The coastal zone is important for location of industry, transport links, agriculture, fisheries, tourism and urban development. It is constantly changing due to erosion, accretion, and flooding, all of which threaten human use of the coast. It is essential that we understand the way in which this complex area functions so that we may manage it effectively to minimize its dangers and maximize its benefits. A central concept in developing such an understanding is the sediment cell.

A sediment cell serves two purposes:

- It is the basic functional unit of the coast. Within its boundaries coastal processes act as a coherent, integrated system. An understanding of the way in which this system functions allows us to identify the impacts of development or management and to take action to mitigate such impacts.
- It acts as a self-contained unit so that any development within the sediment cell will have a minimal impact on areas outside its boundaries.

Coastal Sediment cells are classified as Primary Cells based on long term geomorphological features and Sub-Cells based on short term coastal processes.

**SEDIMENT CELLS ARE LENGTHS OF DISCRETE, FUNCTIONALLY SEPARATE COASTLINE, WITHIN WHICH LONGSHORE DRIFT IS LARGELY SELF-CONTAINED**
Findings

- West coast of India is delineated into 10 and east coast into 17 primary cells of varying coastal lengths.
- The 10 primary cells of West coast were further divided into 21 sub cells and 17 primary cells of the east coast were divided into 39 sub cells.
- Most of the cell boundaries along the west coast were bounded by hard coastal headlands while major rivers formed most of the cell boundaries along the east coast.
- Cell boundaries along the east coast are located at the mouths of major rivers indicating the general process of sediment movement along this coast.

Recommendations

- The sediment cell, once defined, provides the basis for a behavioral model, which, in essence, describes how the coast works within the cell boundaries.
- This in turn makes it possible to develop practical measures for the coast that will deliver objectives of the community with minimum interruption of natural processes, in other words sustainable development.
- These practical measures are set out in the Shoreline Management Plan.
- It is advisable to implement any anti erosion strategy into a broader perspective.
- With sediment cells as a base, ICZM Plan is prepared, setting out the collaborative, integrated objectives of all stakeholders, communities and managers and the means of its delivery.
- Within this ICZM Plan nests the Shoreline Management Plan as a vital but subsidiary unit, designed to deliver the objectives of ICZM in a sustainable manner.