



National Conference on Sustainable Developments in Engineering,
Science, Humanities and Management (NCSDESHM – 2025)

28th December, 2025, Raipur, Chhattisgarh, India.

CERTIFICATE NO: NCSDESHM /2025/ C1225984

Critical Study of Geographical Profile of Cooch Behar District, West Bengal

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ABSTRACT

The present study provides a critical analysis of the geographical profile of Cooch Behar District in West Bengal, India, with emphasis on its physical, demographic, socio-economic, and cultural characteristics. Cooch Behar occupies a distinctive geographical position in northern West Bengal and is characterised by its alluvial plains, riverine environment, fertile agricultural land, and a humid monsoonal climate. The district is drained by several important rivers and tributaries, which have played a significant role in shaping its physical landscape, agricultural practices, settlement patterns, and economic activities.

Keywords: Cooch Behar, Monsoon, Geographical Profile, Rivers, Crops.

Introduction

The geographical profile of Cooch Behar is characterized by its predominantly flat and gently undulating terrain, fertile alluvial soils, numerous rivers, and a humid monsoon climate. Major rivers such as the Torsa, Raidak, Kaljani, Dharla, and Mansai flow through the district and play an important role in its drainage, agriculture, and settlement patterns. The availability of fertile land and abundant water resources has made agriculture one of the principal economic activities of the region, with paddy, jute, vegetables, and other crops being widely cultivated.

Geographical Profile of Cooch Behar District

Location and Boundaries

- **Coordinates:** Lies between 25°57'47" and 26°36'20" North latitude and 88°47'44" and 89°54'35" East longitude.
- **North & North-West:** Bounded by Alipurduar and Jalpaiguri districts.
- **East:** Bounded by the Kokrajhar and Dhubri districts of Assam.
- **South & South-East:** Bounded by the international border of Bangladesh.

Demography

Population

According to the 2011 Census, the total population of the district is 2819086, of which 2529652 reside in rural areas and 289434 in urban areas. The distribution of the district's population over the last three decades is shown in Figure. The figure shows that the district's total population increased continuously from 1991 to 2011. The percentage of the rural population has decreased from 92.2 in 1991 to 89.7 in 2011. Alternatively, the percentage of the urban population has increased from 7.8% in 1991 to 10.3% in 2011. Cooch Behar (also known as Koch Bihar) district.



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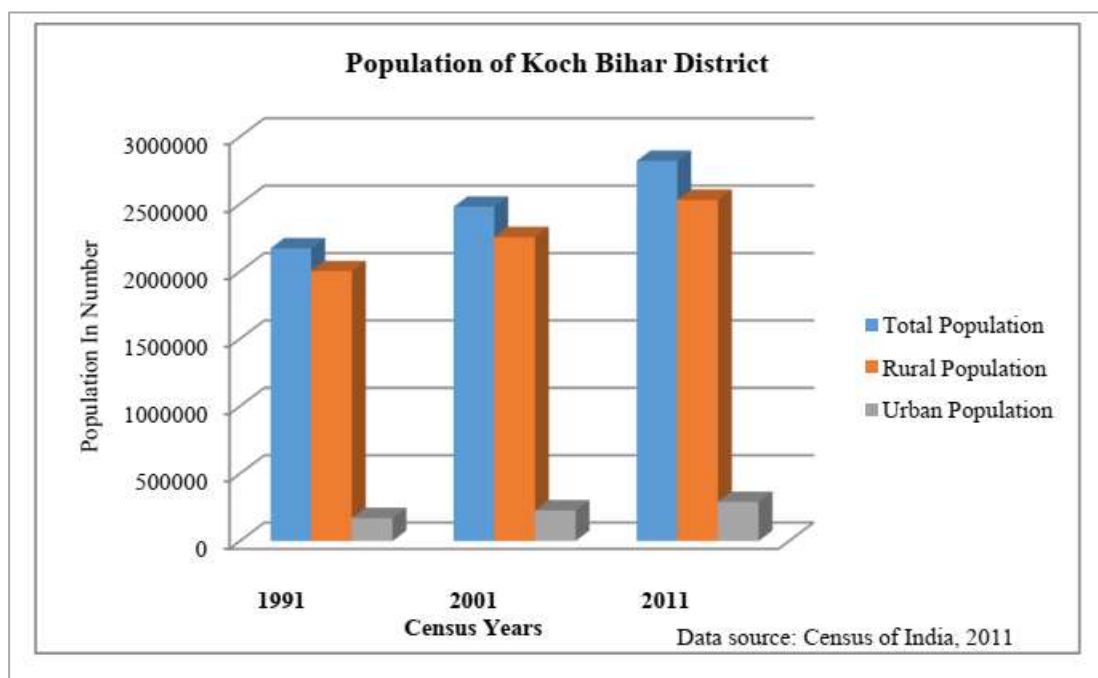


Figure: Population of Cooch Behar District, Source: Census of India, 2011

Table: Demography of Cooch Behar District, Source: Census of India, 2011

Demography		
Population (2011)	Total	2819086
	Male	1451542
	Female	1367544
% