CHANGES OF LAND USE, LAND COVER TOPOGRAPHY SOIL PROPERTIES OF HANGA RIVER BASIN IN SHRIGONDA AND PARNER TAHSIL OF AHMADNAGAR

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INTRODUCTION:

Changes of land use, land cover and soil properties are the important aspects of environment. The land cover land use and soil properties are change at local, regional and global level which has a lot of importance in respect of environment and scientists. These factors affect the environmental biodiversity as well as soil degradation and soil properties which lose the ability of biological systems. The changes are also shows the vulnerability of locations and people to climatic, economic or socio-political perturbations (Kasperon et al,1985) LULC (Land use / Land cover) and Natural resources and environmental ecology has a close relationship like erosion and soil properties changes. Modernization of Agricultural field and mechanisation of Agricultural sector increase the land use which increase the soil erosion and soil compaction. The physical and chemical structure and properties also changed due to land use. LULC also affect the Global temperature, global biological hot spot, soil degradation, global hydrology and social wellbeing. Determination of soil degradation only identify through the Land cover. In the watershed of any region land cover divided in to two parts on the basis of land exposure and erosional agent. 1. Land that bare when rain occur 2. Land under good vegetation cover when the rain starts which protected threat of erosion.When less meditational cover the surface runoff is high and water retention is low. The high amount of surface runoff sheet erosion, which form the deep gullies.LULC useful in the planning management and programmes at village, tehsil, district, national and global level.It also helpful in

the development of particular region. Therefore it is important to study the Hanga river catchment area.

STUDY AREA:

The given research contains the catchment area of Hanga River. The rise of river near west of Parner city at the 960 mt. elevation from the sea level. The latitudinal and longitudinal extension of this rise area is $18^0 37'31''$N to $74^0 30'17''$E and river meets to the Ghodriver near Hangewadi at the 523 mt. ($19^0 02'45''$N to $74^0 24'24''$E)The catchment area of Hanga River Administratively divided in to two different tehsil of Ahmadnagar District. The Hanga River basin falls under Parner and Shrigonda Tehsil of Ahmadnagar district of Maharashtra state. The Parner, Supa and VisapurPimpalgoan and Belwandi are the main towns and villages of study area. The total area of this river charactarised by low to high black cotton soil. The major crops of this study region are Jwaribajari, Sugarcane, Onion, groundnut etc. The Parner and Shrigonda located in a semi-arid and drought-prone area, with fairly flat land and poor rocky soil. The distribution of rainfall is uneven as well as dry spell of about 8 months.The failure of monsoon is common in this study area which produce shortage of water mostly in summer seasons. Annual avarahe rainfall is 15 inches.

AIMS AND OBJECTIVES:

The given research aim is to identify land use and land cover condition of Hanga River watershed area as well as soil condition of the study area.

1. Identify Land use and land cover of last two decades of Hanga river watershed.

2. Identify the soil properties of study area.

3. Identify the relationship between land use, land cover and soil condition.

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METHODOLOGY:

Different types of methods are used for given study.

1)Data for Thematic maps, LULC map and DEM

a)SOI Toposheet-1:50000.

b) Landsat 30m resolution.

c)Aster 30m resolution.

d) Google earth 1mt resolution.

2) Generation of Thematic Map: -ERDASIMAGINE software used for the preparation of thematic map

a) Aspect map

b) Slope map

c) Land use and land cover map

d) Soil map

e) Drainage map

3. Pre- processing-:

a) Morphometric analysis

b) Digitization

c) Geo Referencing

d) Mosaic imageand toposheets

4. Laboratory Work-: Random sampling of soil collected from the study area. The physical (texture, colour, structure) and chemical properties (Salinity, pH and organic factor) of sample studied.

IMPORTANCE OF STUDY:

Hanga watershed is the semi-arid area of Maharashtra. It is continuously prone to droughts. Changes of land use important to identify the land cover in study area. It also helpful and also needful in future planning of study area.It also important to identify the vegetation condition of study area.The condition and amount of barren land. Agricultural planning also runs through the soil properties. Soil erosion and soil conservation also identify.

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CONCLUSION:

Change in land use topography, land cover and soil properties- Application studies in the Hanga river watershed area will not able further planning and land use accordingly.

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