

# A Study On The Geographical Diversity And Bio Diversity Of Karnataka

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## **Abstract:**

Karnataka state is regarded as 'Geographers workshop' due to its diversified geographical features and location. It is blessed with many rivers, hills, flora, fauna, plains, plateau, forest and mineral resources, mountains etc., It is the eighth largest state in the country in terms of geographical area with a total geographical area of 1,91,791 sq. Kms. It is accounting for 5.83 percent of the total area of the country (Karnataka gazetteer 1981, N.B.K. Reddy and G.S. Murty 1967) and has pre-dominant position in the field of Information Technology (IT), Bio-technology (BT) and Nano Technology. Karnataka is known for not only for Sandalwood and Spices, but also for its rich bio-diversity. The state lies between 11.5° North and 18.50° North latitude and 74° East and 78.30° East longitudes in the southern plateau. The state is bounded by Maharashtra and Goa in the North and North West; by the Arabian sea in the west; by Kerala and Tamil Nadu states in the South and by Andhra Pradesh in East. Karnataka extends to about 750 km from North to South and about 400 km from East to West. It's total land area is 1.92 lakh km<sup>2</sup>, accounting for 5.83% of the total area of the country. It has been divided into four revenue divisions, 49 sub divisions, 30 districts and 176 taluks, for administrative purposes. As per 2011 census, the state population is 6.11 crore, making it the 9<sup>th</sup> most populated state with 319 density of population, which is lower than all India's density of population of 382 per km. The maximum latitudinal extent is 70 141 from Aurad taluk of Bidar district in the North to Moyar River in the South (Chamarajanagar) for a distance of 750 Km. The maximum longitudinal extent is 40 281 from Karwar of Uttar Kannada district in the west to Mulbagilu taluk of Kolar district in the extreme east for a distance of 400 kms.

**Key words:** Geographical diversity, location, flora, fauna, plains, forest and mineral resources.

## **Introduction:**

Out of all the states of India, Karnataka holds a unique distinction. At present, the state has 10 city corporations, 41 City Municipal Councils (CMC's), 68 town municipal councils, 94 town panchayats, 30 Zilla Panchayats, 176 Taluk Panchayats, 747 hoblies and 6018 Gram Panchayats. The state has 59,532 rural habitations, including 27,397 inhabited revenue villages and 1,943 uninhabited villages. According to 2011 census, about 62% of the total population of 611 lakh lives in rural habitats. The annual rainfall of the state varies roughly from 50 to 350 cm. In districts of Bijapur, Raichur, Bellary, Southern half of Gulbarga, the rainfall is the lowest varying from 50 to 60 cm. Karnataka is the largest producer of coffee, raw silk and

sandal wood based products like perfumes and 75% of the Indian floriculture industry is located in Karnataka. The state accounts for 59% of the country's coffee production, 47% of country's Ragi production. About 61% of the population lives in villages and about 39% of the population lives in cities. Karnataka is one of the fastest growing state in the country. During 2014-15, it contributed 5.68% to Gross GDP of India.

### **Physiography of Karnataka:**

Physiographically Karnataka State forms two well-designed macro regions of Indian union, they are: The Deccan plateau and the coastal plains or lowlands and Islands (Karnataka gazetteer 1981). On the basis of geographical structure, the state can be divided into three major physiographic regions:

1. The Coastal Region
2. The Malnad Region
3. The Bayaluseeme Region.

These broad natural divisions naturally unfolded themselves, although several studies further divided (Learmonth A.T.A. et.al. 1962, N.B.K. Reddy and G.S.Murty 1967, Karnataka state gazetteer 1982, Handbook of Karnataka 2005) on the basis climate and natural conditions.

