

Defining and Demarcating Coastal zones in Sri Lanka Procedure, Challenges and What needs to be done?

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Sri Lanka has a coastline of approximately 1620 km excluding the shoreline of bays and inlets.



Significance of Sri Lanka's Coastal Regions

- ❑ Coastal region is located within 74 DS Divisions
- ❑ Coastal zone lie within 14 the administrative districts
- ❑ 25% of land area is located within the coastal region
- ❑ The coastal region accommodates 25% of the total population. (4.6 million)
- ❑ Contain majority of large cities & urban areas
- ❑ Contain significant mineral resources
- ❑ 64% fish production provide from the coastal fishery
- ❑ Most of Tourist hotels are located within the coastal zone (70% of hotels)

What is the Coastal Zone

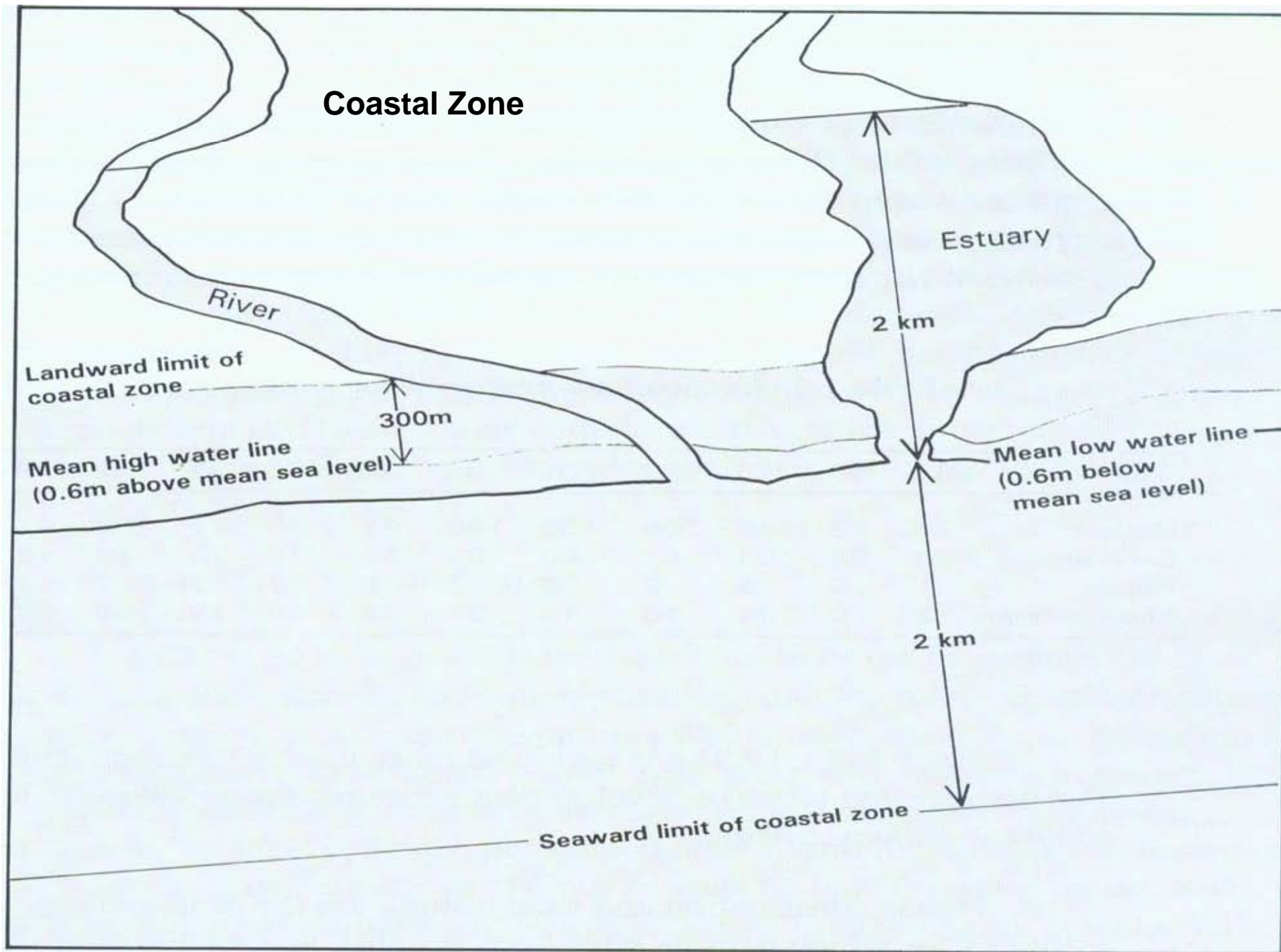
The coastal zone is the interface where the land meets the ocean, encompassing shoreline environments as well as adjacent coastal waters. Its components can include river details, coastal plains, wetlands, beaches and dunes, reefs, mangrove forests, lagoons, and other coastal features. The limits of the coastal zone are often arbitrarily defined, differing widely among nations, and are often based on jurisdictional limits or demarcated by reason of administrative ease.

