



## USE OF GIS AND RS IN DEVELOPMENT OF FISHERIES IN VENGURLA COAST

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**Abstract :**

GIS is a software and hardware system using for Geographical data storage, manipulation and analysis of all forms of geographically reference data. By using Arc-Gis, Erdas-Imagine, Arc-View, it is useful for data and concept concerned with geographical distribution. Study area of my research is Vengurla coast, which is located in Sindhudurg district and west coast of Maharashtra state. Satellite images and topographic maps of different thematic layers are used to create data collection. Satellite images of Vengurla coast and georeferencing topo map is used for data analysis. Main objective of this study is to planning for fisheries zone and mapping of aquatic species, finding the distribution of different fish species in relation to geographically and physically habitat characteristics. Study of Vengurla coast and different types of fish production available in different month and also environmental impact and man made interference using 'Persseen Net' for fishing and it's effects on temporal and spatial changes in fish production at Vengurla coast.

**Keywords:** Geographical Information System (GIS), Remote SENSING (RS), T Layer, Indian Remote Sensing (IRS), Electro-Magnetic Radiation (EMR)

**Introduction :**

This research paper has focused on use of RS and GIS to map the development of fisheries resources, Such as finding different species, habitat of fish, landing center, fish market and fishermen problem related with fishing of Vengurla coast. The maps of various fisheries resources were identified using satellite images of IRS LISS III and aerial photographs. The software used for the study is Arc-Gis, Erdas-Imagine, Arc-View etc. Vengurla is one of the important marine tahsil having long coastline spread. State government has carried out many survey to record fisheries resources and different types of fish available in vengurla coast.

**OBJECTIVE OF THE STUDY :**

1. Develop an integrated framework for management of the coastal zone and limitations on 'Persseen Net' fishing.
2. Study of community depends primarily upon marine resources and changes in sea waves and their effects on fishing.
3. Develop aquaculture activity like Norway country.
4. To motivated the people to Develop fish farming in Vengurla coast.
5. To understand the concept of Gis and remote Sensing for developing fisheries.
6. Findings harmful effects of 'Kend fish, Jellyfish and Pakat and their infection on fishermen.

**STUDY REGION :**

Vengurla is situated in Sindhudurg district in Maharashtra state. North by Malvan tahsil, on the south Goa state, East Kudal tahsil and on the west by the Arabian Sea. It's Geographical coordinate are 15 52'0" North latitude and longitude is 73 38'0"east. A narrow coastal plain is lies at Vengurla coast. Vengurla has a semi tropical climate and temperature lies

between 34 c maximum in summer and 29 c in winter. So temperature is very humid and hot in most of the year. In monsoon there is heavy rainfall approx. 1500 to 2000 mm. The occupational structure of tahsil indicate that fishing and agriculture is the main occupation of people.

**Methodology :**

1. Field visit : Before monsoon and after monsoon field survey was carried out the Vengurla coast. Water samples are collected in different month.
2. Image processing techniques :Satellite images getting from Oceansat and ocean color monitor are used to study Vengurla coast. Aerial photos also used for monitoring the fisheries distribution.
3. Primary data :There has been some primary based input through personal interview with questionnaire.
4. Secondary data :This data is collected from news paper, website, periodicals, fishery journal, magazines, books etc. Various article published by scholars and government agencies are used to collect information.
5. Software Techniques : Collected data preserved and brought to the analysis via software like Arc-Gis, Erdas-Imagine, Arc-View etc.

**GIS AND RS CONCEPT :**

1. Geographical Information System (GIS) is a advanced tool of Geography, used for data storage, manipulation, retrieval and analyze of geographically reference information.
2. GIS is a software and hardware system deals with different types of spatially referred digital data.
3. Main function of GIS is data processing →data display →data analysis →database management.

4. Remote Sensing means to collect information about the object from a long distance without actually coming into contact with them.

5. Electromagnetic Radiation are medium of interaction. Every object of the earth surface reflect a electromagnetic radiation depends upon its physical properties.

