over the last decade, the central government has repeatedly amended the CRZ notification, each time diluting the original intent of the notification. These include:

- allowing sand and rare earth mining, and atomic en ergy projects along the coast (Kalpakkam, which has had to be shut down due to the tsunami, came up as a result);
- reducing the no-development zone to a mere 50 mts, and relaxing norms for tourism projects, in the A&N and Lakshadweep Islands;
- allowing ports and resorts along the coast, with mini mal environment impact assessment;
- allowing several kinds of units without any environ mental assessment, in Special Economic Zones.

of coastal ecosystems, set up stringent standards for coastal use, and recommend transparent and participatory ways to implement the notification.

What lies ahead?

We are now faced with the task of rebuilding our ravaged coastline and the lives and livelihoods of the affected families. A well-thought out reconstruction plan is vital, with a key focus on rebuilding natural coastal defences, and ecologically friendly settlements. Here are the elements. Revive coral reefs, regenerate mangroves, restore beaches and sand dunes, and prevent pollution. Through this, generate considerable livelihoods for coastal communities. Bring all remaining natural ecosystems under conservation laws, without alienating the communities that have traditionally lived there. Strengthen the CRZ, allow only environmentally sensitive development in fragile areas. Listen to traditional fisherfolk's demands to prohibit industrial trawling and commercial shrimp-farming. Prepare a comprehensive disaster management plan for each area, with community participation.

Listen also to the animals. Systematic observations of aquatic and land animals could provide as good a warning as sophisticated sensors sunk into the sea. Scientists have repeatedly recorded pre-earthquake patterns of abnormal behaviour in wildlife. On December 4th 2004, scientist Arunachalam Kumar sent out an email about the mass beaching and death of whales in Australia, and predicted that a major quake was likely to hit someplace on earth soon. Three weeks later, it did. Strange behaviour in fish and dolphins was reported in Indonesia just before the quake. Again, can we learn from nature?

If we don't take such long-term measures now, we will simply be doing what we are so good at: not learning from our mistakes, and regretting this the next time a tragedy comes our way.

An overview of some publications on Mangroves by M.S. Swaminathan Research Foundation and 'Mangrove Special' by ENVIS Centre on Forestry

[*S.H. Baquer*, **ENVIS Coordinator**]

The two issues of the Newsletter: *'The Eastern Ghats'* Vol.10, No.3, 2004 and Vol.11, No.1, 2005 are on a common theme: Estuarine Ecology of the Eastern Ghats. They have attempted to draw attention to the importance of mangroves, especially in the light of Tsunami 2004 and its aftermath. An overview of six publications from the M.S. Swaminathan Research Foundation, Chennai, covering vital aspects of mangroves and wetlands and also on the ENVIS Forestry Bulletin [Vol. 4, 2004] entitled `Mangroves Special` published by Forest Research Institute is given hereunder:

***Ravishankar, T* and *R. Ramasubramanian*, 2004. Manual on Mangrove Nursery Raising Techniques, M.S. Swaminathan Research Foundation; Chennai, India. Pp 48.**

Propagation and planting of mangrove trees were considered as a responsibility of the Forest Departments but there is an increasing awareness that local communities must participate in this activity in the wake of recent storms and linkages between exudates from mangroves and sustainable fisheries. Mangrove Nursery Raising Techniques would strengthen livelihood and ecological security of coastal areas.

The book draws attention to the natural regeneration of mangroves, need for nurseries, selection of site and species, techniques involved in preparing the nursery and seed germination. The role of nurseries in participatory management and providing livelihood alternatives is also discussed.

***Ramasubramanian, R, Ravishankar, T* and *D. Sridhar*, 2003. Mangroves of Andhra Pradesh – Identification and Conservation Manual, M.S. Swaminathan Research Foundation; Chennai, India. Pp 67.**

Mangrove forests strengthen ecological and livelihood security of coastal areas and communities respectively. They provide protection against storms and promote sustainable fisheries. The book is aimed to be useful to forest officers, public and students in particular in conserving mangrove biodiversity.

A global, national and regional overview of mangroves, the practices (past and present) in management and long-term management of mangroves has been discussed. The book enumerates and describes the mangrove species providing keys to their families, genera and species.

***Selvam, V,* and *V.M. Karunagaran*, 2004. Coastal Wetlands: Mangrove Conservation and Management – Operational Guide 1 – Ecology and Biology of Mangroves, M.S. Swaminathan Research Foundation; Chennai, India. Pp 61.**

The publication is aimed at scholars, extension workers, Forest Department officials and members of local communities for a better understanding of effective Joint Mangrove Forest Management. The book discusses the rich biodiversity associated with Mangrove Ecosystems.