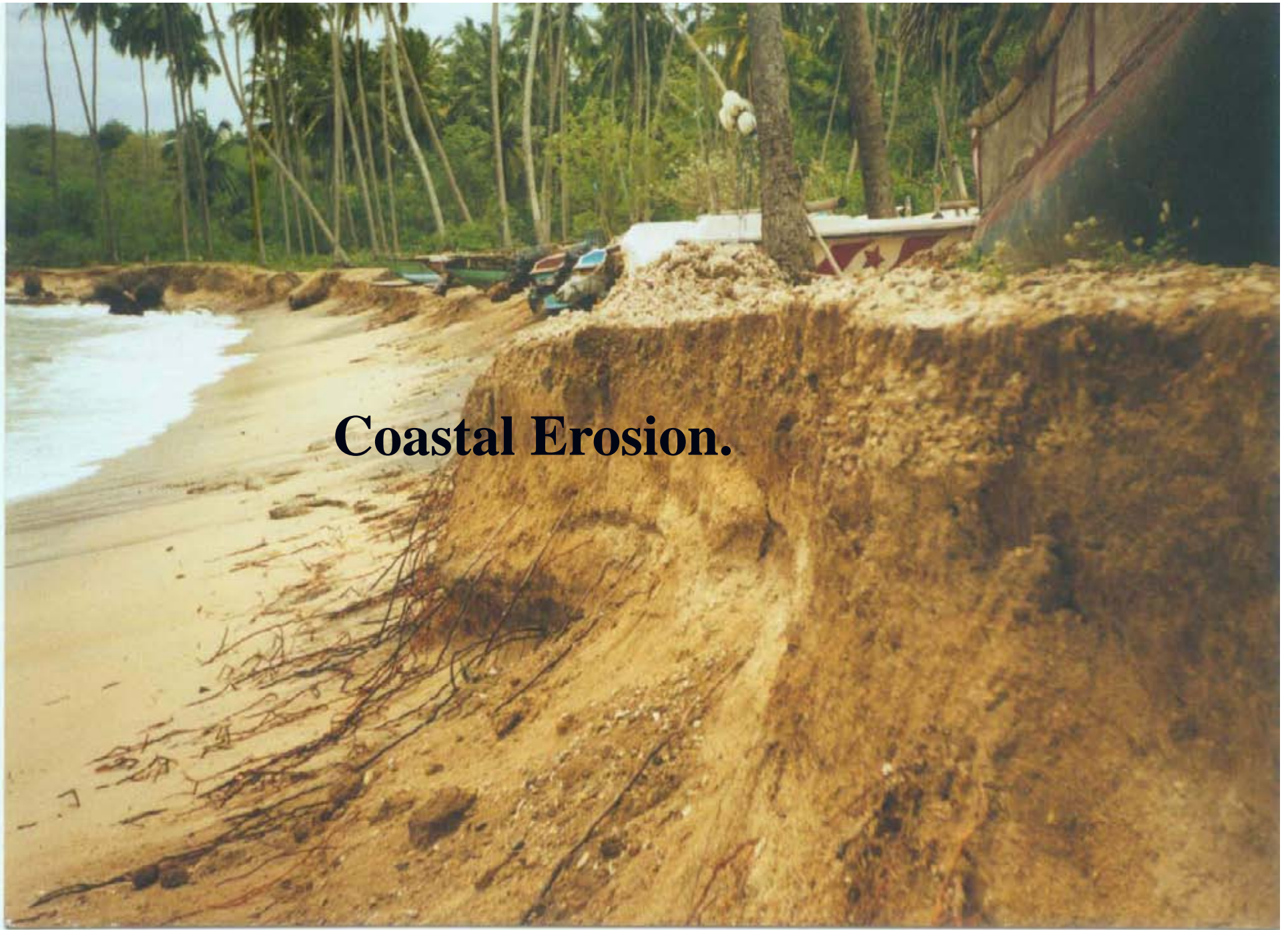
Why very difficult to define Coastal Zone?

- Coastal area is a dynamic zone with frequently changing biological, chemical and geological attributes
- It includes highly productive and biologically diverse ecosystems that offer crucial nursery habitats for many marine species.
- Coastal zone features such as coral reefs, mangrove forests, and beach and dune systems serve as critical natural defenses against storms, flooding, and erosion.

Coastal Zone

- Area lying within a limit of **three hundred (300 m)** meters land wards of the mean high water line and
- A limit of **two kilometers (2km)** seawards of the mean low water line and
- In the case of **rivers, streams, lagoons or any other body of water connected to the sea** either permanently or periodically





Coastal Erosion.

Procedure followed by Sri Lanka to determine the Coastal Zone

- Internal discussion with the CCD officers to identify the strengths and weaknesses of the Department
- Identify the major issues to be resolved in the CZ
- National level workshops to prioritize the coastal issues to be solved as soon as possible
- National level workshop to finalize the CZ
- Enacted a separate Act as Coast Conservation Act and included CZ in the definition of the Act
- Preparation of the national CZMP and included a separate chapter as a regulation chapter

Regulatory Mechanism

- Permit System
- Prohibited Activities
- Setback areas
- Monitoring of Compliance
- Environmental Impact assessment and Initial Environmental Examination

" Development Activity "

- Any activity likely to alter the physical nature of the Coastal Zone in any way and includes,**

Development activities within the coastal zone for which a permit is required from the CCD.

- Dwelling houses and related structures
- Tourism, commercial and industrial structures
- Recreational and/or water sport facilities
- Harbour structures and navigation channels

Contd..



- Recreational and grading
- Construction of Conveyance lines
- Construction of mining and breaching related to flood control or hazard control by any private individual or group
- Any other activity likely to alter the physical nature of the Coastal Zone

**Activities that may be engaged in
without a permit within the coastal
zone.**

Fishing





Cultivation of crops that do not destabilize the coast

Construction and maintenance of coastal protection works



IMPLEMENTATION OF COASTAL SET BACK FOR DEVELOPMENT ACTIVITIES

**“Set back is a geographical strip with in the Coastal Zone
which certain development activities are prohibited or
significantly restricted”**

Objectives of the Setback

- Protection life and property from adverse impacts of coast erosion and storm surges.
- Minimizing public investment in coast protection works
- Protecting and enhancing the scenic value of the coastal environment
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- Protecting vulnerable coastal habitats and unique natural sites,
- Providing buffer zones around archaeological, historical and cultural sites within the Coastal Zone
- Minimizing user conflicts arising from different activities that take place in the Coastal Zone

Contd.