6. For each object on the earth surface is it's different spectrum signature.

#### **IMPORTANCE OF GIS AND RS :**

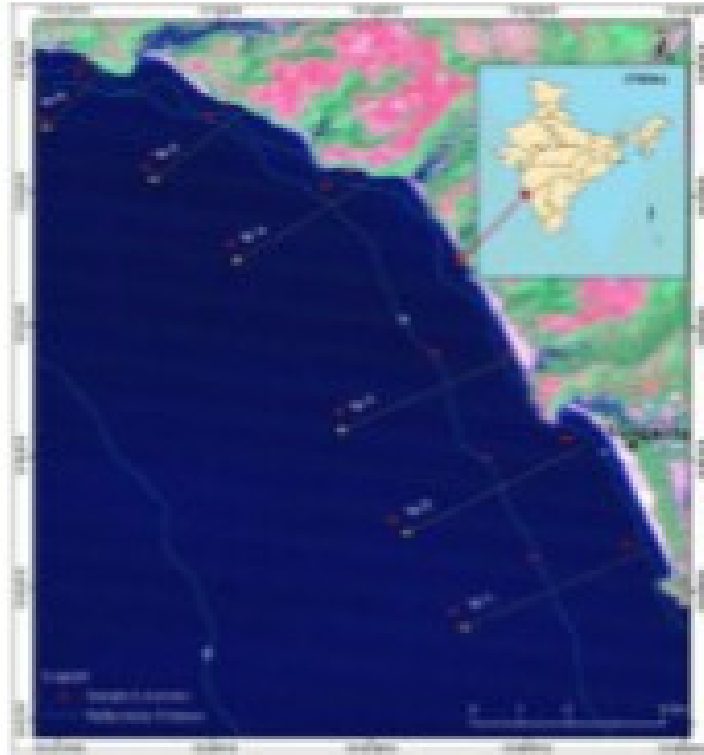
1. Its a application oriented techniques helps for researcher and planners to take effective decision making.

2. By using satellite images day by day change can be easily monitoring and its get effective output.

3. Satellite images can be useful for different purposes and different disciplines.

4. Maximum geographically data can be stored by without going at location and get information about any remote place.

5. Remote Sensing helps to interpretation of satellite images and various features of earth surface in their spatial relation to each other.



**(MAP SOURCE :** SCC Analysis of S.Maharashtra Coast : Satish Sathasivam and others)

#### **Conclusion :**

Vengurla tahsil is endowed with shoreline with various natural and man made fisheries resources. So many types of fish like bangada, tarali, kolambi, surmai, paplet, zinga, shivad, Pakat, jawala, mandeli etc available in this coast. By using GIS its easy to finding distribution of different fish species in relation to their natural habitat. Seasonal environmental and monsoon, pre-monsoon impact on fish production and consumption. Planning for fisheries resource zone and mapping of aquatic species. Using GIS also finding the fish disease and mapping of marine life. Remote Sensing techniques plays a important role for the detection of the water pollution and their impact

on fish species. Remote Sensing data is used for indentation of fishing zone and it's very important to fishermen because they came to know which place is having a buffer zone of fish. RS also gives information like loss of natural habitat. sea level rise, coastal erosion, sewage disposal and aquatic population etc.

#### **References :**

1. Aguilar-Manjarrez: Current issues, status and application of GIS to aquaculture, United States of America.
2. [www.fao.org/fishery/naso-maps/naso-home/en](http://www.fao.org/fishery/naso-maps/naso-home/en).
3. Technical manual on fisheries management.

4. Ferreira, j.G., Anderson, H. C (2008) : Sustainable options for people, catchment and aquatic resources.
5. [www.biagiang.org](http://www.biagiang.org)
6. Ervik, A., Doskeland, I. (2008) : Virtual decision super tool for integrated planning in aquaculture.
7. Longdill, P.C., Healy, T. R. (2007) : Integrated sediment habitat mapping for fisheries zoning. (Journal of coastal research - Waikoto University)
8. Healy,T.R., Black, K.P. (2008) - Ocean and coastal management
9. Asmah, R (2010): Development of potential And financial viability of fish farming in Ghana, University of Stirling.