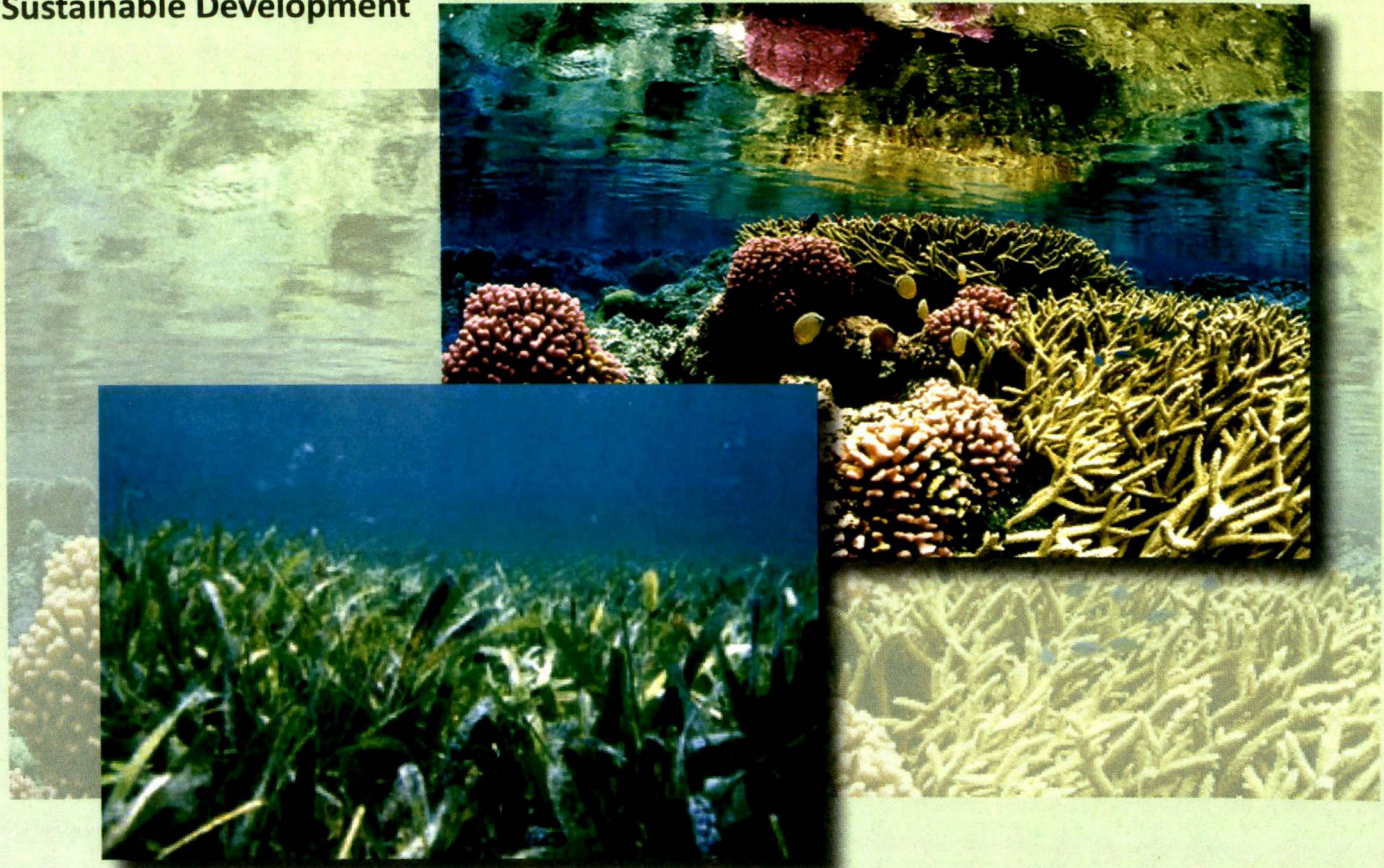


Coastal Resources and Sustainable Development

Sustainable Development



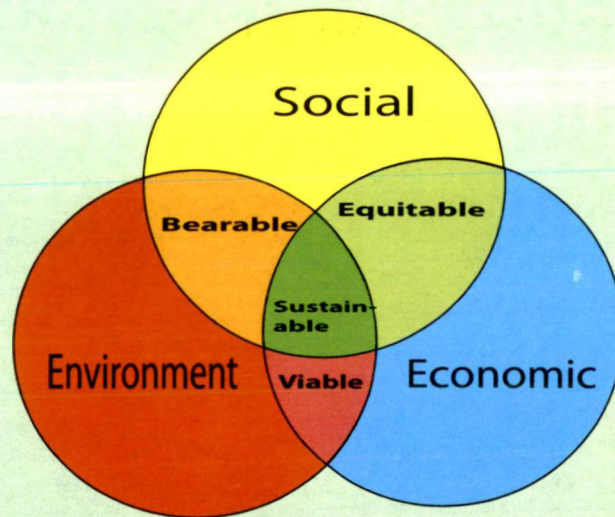
In 1987, the United Nations released the Brundtland Report, which included what is now one of the most widely recognized definitions:

"Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs." It contains within it two key concepts:

- the concept of 'needs', in particular the essential needs of the world's poor, to which overriding priority should be given; and
- The idea of limitations imposed by the state of technology and social organization on the environment's ability to meet present and future needs."