- Ensuring public access to and along the coast (vertical and lateral access)
- Maintaining consistency among national and regional laws and plans, and
- Ensuring consistency between national development goals and environmental objectives

Set back Areas

A setback area is a geographical area on strip within the coastal zone within which certain development activities are prohibited or restricted. The entire setback area is divided into

- Reservation area
- Restricted area

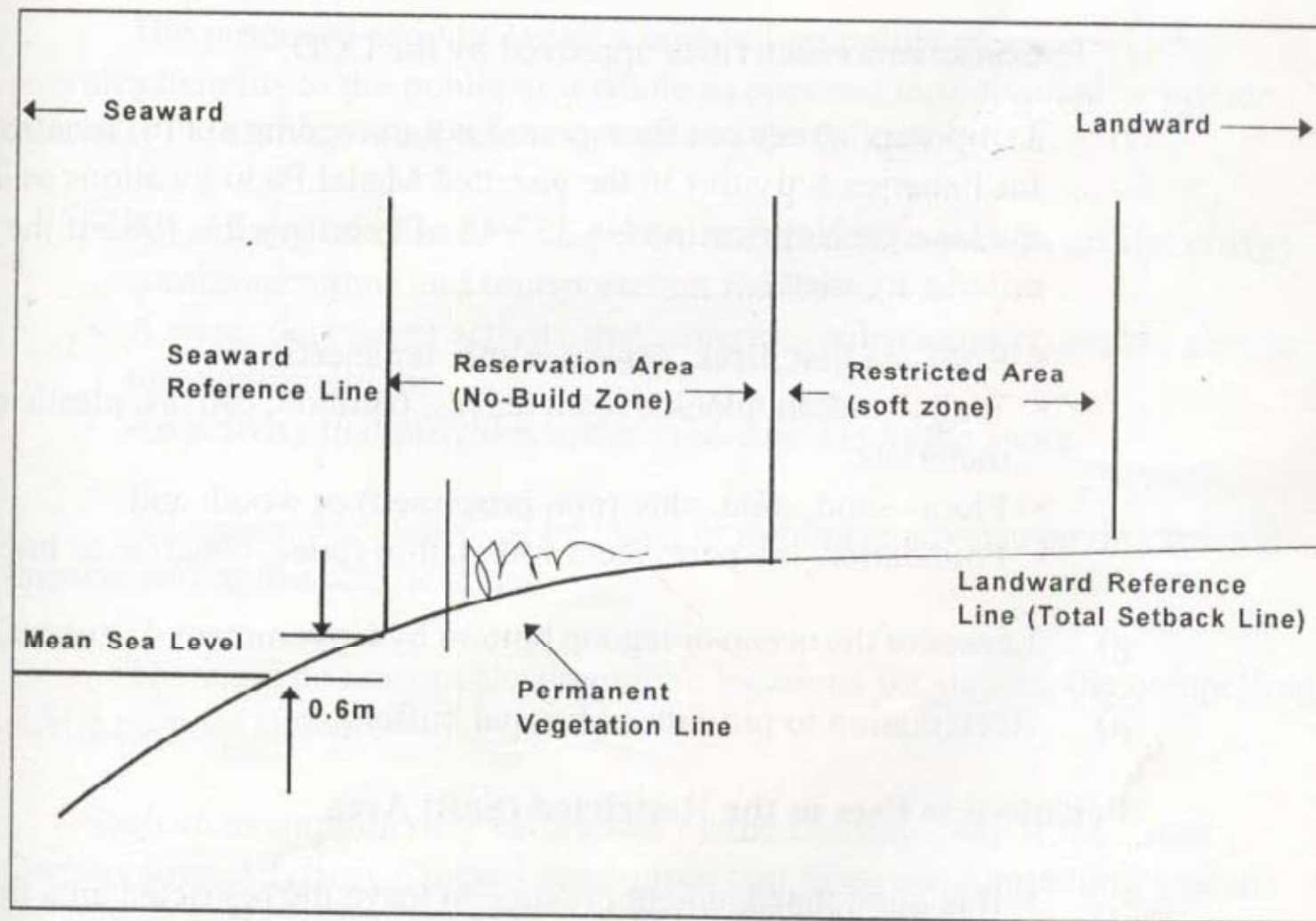


Figure 6.1 Relative locations of setback areas within the coastal zone

Reservation and Restricted area of setback

- Reservation Area is nearest to the shoreline and corresponds to a “no build zone”
- Restricted Area (or soft zone) can be use for a few low impact activities such as small dwelling units.

List of the set back area in North and East

Area		Reserva- tion area	Restricted area	Total set back area
Murugatena Lagoon to Kandaraj	Potuvil	30	50	80
Kandaraj to Tambiluvil	Potuvil - Tirukkovil	35	40	65
Tambiluwil to 228 Mile post Cemetery	Tirukkovil	45	80	125
228 Mile post to Periya Kallar	Trukkovil-Kalmunai	25	40	65
Periya Kallar to Ondachchimunai	Kalmunai	45	80	125
Ondachchimuna to Kallady	Kalmunai-Batticaloa	20	30	50
Kallady to Bar Light House, Batticaloa	Batticaloa	45	80	125
Bar Light House Batticaloa to Kalkudah	Batticaloa Kalkudah	30	50	80

Contd.



Procedure followed by the CCD to determine the Set-backs

- Determination of the demarcation criteria
- Conducting several Surveys to identify the deference geographical, biological, ecological and socio- economic features
- Conducting district level consultation meeting to refine the proposed setbacks.
- Included the set-backs in the CZMP and gazetted.

Criteria used by the CCD in the demarcation of setbacks are given below :

