

LDC Workshop on National Adaptation Programmes of Action

Fact Sheet

Key Adaptation Options in Coastal Zones and River Basins

Overview

In many countries coastal zones are the most heavily populated area. They also represent many ecologically sensitive areas, and contains much of the economic development infrastructure, such as ports, fisheries and tourism. Coastal and marine ecosystems are vulnerable to rapid deterioration due to a combination of anthropogenic and natural factors.

Coastal zones are also recognized for their rich biodiversity and for the reproduction and raising of maritime and terrestrial fauna, as well as sea birds (fish-spawning, feeding, growth, rest and refuge, etc.). Mangroves, for example, have traditionally protected coastal regions in many countries both in terms of their physical function (anti-erosion, protection against storms, etc.) and their ecological function.

Flooding in low altitude zones, coastal land erosion, and siltation of major water bodies are on the increase in many areas. These hazards are also increased due to potential sea level rise, which increases salt-water intrusion in aquifers and low-lying water bodies, impacting freshwater availability. This in turn can result in displacement of populations, contamination of potable water sources and threatening the means of subsistence of the coastal populations, limiting the development options of the countries where the coastal zones contribute considerably to the economy.

Increasing awareness of climate change impacts on coastal zones is leading to demands for mainstreaming climate change considerations into any new policies and management structures concerned with coastal zone development.

Integrated coastal zone management

Integrated coastal management can take different forms depending on the local conditions and infrastructures. All relevant economic sectors have to be included both in the planning and the monitoring and evaluation stages. Involvement of local affected population has been shown to be of prime importance, both in terms of awareness building and of strategy development and implementation.

- Assessment of current coastal zone conditions: environmental, economic, demographic
- Assessment of impending climate change vulnerabilities due to sea-level rise and higher ocean temperature
- Establishing multisectoral planning and coordination group to guide the development of plans and programs

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- Awareness raising initiatives for local populations, policy makers and industry sector representatives
- Integration of climate change information and knowledge into other development planning processes (mainstreaming)

Integrated coastal zone management provides a useful framework for integrating various sectors and creating a legal and regulatory framework that promotes coastal integrity and resilience. Because the costs of adaptation in coastal zones can be high, particularly after the damages are felt, integrated coastal zone management also promotes a preventative approach. Other interventions to adapt to climate change in coastal zones include:

- Limiting beach dredging and sand extraction in coastal areas
- Preventing development in low-lying areas
- Undertaking coastal rehabilitation works (beach nourishment, reforestation, etc...)
- Building retention infrastructures (sea walls)

Protecting fragile coastal ecosystems

The impact of sea level rise on coastal region is known to be serious and short term, as well as long term measures have to be taken to adapt countries' coastal zones to these conditions.

Protecting coral reefs and mangroves is a primary and urgent strategy. They acts as buffer barriers protecting coastal communities and low lying areas from storms, tides, cyclones and storm surges and have important social and cultural importance. Replanting of mangroves and protecting and revitalizing coral reefs will be a short term measure with long term beneficial impacts. Among other short term measures are, for example, replanting of appropriate and adapted plant and tree species; protecting the existing coastline through barriers and other measures; reducing overfishing, in particular of vulnerable species.

- Assessment of conditions of mangroves and coastal reefs in preparation of revitalization strategies
- Building appropriate barriers to protect coast line in the short term
- Reviewing and revising fisheries policies to reduce overfishing and to protect fish and other sea species vulnerable to climate change
- Reduce pollution of coastal zone water resources
- Public awareness campaign to educate local populations, policy makers and others at to the need for urgent action in the protection of coastal zones in light of impending sea level rises.