The development efforts of successive governments during the last several decades have led to growth in per capital incomes increase in standard of living of the people and decrease in overall poverty levels. However, Sri Lanka faces one of an environmental problem is coastal erosion.

Sri Lanka is a tropical island situated in the Indian Ocean to the south of India latitudes 6-10° north and longitudes 80-82° east. The island area of 65,610Km² and a coastline of approximately 1,600km. Since the declaration of the 200 nautical miles Executive zone in 1978, Sri Lanka has sovereign rights over 5 17,000 sq km of the ocean, which is almost 7.8 times the size of the land area of the Country. The country has an irregular, dissected topography comprising a board coastal plain and the central mountainous area rising to elevations of 2,500m.



Scheme of Sustainable Development: (It the confluence of three constituent/ parts. (2006)

Coastal habitats include coral reefs, estuaries and lagoons, mangroves, sea grass beds, salt marshes, barrier beaches, sandstone reefs, and dunes. Coral reefs in Sri Lanka can be found along 2-3% of the nation's total shoreline. Fringing type is the most common, which occur adjacent to the shore and grow from the sea floor.

Coral reefs are extensive in the Gulf of Mannar region and in the west of Kalpitiya area. They are also found in the southwestern, eastern and northern coastal waters. Apart from providing recreational values, they provide a number of use values (extractive values) such as ornamental fish, food fish and coral lime. In terms of biodiversity, coral habitats are of significant importance.

Sea grass beds are composed of rooted, seed-bearing, marine plants (halophytes). They occur in shallow, near shore waters that are sheltered from high wave energy, and in estuaries and lagoons. They are abundant along Sri Lankas coast, but no accurate information exists about their extents. They comprise of a highly productive habitat that supports many commercially important organisms. Barrier



beaches are accumulations of unconsolidated sediment transported ashore by waves and molded into a form that lies across a body of water and isolates it from the sea.

Salt marshes consist of herbaceous, salt-resistant plants growing in sandy or muddy tidal flats in arid areas, which are predominantly inundated by sea water. They occur mainly in areas where the dry season is prolonged, as in the north, northwest, northeast and southeast. The major function performed by them are the provision of nutrients to near shore waters, provision of bird habitats, supply of fish seed for coastal aquaculture, and absorption of storm water runoff. They are not heavily utilized at present.

Major Environmental Issues Related to the Coastal Resources Sector

One of the major problems is the lack of or poor knowledge of the responsible agencies on the coastal and marine resources and their rates of exploitation. A proper management plan of the resources cannot be effectively undertaken unless mapping of resources is done.

Most of the coastal resources are said to be heavily exploited and there are complaints that stocks of some species are on the decline. In respect of rates of exploitation of marine resources, recent resource studies using catch and effort data revealed that coastal resources have been biologically over-exploited i.e. actual yield exceeding the maximum sustainable yield. Studies carried out along similar lines in the southern near-coastal fisheries (up to 15 km from the shore) revealed that while coastal fish resources in Matara have been biologically over-exploited, Galle and Hambantota near-coastal fisheries were being operated below the maximum sustainable yield.

The conflict in the north and the east, which accounts for around 60% of the total coastline of the island, has had adverse impacts on the coastal and marine resources and habitats of the sector during the past two decades. This situation has created problems to overexploitation of the coastal and marine resources in the other coastal areas of the Sri Lanka.

Improper application of fishing technologies has destroyed several fishing grounds. This development has led to deterioration of coastal and marine resources and habitats in many coastal areas. For example, due to heavy rates of exploitation, a serious decline in lobster landings in the southern coast has been noted. Crabs (*Scylla serrata*) is another rock dwelling fish, which is now gaining commercial importance. Fattening of crab for export is becoming a popular activity among fishermen in the north-central province. Squid and cattle fish are also caught in Sri Lankan waters, but mostly as incidental catches.

Degradation of the coastal and marine environment, which includes coastal pollution and the threats to the sustainability of coastal habitats, has emerged as a major problem adversely affecting the fishing industry. This needs to be addressed as a matter of high priority. Tsunami waves, which struck the coastline of Sri Lanka in 2004 has devastated the marine and coastal resources reversing much of what was achieved in the marine and coastal sector in the past two decades. It destroyed 54% and damaged 23% of the fishing craft with most of the engines and gear. Tsunami also destroyed 10 out of 12 harbours and damaged most of the infrastructure, and coastal habitats and resources specially mangroves, coral reefs, and sand dunes.

There are approximately 60,000 industrial establishments in Sri Lanka of which two thirds are located in the coastal region. Most industries started prior to the establishment of Greater Colombo Environmental Commission (GCEC) were not provided with liquid and solid waste disposal and other basic

infrastructure facilities. Analysis of water from lagoons and estuaries has indicated the presence of high levels of agricultural chemicals.