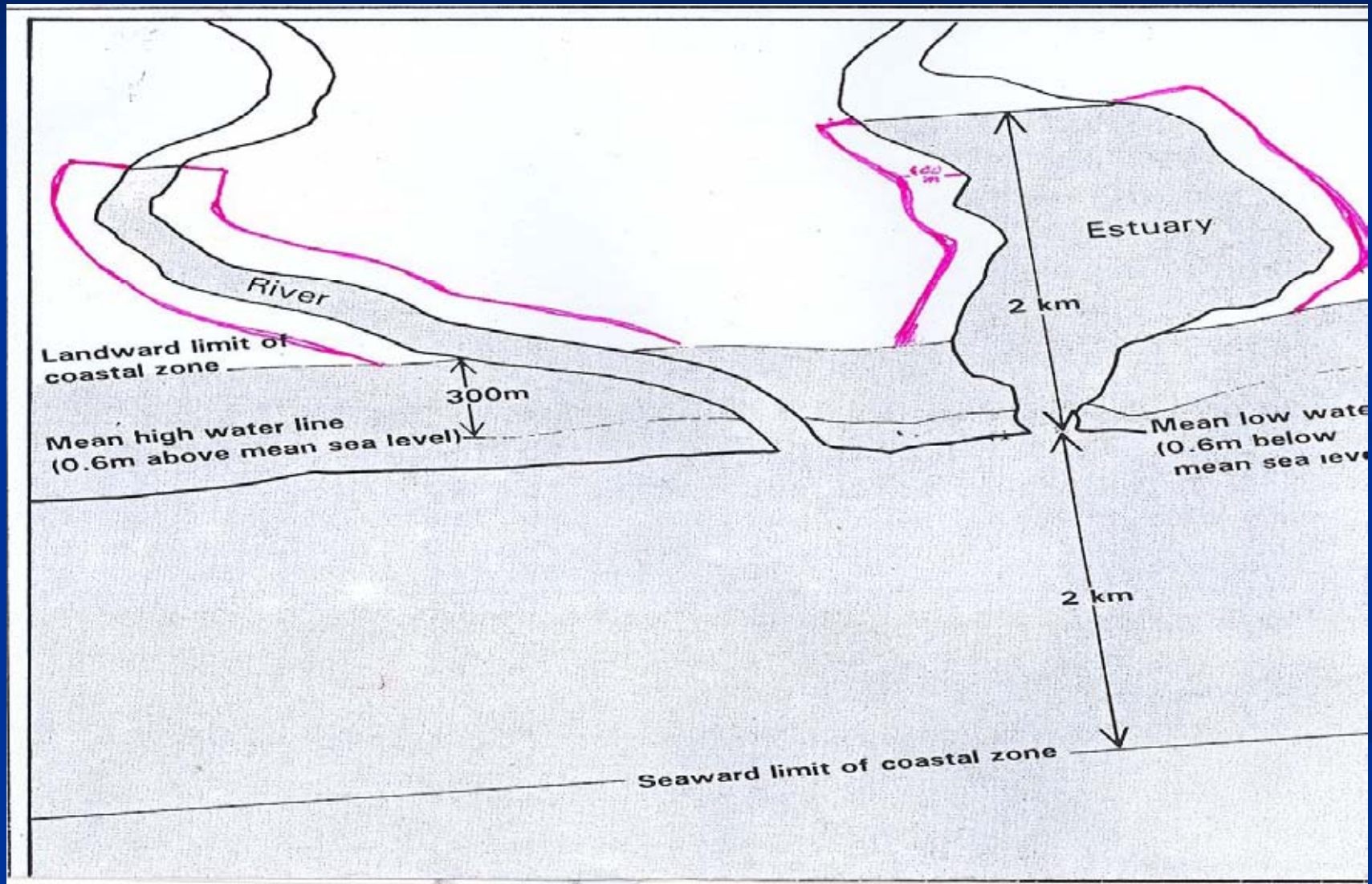
- Coastal erosion rate
- Significance of cultural and archaeological sites
- Level of user conflicts
- Statutory limitation
- Special Area Management sites
- Extent of coast protection measures carried out
- Protected areas
- Exposure to extreme natural hazards such as cyclones, storm surges
- Geomorphologic characteristics
- Vulnerability of coastal habitats
- Significance of other natural characteristics such as scenic beauty, naturalistic and recreational values
- Level of development



What are Challenges to implement the Coastal Zone and Set-backs

- How to manage coastal resources with narrow coastal zone?
- How to meet development needs with limited coastal zone and set-backs?
- How to control coastal pollution?
- How to minimize the climate change impacts and disasters in the coastal zone with limited CZ

How to manage coastal resources with narrow coastal zone?



with limited coastal zone and set-backs?

Present status of the Coastal area in Sri Lanka

- Total Coastal length is 1520 km (Excluding lagoons)
- 267 km of Coastal areas have been protected using hard structures by the CCD
- More than 350 km of coastal areas are wildlife parks or protected coastal areas
- High sensitive areas are more than 280 km
- Anchorages and fishery harbors are 14 km (excluding landing sites)
- Tourist areas are more than 40 km
- Available area for development 569

Available coastal area for new Development is 469 km

- Requirements to increase room capacity from 17,000 in 2011 to 35000 rooms in 2016
- To Increase fisheries production double from 2011 to 2015 through providing Fishery harbors and Anchorages
- Provide recreational facilities for local tourists
- Limits developments in highly vulnerable areas



Protected Areas

- Yala national park From Palatupana to Panama
- Bundal park
- Kalamatiya Sanctuary
- Wilpattu National Park

