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An Overview of Physical Factors in Amravati District

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Abstract

In the study of geography physical factors having the too much importance because many aspects are directly and indirectly depends on the physical factors of the region. Relief, climate, soil structure etc effects the culture of the region. Dress sensations, foods etc all found different in different physical conditions of the region. To study of physiography is an important part of the geography study. The present paper has attempts the geographical analysis of physiography in Amravati district of Maharashtra state.

Keywords:Physical, climate, drainage, soil, natural vegetation

Introduction

Physical structure of the any region is plays an important role to the development because all planning are done by consider the physical factors of the region. Height of the region, climate, drainage structure etc effects the concentration of population, social factors and cultural development of the region. In this present paper overview of physical factors has been studied in Amravati District.

Objectives

The main objective of the present study is to analysis and overview to the physical condition of the study region also calculate category wise area of the physical factors i.e. area of each height zone, soil types, rainfall zone etc.

Study Region

Amravati district is located in the Maharashtra state, the study region is lies between the 20° 33' N to 21° 47' N latitude and 76° 43' E to 78° 24' E longitude. There are total 14 tahsil in the district. The district covered total 12210 Sq.Km. area and the total population is 2888445 according to 2011 census, out of them 1480768 are male and 1407677 are the female.

Data Source & Methodology

The present study is based on the graphical data analysis, the relief map, drainage map and Soil map had drawn from the National Atlas & Thematic mapping Organization, Kolkatta, Govt of India. The rainfall map drawn from Regional Metrological Office, Nagpur and Forest map had drawn from National Land Use/Land Cover Mapping using IRS LISS-III Data on 1:50,000 Scale (Year - 2015).

The area of each factor has been calculated by using GIS and represented on table form. The physical factors are shown in the map of study region.

An Overview of Physical Factors

A) Physiography: - Physiography is one of the dominant parameter of physical environment and its impact on patterns and density of Agriculture is immense (Chauhan T S, 1987). There are three physiographic regions in Amravati district

i) Melghat Plateau - The maximum height of this region is 1159.2 meter of Vairat pick.

ii) Purna River Plains – This valley is lies central east to west-east and this plains cover 3966 sq.km area of the study region.

iii) Wardha River Plains - This plain is covered maximum part of Amravati district. The total area of this valley is 4245 sq.km.

According to the height the relief structure has divided into 5 categories, below 300 meter region covered 2704 sq.km area, this region is found at the southern aprt of the study region. 300 to 450 meter heighted region occupied 6326 sq.km area, 450 to 600 meter height region covered 1802 sq.km area and this is located in Melghat region. The height 600 to 750 meter covered 1191 sq.km area and above 750 meter region covered only 187 sq.km area and it is located in Chikhaldara tahsil

B) Climate: - The climate elements and other effects on plant growth are for more complex than it appears. In the field the plant is never subjected to a single variable at any given time, but has to interact with an almost infinite number of combinations of elements (Chary 1968).

During the period from April to June on individual days the day temperature rises up to about 44⁰c, temperature decreases rapidly from October to till December.

The humidity is between 60 to 80% air is generally dry over district; there are three zones of average annual rainfall. Below 600 mm rainfall occupied 2435 sq.km area of the study region, Daryapur and Nadgaon Khandeshwar tahsil's parts are included in this category. 600 to 800 mm rainfall region covered 6410 sq.km area and above 800 meter occupied 3365 sq.km area of Amravati district. The mean annual rainfall of the study region is near about 850 mm.

C) Soil: - The types of soils in Amravati district is classified by the department of soil conservation in Amravati district. Maximum part of Amravati district is Deccan plateau and the erosion of plateau soils are formed.

In the study region there are total four types of soils are classified.

- i) Deep Black Soil** – This soil found in souh part of Anjangaon surji, Achalpur, Chandur Bazar, Morshi, Warud, Chandur and Dhamangao Tahsil. Also northwest part of Dharani and Northern part of Amravati tahsil. This type of soil covered near about 3496 sq.km area of the region.
- ii) Medium Deep Black Soil** – This type of soil mainly occurred in Achalpur, Middle of Chandur Bazar, Morshi and Warud tahsil. Also west part of Nandgaon Khandeshwar and Bhatkuli tahsil. It also covered east part of Tiwsa tahsil and maximum part of Dhamangaon tahsil of the region. This type of soil occupied 3147 sq.km area of the district.
- iii) Light Medium Black Soil** – This type of soil mainly found in Melghat region i.e. Chikhaldara and Dharani Tahsil. It covered 3293 sq.km area of the region. This type of soil is less fertilizes capacity compare to deep and medium black soil.
- iv) Shallow Black Soil** – The shallow black soil soil found in northern part of Achalpur, Chandur Bazar, Morshi and Warud tahsil. Also occurred in Tiwasa, Amravati, east part of

Bhatkuli and Nandgaon Khandeshwar and western part of Chandur Railway tahsil. This soil covered 2274 sq.km area of the region.