**The Coastal Region:** - It is a narrow strip of land about 400 KM length situated between the Western Ghats and Arabian Sea. It lies between  $11^{\circ} 4' 1''$  to  $14^{\circ} 21' 1''$  North latitudes. It stretches from Karwar town in the North to a little beyond Mangalore city in the South varies between 25 and 65 Kilometers. Its unity lies in its openness to maritime influence. It is a plain of low relief built up of sands alluvium and lateritic materials. It is transitional in character, because it lies between the submerging Bombay coast (Konkana coast) in the North and Emergent Kerala (Malbar) coast in the South consequently. It has number of sandy bays like Karwar bay, the Belekere bay and the Bhatkal Bay. There are no large deltas along the coast probably due to most active South West Monsoon.

Learmonth A.T.A (1962) broadly divided the coastal belt into three longitudinal and parallels belts. They are

- **Coastal Plain:**- It is a low plain of river deposition.
- **Coastal low plateau:**- It is the product of marine denudation and so can be described as "Marine Platform".
- **Coastal Malnad:**- The rest of the dissected hill with more forested and less cleared for field of Agriculture area.

**Malnad Region:**- It is mainly forested hilly area lying east of the Ghats edge and west of Maidan boundary. It is also known as 'Sahyadris'. It extends continuous belt through the state, from Northwest to South east, almost close to the Arabian Sea, finally culminating or joining in the mighty Nilgiris. There are many peaks in the Western Ghats. These were formed by the erosional action of rivers on the flat topped residual plateau.

The most important peaks are Mullayyanagiri (1913m) in Bababudangiri hills which is the highest peak of the state. Kalhatgiri (1893m), Kudremukh (1872m), Devirammanagudda (1817m), Rudragiri (1715m), Meruti (1641m), Ballalarayanadurga (1500m), Varahaparvata (1434m), Kodachadri (1323m), Puspagiri or Subramanya (1731m), Brahmagiri, Mertigudda (1677m) etc. Charmudighat, Agumbeghat and Kollurghat in the Western Ghats provide communication between the coastal plain and the Malnad region. The Malnad with its high elevations, steep slopes, rugged relief and heavy rainfall is a potential source of hydro-electric power. The world famous Jog falls is and well known Shivanasamudram falls situated here. It is a source of many useful rivers.

Its dark forest covers a continuous source of fuel timber and other. The slope of the Western Ghats contains coffee and tea plantations. Its delightful natural beauty spots provide excellent centers for tourists. It has deep gorges and valleys lofty ranges and evergreen forest. As a result of these, it is rightly regarded as “Sahyadris are the Mountains of Karnataka State”, just like Himalaya’s are the “National Mountain of India”.

**Semi-Malnad:-** It is a long Narrow zone situated between Malnad and Bayalu seeme and running north to south for the whole length of the State. 2.5.3.

**The Bayalu seeme Region:-** It is a flat and rolling open area situated in the east of the semi malnad. Its unvaried and monotonous landscape represents a senile topography. The region gently slopes towards the east and its height increases from North to South like Bidar to Chamarajanagara. The studies (Learmonth A.T.A 1962, N. B. K. Reddy and G. S. Murthy 1967, Karnataka state gezeteer1982) divide the Bbayalu seeme in to two regions. They are: Northern Bayalu seeme Region and Southern Bayalu seeme region.

**The Northern Bayalu seeme Region:-** It is also termed as “lower erosion surface” and the height varies from 1200 to 1500 m. It is the land North of the Tungabhadra river and to the east of the Western Ghats. It is a Monotonous, seemingly endless plateau, covered with rich block cotton soils and large open treeless fields. Major part of this region is occupied by the Krishna river Basin. This is highly eroded and dissected by the Bhima, Don, Krishna, Tungabhadra rivers. In some of the Limestone areas faulting has resulted in giving rugged appearance to the landform of the east of Sauvdatti and Badami. The most important waterfalls of the region Gokak falls in Belgaum. Districts like Bidar, Bijapur, Gulbarga, Yadgiri, Raichur, Koppal and Gadag are known for frequent severe droughts, larger portion of the region is still under rain fed conditions (N. B. K. Reddy and G.S.Murthy1967, Karnataka state gezeteer1982).