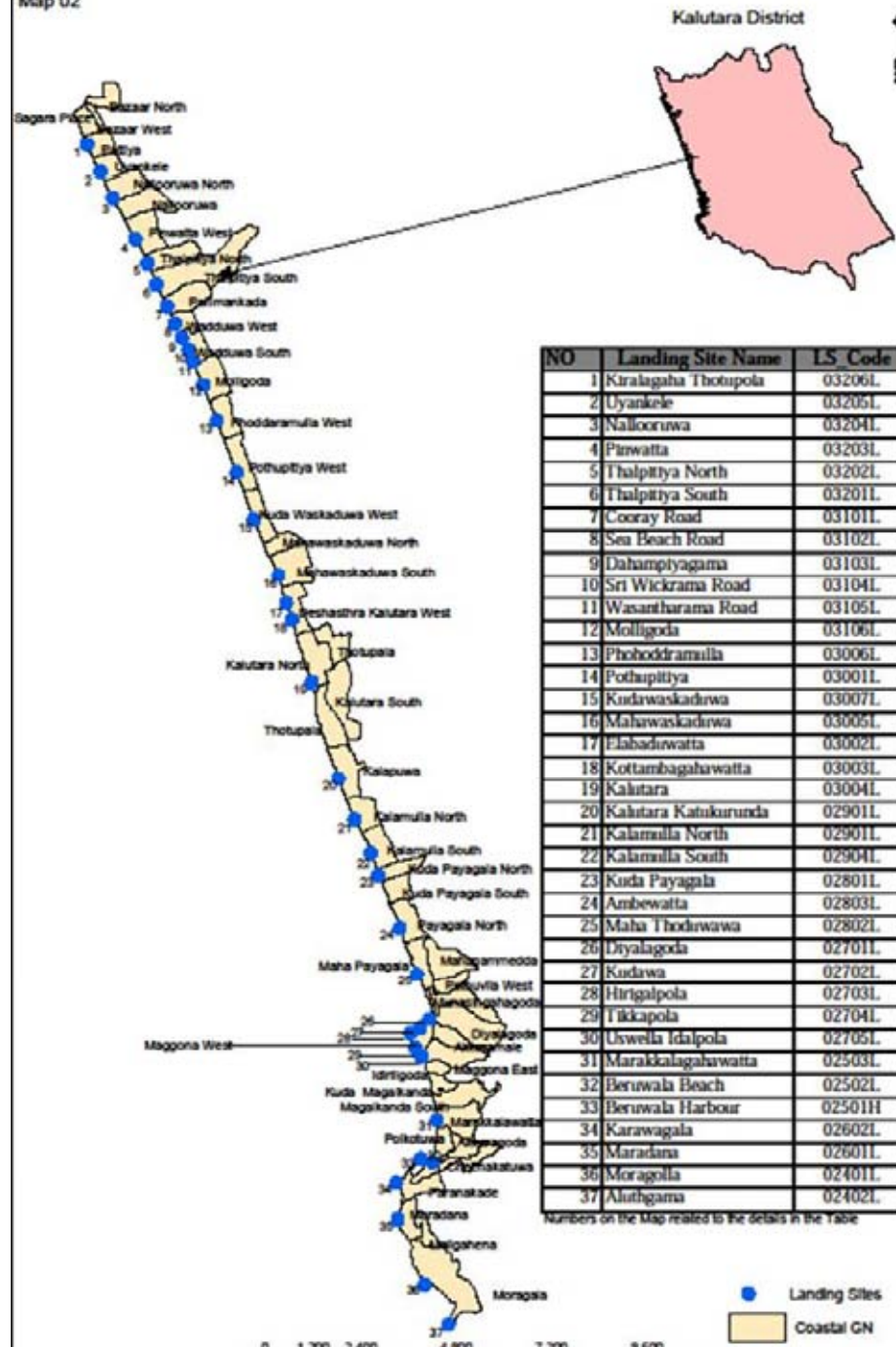
Sensitive Areas

- Coral Reefs
- Sand Dunes Hambantota to Pottuvil ,
Malalkadu, Kalpitiya to Palavi
- Lagoons and Estuaries
- Sea Grass Beds
- Salt Marshes
- Mangroves

Fisheries areas

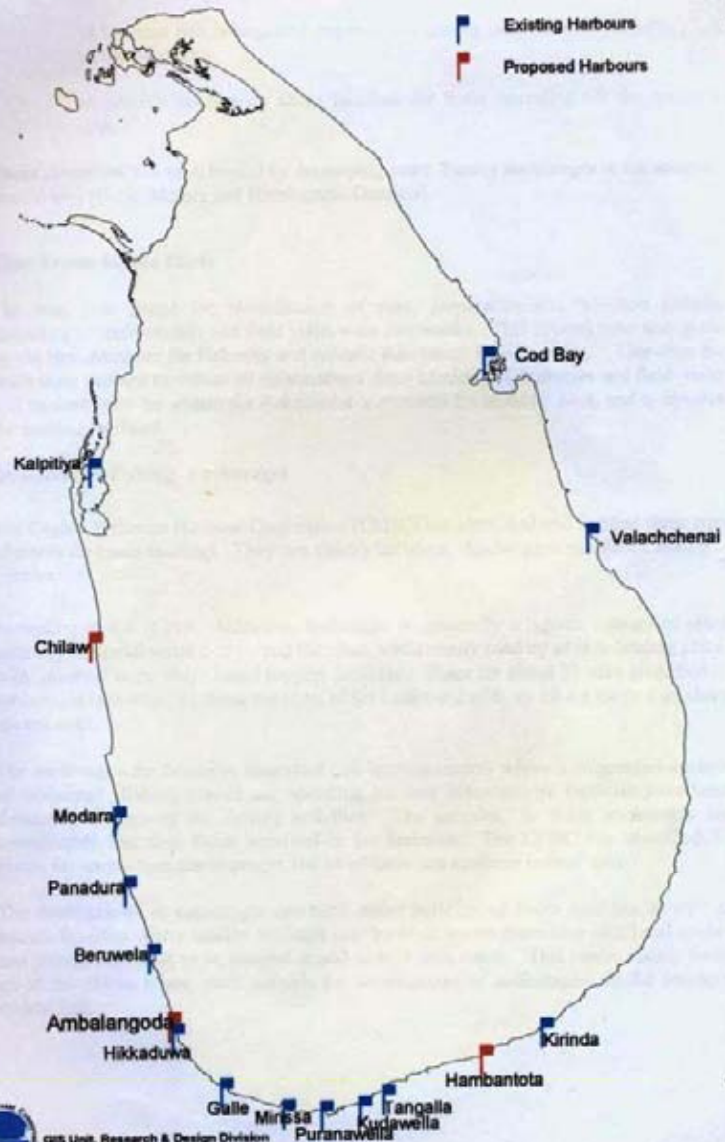
- Fishery Harbors
- Anchorages
- Landing Centers

