

## Abstract

Beach morphodynamics is the incoherence and synergic co-modification of intertidal seashore surf zone morphology and the hydro-dynamic elements embracing the wind, beach gradient and sediments. However, the instrumentation and dynamism of sand dunes as a sedimentary depositional circumstance likewise act diversely in varieties of land type by process variables. Such ceaseless change of sedimentary accretional condition over time develop the specific land surface upheld by tropical floral structure and community pattern based on available moisture condition & wind regime. The absence of vegetation from this natural built up veneer increases the ardor of surface stability of sand dunes. Human proceedings with contrasting livelihoods and tourism activities enter into the flow as modifying agents. The eventful fate of the tourism sector evolution on the basis of local tourism products relies on variable conduct of temporal and spatial substitution on the sedimentary depositional facet. This buoyancy will deliver and effect over the recreational advancement, if the climate change initiated coastal disarray accelerates steadily in the near future. This study is an attempt to asses the rational behind the peril environmental change, geomorphic capriciousness and livelihood diversity over the back drop of serene Mandarmani coast of West Bengal. The main aim is to categorize sediment transportation budget in accordance with micro-surficial features driven by hydrodynamic parameters. The very importance of the geomorphological consequences is in the juxtaposition of fluvio-tidal and marine processes superimposed upon Holocene marine transgression and shoreline progradation. The rhythmic seasonal shift from dissipative to reflective nature portrays an extensive characterization of the beach-dune complex. Highest tolerable species varieties must be preferred over casuarina for dune stabilization. Integrated Coastal Zone Management is the only option to utilize the opportunistic natives, environment zoning, vulnerability assessing and sustainable tourist management.

**Keywords:** *Beach Stage Model, Dune Dynamism, Livelihood Diversity Index, Integrated Coastal Zone Management*