**The Southern Bayalu seeme Region:-** This is also called as “higher erosion surface”, is relatively higher in elevation and more rugged in relief than the Northern Bayalu seeme. It is also termed as the “Mysore Plateau, It extends from the Tungabhadra River in the North to Chamarajanagara. It slopes towards the east, the average height varies from 1600 to 1200 Meters. Its hard crystalline rocks have greatly resisted erosion. It is drained by the Cauvery, Pennar and Ponnaiyer river systemsShrirangapattana and Shimsha are the two important islands of this region formed by the Cauvery River. It is a rain shadow region, rainfall is not only scanty but also the amount of rainfall decreases and the variability increases from west to east. Red and red

sandy soils are predominated which are not highly fertile. Agriculture is practiced with the help of irrigation and rain fed dry crops is also extensively cultivated.

### **Agrarian feature and Land use pattern in Karnataka:**

The state of Karnataka is an important agrarian economy in India. In Karnataka 62% of the land is cultivable. The percentage of cultivable land in Karnataka is higher than any other state in India. The normal net cultivated area in the state is about 117.48 lakh hectares and accounts for 62% of the total geographical area. In Karnataka, soil and vegetation shows a varied feature with different kinds of soils spread in different regions like red clay, laterite soil, red soil mixed with clay and sand, black soil and split; owing to the availability of different kinds of soil in different region, the cropping pattern also changes. The soil and vegetation are always correlated and complementary to each other. The state is divided into 10 agro-climatic zones. As a result of varied agro-climatic features almost all cereals, pulses, oilseeds and commercial crops are cultivated in different parts of the state. Classification of important crops of the state are: -

- Food Crops: Ragi, Paddy, Jowar, Maize and Bajra.
- Pulses: Red gram, Bengal Gram, Field bean, Cow pea, Horse gram etc.,
- Oil Seeds crops are: Ground nut, Sun flower, Safflower, Sesame.
- Commercial Crops: Cotton, Sugar Cane, Coffee, Tobacco, Mulberry, Cashews, Cardamom, Betel nut (Arca).
- Vegetable Crops: Potato, Carrot, Cabbage, Beet root, Raddish, Cauliflower, Brinjal, Beans and leafy vegetables.
- Fruit Crops: Mango, Guava, Sapota, Grapes.
- Flower Crops: Rose, Chrysanthemum, Crossandra, Aster, Jasmine, Champaka, Marigold.

The unique feature of Karnataka state is the existence of Sericulture from time immemorial. It is said that the Mysore ruler Tippu Sultan is responsible for the prominent growth of Sericulture in the state. Now, Karnataka accounts for more than 55% of raw silk produced in the country. The area under mulberry cultivation in the State was about 88,879 hectares at the end of December 2014. During 2013-14, the estimated mulberry silk production in India was about 18,715 MTs of which Karnataka's share was 8,574 MTs.

The Western Ghats of the state is well known for Coffee plantations, Rubber, Pepper and Fruits.

The Khariff crops (April to September) in Karnataka comprises of Millets, Paddy, Maize, Moong (Pulses), Ground nut, Red chilli, Cotton, Soya bean, Sugar cane, Turmeric. The major Rabi crops (October to January) are Barley, Mustard, Sesame, Peas.

**Land use pattern in Karnataka State**

Sl. No	Classification Area	Lakh hectare	Percentage
1.	Total Geographical Area	190.50	100
2.	Forest	30.73	16
3.	Not available for cultivation:		
	a) Land put to non-agri. Uses	14.36	7.54
	b) Barren & uncultivable land	7.87	4.13
4.	Cultivable waste land	4.13	2.17
5.	Uncultivated land excluding fallow land:		
	a) Permanent pastures & other grazing land	9.08	4.77
	b) Misc. Tree crops, Groves	2.83	1.49
6.	Fallow Land	23.57	12.37
7.	Net Area Sown	97.73	51.30
8.	Area sown more than once	19.55	10.26
9.	Total Cropped Area	117.48	62
10.	Cropping Intensity - %		120%

**Source:** Annual Season & Crop Reports of DE&S, Bangalore.

As a result of drought situation in 157 taluks during 2012-13, net sown area and area sown more than once has declined but the area under fallow land has increased from 16.72 lakh hectares to 18.22 lakh hectares.