Map 02



Map 1

Fishery Harbours in Sri Lanka



Infrastructure Demand and Supply for coastal tourism

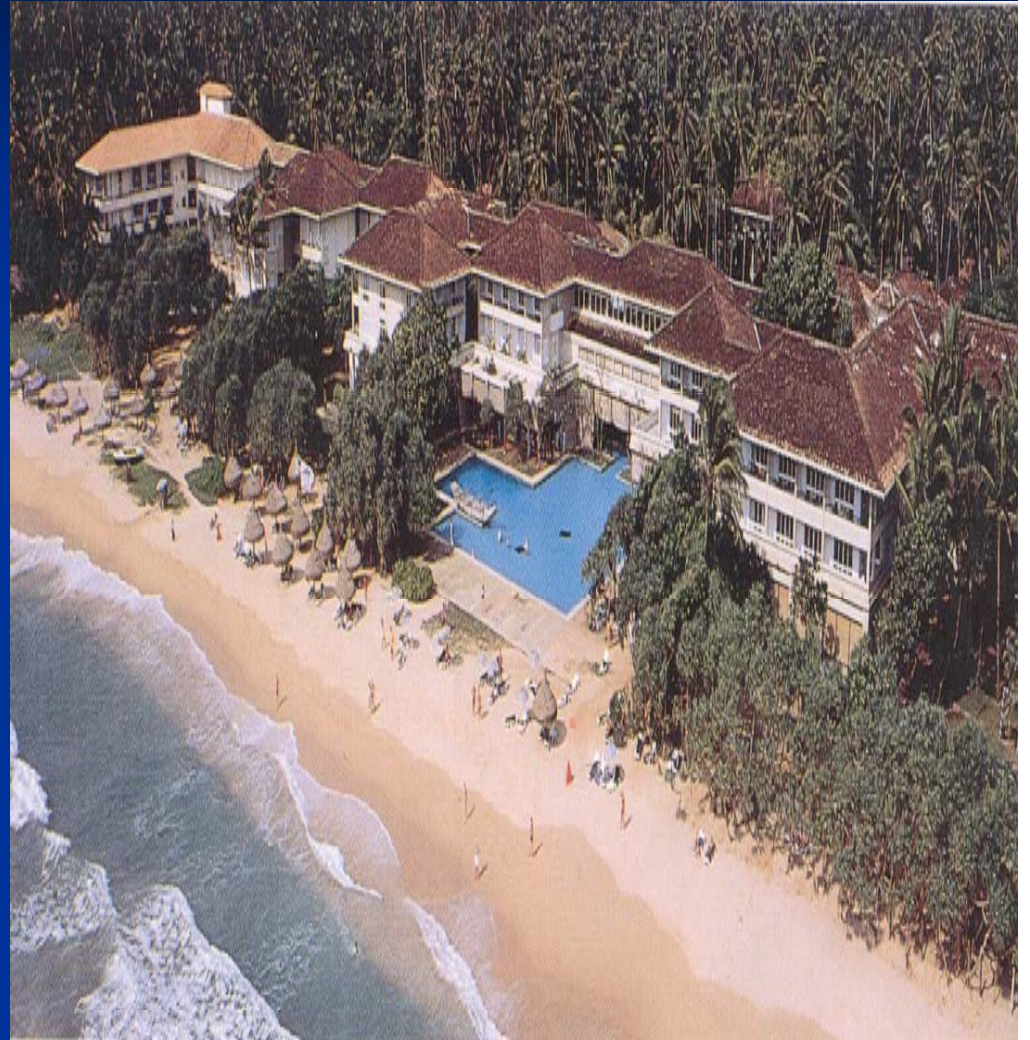
- Projection of Tourist arrivals is one million and increased 250,000 per year
- Number of rooms available in Sri Lanka in 2013 is nearly 25,000
- Room requirements to accommodate 250,000 is 42,000
- Can coastal area accommodate more tourists?





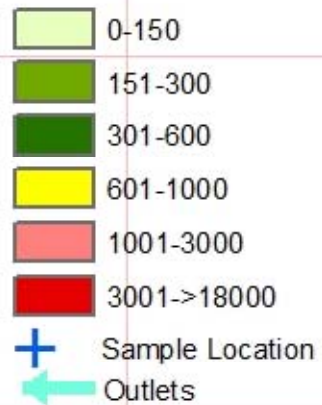
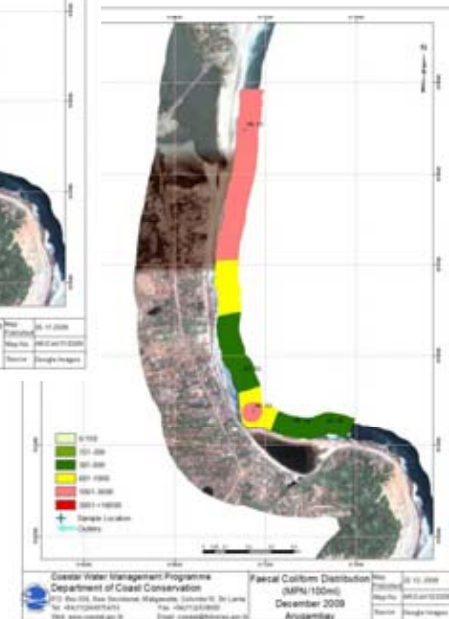
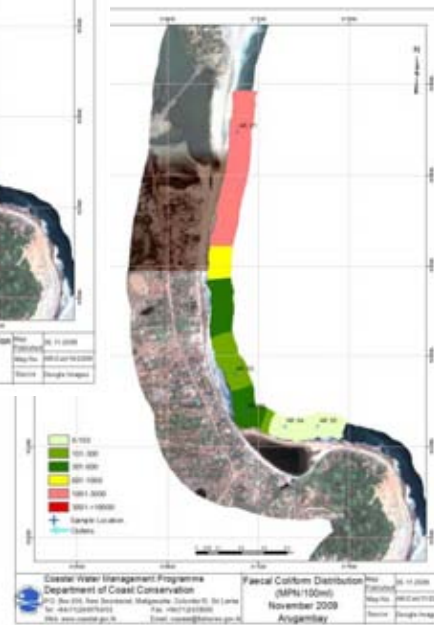
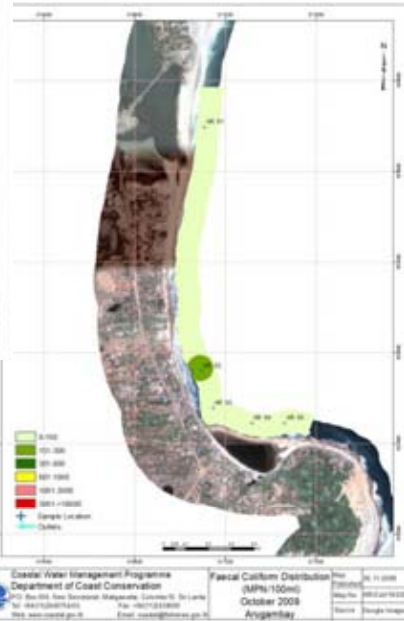
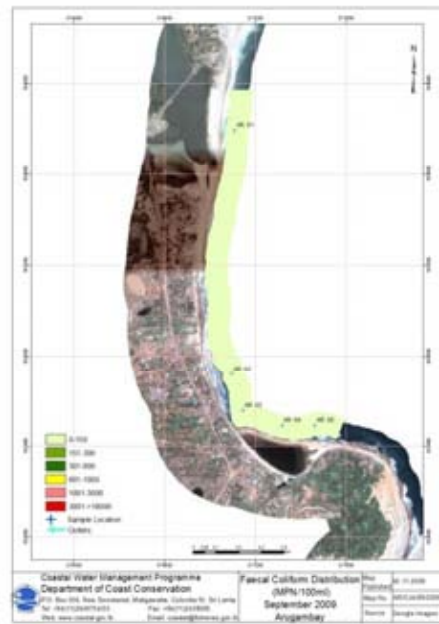
Set back is the prohibited area for the certain development activities or significantly restricted area.

