

**INTERNATIONAL JOURNAL OF ENGINEERING SCIENCES & RESEARCH  
TECHNOLOGY****COASTAL RESOURCE MANAGEMENT AND PLANNING : AN EVALUATION****Balu L. Rathod**Assistant Professor, Department of Geography, Kankavli College, Kankavli, District- Sindhudurg,  
Maharashtra, India (Ph.D. Scholar, Department of Geography, Shivaji University, Kolhapur)

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**ABSTRACT**

The present research is the outcome of the review study in view of the coastal resource management, which is the need for proper controlling over the available resource. The paper also clarifies the impact of human activities on the coastal ecosystems like beaches, mangroves, sand spits, sand dunes and estuaries. In recent years the study of coastal ecosystem has become very essential that provides information to enable sustainable condition of coastal resources. Coastal zone consisting of various resources are environmentally sensitive interface between the ocean and the land and responds to the change brought about by economic development and changing land-use patterns. The coastal region is an important part of Earth ecosystem with rich biodiversity. Coastal zone are mostly subjected to concentrated population and economic activity. In these areas, there is close relationship between water, soil, vegetation and human activity.

**KEYWORDS:** Coastal protection, conservation, mangroves, sand dunes, conservation of saline land.**INTRODUCTION**

On the earth's ecosystems many natural resources are on the way of deterioration. Some are under heavy pressures due to increasing Industrial and Urbanization encroachments. Consequently protection and conservation of resources are the primary need in the present context. In view of this, coastal tract of India and Maharashtra is more vulnerable to coastal resource degradation [1], [2], [3]. India population is increased rapidly and pressure occurs on the earth and its available resources. Construction activities are also increasing throughout the country, giving rise to so many serious related problems. Many authors have described the impact of man on natural resources and environmental processes. Gregory and Walling (1973) stated that the present understanding of the human impact upon the processes provides an opportunity to understand future problem and resolve the same by formulating potential methods and techniques [4]. Rural and urban population of India directly or indirectly depends on agriculture. Agriculture typically depends on the climatic condition and soil type of the region. Moreover, agriculture relies on monsoon, if rainfall exceeds it causes flooding and destroys crops and if rainfall decreases, gives rise to drought conditions. In both ways, agriculture is affected and provides inadequate food grains. Coupled with the natural calamities and human activities, land is degraded rapidly. Now days, over exploitation of agricultural lands with uncontrolled irrigation water, excess use of fertilizers resulting land degradation. In coastal areas, agricultural lands become kharlands due to intrusion of sea water. Such type of land degradation and salinization are the major threats to agriculture system and come to be agrarian disaster. The dynamic processes that occur within the coastal zone produced diverse and productive ecosystem which have been of great importance, historically for human population. Available resources are considered to be a common property and are in high demand for coastal product for subsistence use and for economic development[5]. Coastal resources refer to the natural resources found in coastal areas, which is useful for human today or in the coming future, including land, forests, coastal waters and wetlands, sand minerals, hydrocarbons, and living coastal organisms Walters, 1998; Jin,(2002). Living coastal resources include fish, shellfish, marine mammals, seabirds and other marine organisms (seaweed, coral reefs). Coastal resources also generally include other important resources such as those with archaeological, historic, sacred, or gender-specific significance[6]. Mangroves are appreciable for their role as primary producers, shoreline producers and as nursery grounds and habitat for variety of organisms. Mangroves provide erosion control and shoreline

stabilization, they are also involved in complex detritus food webs[7]. Mangroves ecosystem play an important role in the livelihood security of coastal people. Nevertheless, mangrove forests of the country are shrinking at an alarming rate. The current management policies are state level approaches. This type of approach may fail to include the involvement of local community. The participatory approach has been proved as a better tool. Therefore, a joint management system for mangroves is to be incorporated in management plan [8]. According to R. Malini, (2011) the agricultural development is an index of our country's progress because it is the largest sector and the lifeline of Indian economy. The development of all other sectors depends upon the development of agricultural sector because it provides food, raw material and employment opportunity of two-thirds of the population. But agriculture in India has always been a risky business in comparison to the industrial sector. As a result, the Indian farmer is not able to make the maximum use of his time, labor and productive capacity of his land due to risks, such as inconsistent monsoon, low level of productivity, technological backwardness and inadequate financial facilities. The most important problem that requires immediate attention is the perils present in the agriculture field. The agriculturist cannot carry on his business without facing the perils in the agricultural activity. Especially, they cannot bear all the losses that arise due to the perils involved in agricultural activity. The loss may be heavy or of recurring nature. Hence farmers should depend upon bank or other insurance corporation to share their loss. In this phenomenon, availability of agriculture insurance at reasonable terms might be the right strategy for speedy agricultural development and improvement of the standard of farmers [9]. The word 'Horticulture' is derived from original Latin word 'hortus' i.e. garden and 'colere' i.e. to cultivate. According to the definition, horticulture means cultivation of garden crops. The concept of horticulture is different from agriculture. Agriculture means the technology of growing plants and animals. Thus, horticulture is a part of agriculture, which is concerned with the garden crops [10]. Coastal sand dunes occupy thousands of kilometres of coastline around the world. They are made up of continuous, hummocky hills of sand that are held together by specially adapted sand dune vegetation. Coastal sand dunes formed during a time of low sea level where sand and sediments on the foreshore became exposed and in conjunction with sufficient winds, this sand was transported up the beach face via a process known as saltation. Once sufficient wind mobilises sand particles they become trapped in vegetation or drift wood at the back of the beach, sand then continues to accumulate among the vegetation and over time slowly builds up the dunes we see today. Sand dunes serve an important purpose by protecting inland areas from coastal water intrusion. They are able to absorb the impact and protect inland areas from high energy storms and act as a resilient barrier to the destructive forces of wind and waves[11].