Ground water too has been polluted due to influence of NO_3^- , other agrochemical and fecal bacteria²⁵. In Sri Lanka, the direct ocean disposal of waste material is limited to sewage waste, dredged material, and industrial and domestic wastes, suspended solids, toxic metals, fecal coli forms and other potentially pathogenic microorganisms. The main Pollutants are urban, domestic, industrial waste, agricultural waste, oil spills and solid waste and other wastes from fishing vessels and ships.

Current Status on the National Level Implementation of Activities Related to Coastal Resources towards Sustainable Development

The “*Mahinda Chinthana*” policy document has articulated a strategy for the fisheries sector, a sub sector under coastal and marine resources. The Fisheries sector strategy envisages “private and public participation in economic and social development within a market friendly, export oriented and competitive economic policy Framework to complement each other’s contribution, maximize value addition, employment creation and environmental protection”. In case of several proposed projects, the line Ministry or the agency concerned have had some consultations (mostly informal) with some prospective donor agencies. However, for most projects, the source of funding is yet to be realized.

Sri Lanka has signed the UN Convention of Law of the Sea in 1994. Sri Lanka also ratified the MARPOL Convention on Ship-generated Waste as well as the IMO Convention on Marine Pollution. Waste oil generated from ships is covered under the MARPOL Convention. The Marine Pollution Prevention Act (MPPA) No. 59 of 1981 gives provisions to take action to prevent, reduce and control of pollution in Sri Lankan waters in order to give effect to international conventions for the prevention of pollution of the sea, under which it is an offence to dump waste into the oceans of Sri Lanka.

The MPPA (now named as MEPA - Marine Environment Protection Authority), which is responsible for the implementation of the above mentioned conventions and acts, has taken the initiative to prevent disposal of ballast water and ship-waste into the Sri Lankan waters. In the meantime the Coast Conservation Act No 57 of 1981 has authority to prevent waste dumping in the coastal areas.

COASTAL RESOURCES SECTOR

Strengths

- Availability of a legal framework for coastal resources management
- Availability of a separate government agency for coastal resources management and clear Vision/Mission statements to give direction to coastal resources management
- High degree of professional expertise on the coastal sector (Universities, NARA, CCD, CEA)
- Availability of several policy documents Such as the Coastal Zone Management Plan (CZMP), Coastal 2000, Special Area, Management (SAM) Plans, and Coastal Erosion Management Plan
- Availability of database and information system
- Country membership in international/regional organizations
- Availability of strong EIA procedure for coastal area developments projects
- International reputation on coastal resources management initiatives taken by the Sri Lanka

Weaknesses

- Shortcomings in the legal framework
- Unavailability of a proper coordinating mechanism with between agencies and organizations

- in other sectors for implementing activities, especially in coastal zone regulation
- Insufficient resources for managing the coastal zone
- Unavailability of recent information on coastal habitats and their functions
- Legal issues pertaining to the coastal habitats and resources, which are occurring outside the legally defined coastal zone
- Lack of capability and capacity to control illegal conversion of coastal wetlands to other development activities
- Lower priority given for the coastal habitat conservation in developmental policies
- Unavailability of proper zoning plans for locating high polluted and environmentally non-viable development activities away from the environmentally sensitive areas
- Unavailability of information and maps indicating locations of coastal habitats, their locations, extent, and quality

Opportunities

- Possibilities to resolve the legal deficiencies
- Availability of many agencies to do research on coastal issues for better coast conservation planning and implementation
- Foreign assistance programmes that support the coastal resources management activities' and organizational activities
- Availability of international guidelines/models for- adaptation
- Facilitation of participatory co-management in the planning process
- Incorporation of international guidelines for coastal zone planning and management

Threats

- Pressure for over-exploitation of coastal resources
- Non-compliance of the legal framework by national entrepreneurs
- Climatic Change and natural disasters

Proposed Strategies

- Promote the principles of sustainable resources utilization
- Promote co-management of coastal resources through participatory management plans.
- Improve the coastal resources management framework by amending and updating the laws and regulations.
- Create awareness on the needs for coastal management practices, Conduct training workshops
- Reduce pressure on coastal resource use by diverting excess pressure to under -- exploited areas.
- Enter the community with full-time professional facilitators and community organizers to liaise with community stakeholders, organize education programs and facilitate the planning process.
- Organize resource management core groups.
- Draft management plan through community involvement, determine indicators for monitoring and conduct cost benefit analysis.
- Implement pilot projects while planning continues.

References:

Coast Conservation Department (1997). Coastal Zone Management Plan Sri Lanka Riznychat, W and P. Schmidt (1992).

Administrator of pollution licensing by the Central Environmental Authority, National Resources and Environment Policy Project Colombo -

http://pti.wikipedia.org/wiki/sustainable_development

<http://nsgl.gso.uri.edu/hvashu/washuw99003/9-Tantrigama.pdf>

– **Geological Survey & Mines Bureau**