The Indian Ocean tsunami of December 2004 resulted in focused rehabilitation and restoration activities in the coastal zones of affected countries. Because mangroves afforded protection from the tsunami in some coastal areas, replanting mangroves was seen to be a panacea for all coastal problems, resulting in a rush of habitat restoration.

Although mangrove replanting appears to be simple and inexpensive, it is, in fact, complex and difficult. Mangrove ecosystems provide a range of valuable services - such as protection from tidal surges, prevention of flooding, purification of water – but these services ensue from a complex community of fauna and flora that interact to make up these ecosystems. Such complex systems are difficult to restore and many well-intentioned replanting projects failed, because they not only paid little attention to skills and technical knowledge needed to restore this complexity, but also focused on re-planting monocultures.

Secondly, this lack of knowledge resulted in unsuitable selection of sites, where, in many cases, pristine coastal habitats - such as sand dunes - were cleared for mangrove replanting or that they were planted in areas which never had mangroves before. These replanting projects were also doomed to fail.

Thirdly, even if species and site selection are technically sound, growth of species and restoration of a habitat, to a full complement of a functioning ecosystem with its attendant services, takes a long time.

Fourthly, and perhaps most importantly, using ecological restoration as a first line of defence for conservation, ignores the underlying causes of mangrove destruction and treats, as it were, the symptoms, not the cause. While replanting goes on at one site, great swathes of habitats are destroyed at another.
Existing threats:

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.

Post-tsunami reconstruction served to highlight a series of long-term issues, illustrating graphically over a short period of time, what has been threatening coastal ecosystems over the long-term.

There remains a pressing need for better coastal ecosystem restoration and conservation that address the underlying issues of coastal habitat degradation, rather than quick fixes. The BMZ project in Sri Lanka and Thailand attempted to do just that.

The BMZ approach:

The project to rehabilitate and conserve coastal ecosystems in Sri Lanka and Thailand, funded by German Federal Ministry for Economic Cooperation and Development (BMZ) used an ecosystem approach that employed a central, holistic approach of integrated coastal management, recognising that spatial, temporal, sectoral, political and institutional integration were all essential for success. It used ecological landscapes to define boundaries.

Although ecological restoration was one objective of the BMZ project, both teams focused sharply on capacity building as a tool to bolster conservation and protection of natural ecosystems. In both project areas, legislative complexities of governance and institutional structures made an ecosystem approach difficult. A recent review of the 12 principles from the UN Convention on Biological Diversity that describes the ecosystem approach, revealed an inherent weakness that these principles do not address issues related to the complexities and weaknesses of relevant institutions.

Both teams addressed this weakness but used two different approaches.

In Sri Lanka, the BMZ team concentrated on working with government officials to strengthen conservation and management. They

- trained land use department staff in GIS mapping allowing them to map inter alia, land use, state and private land.
- facilitated the formation of a District Level Coordination Committee (DLCC) comprising representatives from several community-based organisations, as well as officers from different government agencies.
- carried out an ecological assessment of the project area that identified ecologically important areas for conservation, as well as highlighted that certain high use conflict areas overlap with some of these ecologically important areas. A conservation framework for the project area is being developed.

The major outcomes of the project in Sri Lanka are the establishment of a local level mechanism for coordination and an initiative to manage the Lagoon resources through the establishment of a Lagoon Management Authority. The establishment of this Lagoon Management Authority, with full community participation, will lead to the institutionalisation of fisheries resources management initiatives. Coupled with participation from other key partners, such as the Forest Department, Wildlife Department and the Coast Conservation Department, this management body will allow for the holistic and comprehensive management of the Lagoon landscape.
In contrast, the Thailand BMZ team used a nested governance approach that worked to link the key stakeholders and communities to institutions at the grassroots level, focusing on social mobilisation and capacity building of communities. This allowed for the development of partnerships in a series of networks.

- Training was provided in the form of technical backstopping, financial management, study tours, learning visits and the formation of management committees.
- In this process of capacity building, communities were trained *inter alia*, in sea grass monitoring, soil and water conservation measures, *Nypa* thatching and GPS-based mapping.
- The project engaged youth at all sites, as being critical for future conservation.
- Once mobilised, communities were networked, to exchange experiences and ideas.

About 53% of activities related to interventions for developing rules and regulations, as well as conservation zones as the favoured approach, as opposed to pure rehabilitation.

The major outcome of the BMZ project in Thailand is that communities are now actively protecting and conserving their own landscapes, engaged in surveying their own biodiversity, monitoring catches, mapping ecosystems and assessing threats. What is more important, local level empowerment with knowledge has resulted in a powerful advocacy tool that is being used across the landscape.

In at least four instances, stakeholders partnered with government institutions to address key issues, exemplifying the nested governance approach.

The approach of the BMZ project in the two different sites has proven the efficacy of investing in human capital to strengthen protection, conservation and management of natural systems. It has demonstrated that promoting coordination, integration and management of natural resources works. It also shows that using a process-oriented approach that focuses on people as integral parts of ecosystems is critical for long-term conservation.

Addressing the underlying threats is a far better approach than closing the stable door once the horse is gone.