## **METHODS**

At the World Bank, coastal zone management (CZM) is a part of Integrated Coastal Management (ICM), which is an interdisciplinary and inter sectorial approach to problems definition and solutions in the coastal zone, it includes a range of initiatives that promote environmentally sustainable development of coastal areas, and encompasses a range of activities such as community based management of coastal resources, large-scale infrastructure development (ports, industrial and residential parks, etc.), pollution and erosion control, aquaculture, tourism and recreation, oil spill contingency planning, and navigational risk assessment. CZM is a process of governance that consists of the legal and institutional framework necessary to ensure that development and management plans for coastal zones are integrated with environmental and social goals, and are developed with the participation of those affected. The purpose of ICM is to maximize the benefits provided by the coastal zone and to minimize the conflicts and harmful effects of activities on social, cultural and environmental resources. (World bank, 1996) [12]. According to Carter (1988) Coastal management can be sub divided into three broad areas. 1) Policy relates to the political and administrative framework through which coastal management is regulated, principally through legislation and education. 2) Planning is the process of allocation of environmental, ecological, social or economic resources, planning may be negative in that it discourages development or positive in that it encourages it. 3) Practice covers the techniques needed for implementation of planning decision, for undertaking restorative or remedial works[13]. These three areas fall within a major feedback loop, as further planning / policy decision depend on the performance of the management practices. Proper management of coast becoming increasingly important due to increased pressure on the coast. It has accounted that about 70% of our sandy coastlines have been eroding [14].

## **RESULTS AND DISCUSSIONS**

The mangrove forests also can protect inland coastal- areas as by absorbing the effects of storm and some tsunami waves, but many mangroves have been harvested destructively on a large scale" [15]. Now-a-days the Mangrove ecosystem is affected by climatic factors as well as by human interferences. Directly or indirectly, climatic change influences on mangrove growth. Many studies determined that variations in sea

level, storm, cyclones, uneven distribution of rainfall, temperature variations are the climatic factor that effects on mangrove. Most of the mangrove covered area is converted into Kharland area [1], [5]. The highly industrialized countries have strong base of agriculture. Agriculture helps industry in various ways, it supplies raw material to industry, it provides food to people engaged in industry, increases purchasing power of the farm community, which helps to purchase industrial goods. Savings by agriculture helps industry for capital formation [16]. Coastal resources, Mangroves, Sanddunes, Agricultural, Horticultural, Water, Fishing resources etc, various resources are observed and studied. Geographical Information System, Remote Sensing, Global Positioning System etc. Such modern techniques are used in this research. Geographical information system (GIS) have been used to facilitate the management, manipulation, analysis, modeling, representation and display of data to solve complex problem regarding planning and management of resources. Functions of GIS include data entry, data display, data management, analysis etc. The application of Remote Sensing and GIS is most suitable technique for coastal resource management. GIS based analysis gives better results and effective strategies can be developed to protect the affected coastal zones[3]. In the study sites mudflat, salt marshes, coastal rice farms, kharland etc. are protected by sand spits, sand dunes and sand bars. Mudflats are the temporary accumulations of thick fine-sediment with organic matter, clay and silt that form sub-circular depositional areas along the estuaries and at the mouth of the estuaries extended up to the offshore zone [17], [18]. Most of the kharland areas are developed in the vicinity of such landforms.

### CONCLUSION

The updated information about land use and land cover of the coastal zones will help to overcome the problems in connection with the agricultural systems, forest cover, various infrastructures etc. Therefore it has suggested that, Remote sensing, GIS, GPS techniques should be used continuously for the management and development in the coastal area. There is an urgent need to control over the violation of coastal zones by implementing strict rules and government policies.

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**Mr. Balu L. Rathod** is working as an Assistant Professor in the Department of Geography, Kankavli College, Kankavli, District- Sindhudurg, Maharashtra, India.  
**Edu. Qualification :** M.A./M.Sc (Geog.), P.G.B.Sc. (Applied) in GIS & RS, NET.  
**Phone. No.:** 9822348855, 9420178206.