D) Natural Vegetation:- The main track of natural vegetation runs along a range of Gavilgadh hills which pass north to south in western region of the district Amravati.

In the study region Melghat region covered more than 70% forest area compare to other tahsils. Babul, tick, Dhawra, Moha, Tembhurni etc are the various vegetations are found in this region. The growth in all the natural vegetation except the babul bans is deciduous, containing a variety of species. In Melghat region the various biodiversity is also found. Various birds, animals, insects etc lives in natural vegetation are of the district.

The next natural large vegetation occurred in Pohara forest region in Chandur railway tahsil, leopard, deer are mainly occurred in this region. In the other part of the district the natural vegetation is found in scattered form. According to the classification of IRS LISS-III Data on 1:50,000 Scales (Year - 2015) total natural vegetation area of the district is 3521 sq.km and it is 28.84% of the total geographical area.

E) Drainage: - Drainage is one of the most important components of physical environment of which affects agriculture directly and indirectly (Lanbein W.B. and J.V.B. wells, 1955)

Amravati district is mainly situated in Tapi-Purna basin and Wardha basin. Middle to west maximum area situated in Tapi-Purna river basin and middle to west are situated in Wardha river basin. Tapi, Purna and Wardha these three are the main rivers in the district. Pedhi, Arna, Sahanoor, Chandrabhaga nala, madu is the tributary of Tapi & Purna River. Maru, Dewna, Chudaman, Charghad, Bel, Soki, Dhawgiri are the tributary of Wardha river.

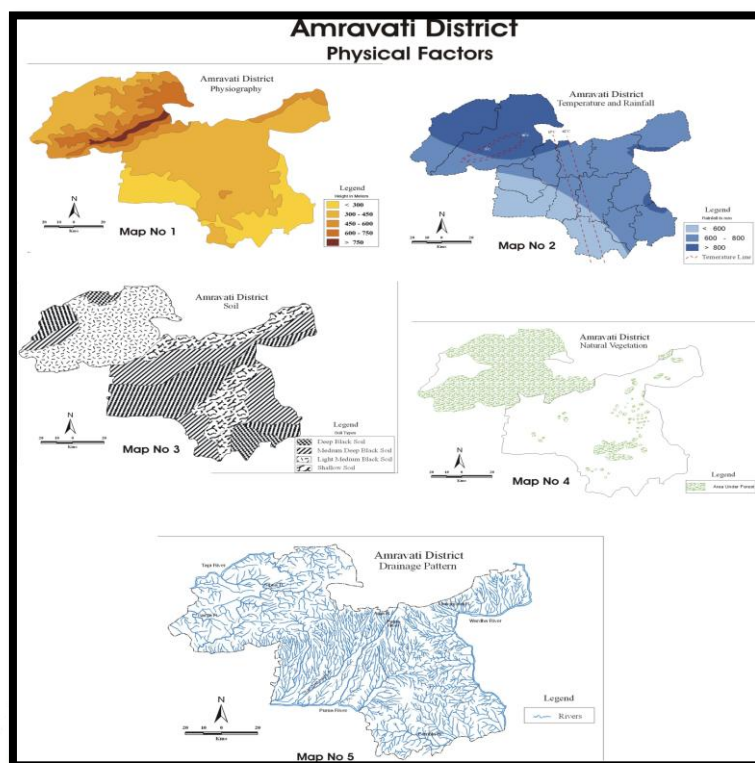
Few deep perennial thanks are found in the trap country of the plateau area. In the study region the total length of all streams is near about more than 7000 km. Purna rivers' length in the district is approximate 102 km. Tapi rivers' length is 60 km. and Wardha rivers' length is 162 km.

Table No.1 Amravati District : The Area of Physical Factors

Physiography					
Height in Meter	< 300	300 - 450	450 - 600	600 - 750	> 750
Area in sq.km.	2704	6326	1802	1191	187
Rainfall					
Rainfall in m.m.	< 600	600 - 800	> 800		
Area in sq.km.	2435	6410	3365		
Soil					
Soil Types	Deep Black Soil	Medium Deep Black Soil	Light Medium Black Soil	Shallow Black Soil	
Area in sq.km.	3496	3147	3293	2274	
Natural Vegetation					
	Area in sq.km.	3521			

Source: - Calculated by Author

The physiographic conditions and features of the region are not even in all over. Also river structure, rainfall is also different in the study region.



Conclusion

Physiography of the region is the main identity and helps to planning for the development. Melghat region is affected by hills and dense forest, there are many opportunities are available to start the new forest based industries in this region. The proper planning and management provides the good irrigation facilities in Wardha basin. The geographical conditions of the region is uneven, therefore the culture and socio-economic conditions is also uneven in the region. Warud, Morshi, Achalpur and Amravati tahsils are developed compare to other tahsils of the district. Soil structure, is good in Achalpur and Amravati tahsil, Irrigation facility and rainfall percentage is good in Morshi and Warud tahsil. Therefore its impact is shown on the development. The planning according to the physical conditions of the region helps to proper and sustainable development of the region.

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