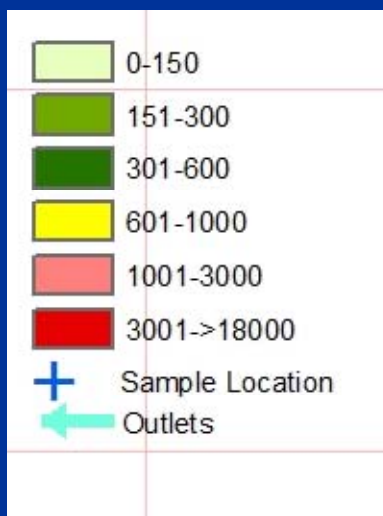
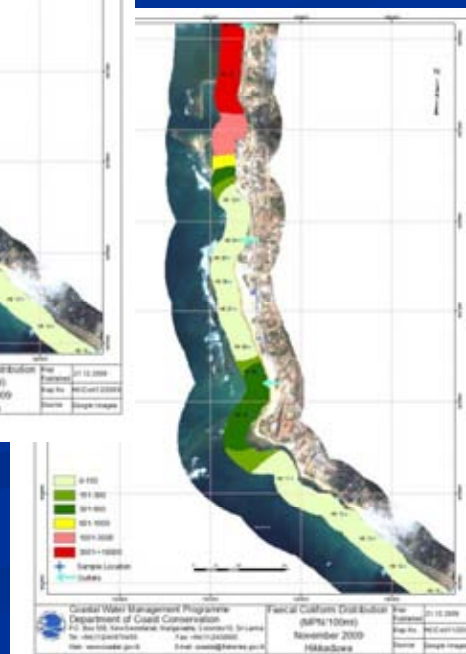
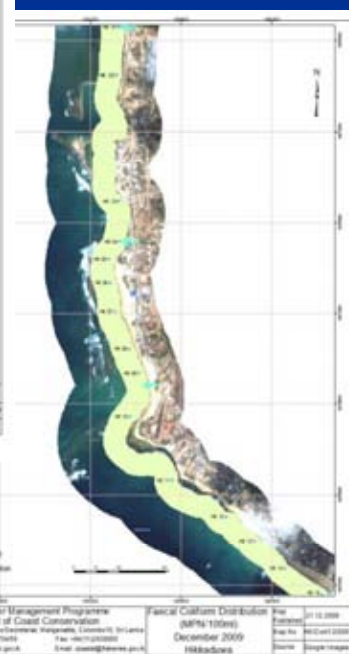
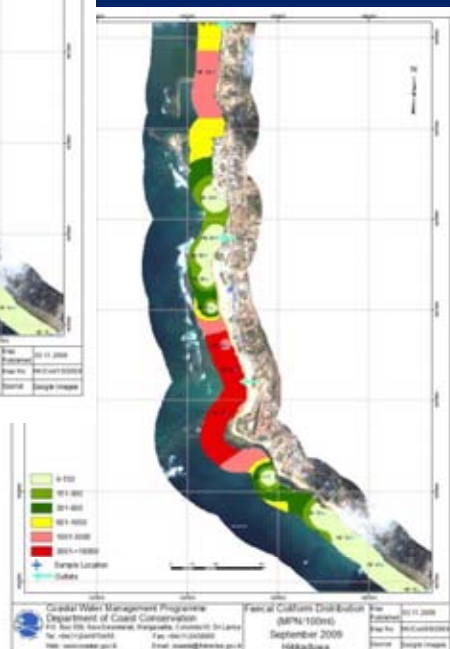
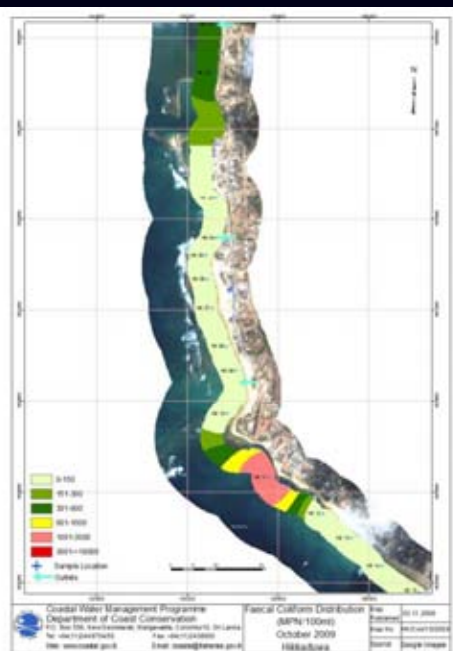