Karnataka Agricultural census reports and agricultural census 2010-11, shows that 78.32 lakh farm holdings operating 121.61 lakh hectares. Small and Marginal holdings account for 76.44% of total holdings and operate only 40.05% of the total operated area, while semi-medium, medium and large holdings account for 23.57% of the total holdings and their operational land holding is 59.95% out of the total operational area.

Details of land holdings in Karnataka is as follows:

Size-Class	No. of operational holdings ('000's)		Avg., size of operational holding ('000's)		Avg., size of operational holding (hectares)	
	2000-01	2010-11	2000-01	2010-11	2000-01	2010-11
Marginal Farmer (< than 1 hectare)	3,252	3,849	1,492	1,851	0.46	0.48
Small Farmer (1-2 hectare)	1909	2,138	2,742	3,020	1.44	1.41
Semi-Medium (2-4 hectare)	1,259	1,267	3,429	3,393	2.72	2.68
Medium Farmer (4-10 hectare)	569	511	3,317	2,904	5.83	5.69
Large Farmer (> than 10 hectare)	90	68	1,327	994	14.74	14.71
<b>Total</b>	<b>7,079</b>	<b>7,832</b>	<b>12,307</b>	<b>12,161</b>	<b>1.74</b>	<b>1.55</b>

**Source:** Karnataka Agricultural Census Reports and Agricultural Census 2010-11.

Soils are complex mineral and organic substance. A particular type of soil is suitable for a particular type of crop. The soils of the state are broadly grouped into 4 Major types from the agricultural point of view. They are: Black Soils, Red Soils, Laterite Soils and Mixed coastal soils. Black Soils are predominant in the North Karnataka Region and some part of the South Karnataka Region districts. The main crops of this region are cotton, Jowar, bajra, wheat, tobacco, groundnuts and sugarcane. Red Soils are dominated in South Karnataka Region, Ragi and groundnuts are dry crops, paddy and sugarcane are irrigated crops in this region. Laterite soils are longitudinally distributed over the high rainfall hills track of the CKR and adjoining parts of the South Karnataka Region and North Karnataka Region. Important crops of these areas are Tea and Coffee plantations, Pepper, Paddy Banana, Coconut, arecanut, Cardamom, Cashew nut, Orange and Sugarcane etc. Alluvial Soils are the product of riverine and marine deposition and found among the districts of Central Karnataka Region. Flourishing agriculture is practiced in this region; paddy, sugarcane, Coconut, arecanut banana and spices are the chief agricultural crops of this region. The agricultural department of the state identified the 10 major agro climatic regions on the basis of soil types, texture, depth and physiochemical properties, elevation, topography, major crops and type of vegetation. The 10 zones have been in to four distributed in North Karnataka Region like, North Eastern Transition Zone, The North Eastern dry Zone, Northern Dry Zone and Northern transition zone. Four in South Karnataka Region such as Central Dry zone, Eastern dry zone, The Southern dry zone, Southern transition zone. Coastal zone in Central Karnataka Region and the last one hilly region spread in between eastern parts of Central Karnataka Region and western parts of

North Karnataka Region and South Karnataka Region districts like Belgaum, Dharwad, Shimoga, Chikkamagalur, Hassan and Kodagu.

### Conclusion:

Karnataka state is regarded as geographers workshop due to its diversified geographical features and location. It is blessed with many rivers, hills, flora, fauna, plains, plateau, forest and mineral resources, mountains etc., It is the eighth largest state in the country in terms of geographical area. It has been divided into four revenue divisions, 49 sub divisions, 30 districts and 176 taluks, for administrative purposes. As per 2011 census, the state population is 6.11 crore, making it the 9<sup>th</sup> most populated state with 319 density of population. According to 2011 census, about 62% of the total population of 611 lakh lives in rural habitats. Because of all these, Karnataka holds a unique distinction amongst different states in India.

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