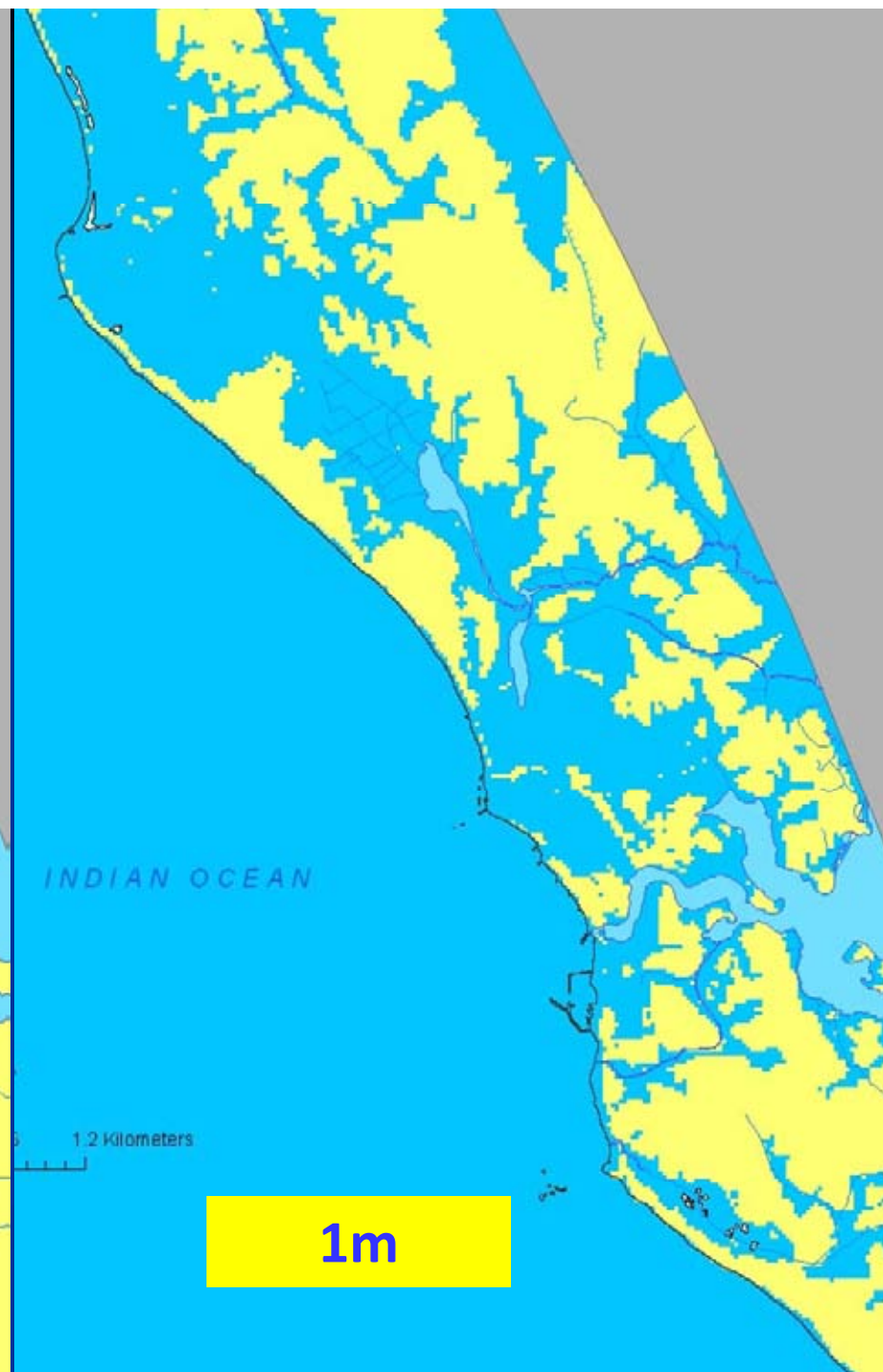


How to control coastal pollution?





How to minimize the climate change impacts and disasters in the coastal zone with limited CZ









What need to be done?

For Coastal Resource management

For Coastal Resource management

- We have to involve a system to **PARTICIPATE** of all stakeholders in achieving a **SUSTAINABLE** development of the Coastal resources through an **INTEGRATION** of all the activities in the CRM area

For Climate changes and
disasters

ADAPTIVE RESPONSES FOR THE MANAGEMENT OF COASTAL AREAS

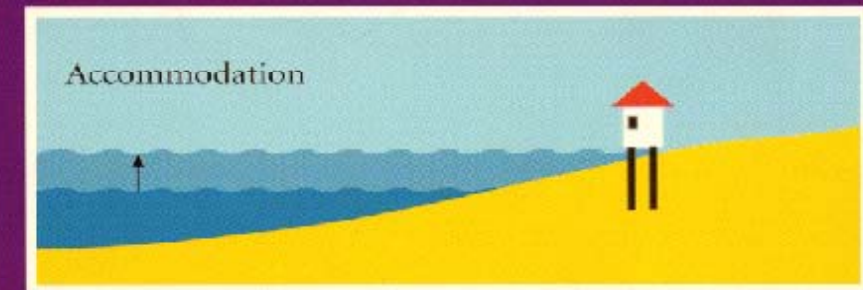
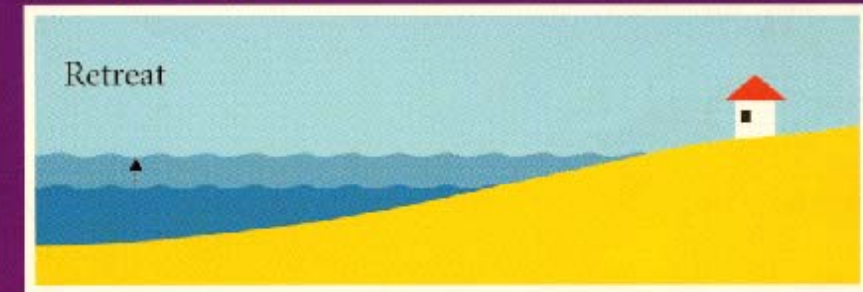
- Retreat

- Accommodation

- Protection



Adaptive responses:



Protection

- Hard Solutions
- Soft Solutions





Hard Solution

- Will solve one problem but create many other issues
- Very short time immediate Solution
- But cost effective

Soft Solutions

- Implementation of the Setback for new construction
- Rehabilitation of ecosystems
- Implementation of the Building guidelines
- Maintaining a green belt
- Preparation and implementation of the zoning plan
- Very effective awareness programme

Stable Coastlines
Natural Protection
Woodlands



Stable Coastlines Natural Protection – Coral Reefs











Coast protection - Negombo

Dune Stabilization



Planting of trees and other vegetation



Advantages of the Soft solutions

- Minimize the user conflicts
- Long term solutions

Disadvantages of the soft solutions

- Relatively high cost
- Technology
- High maintenance cost
- Capital cost



Thank You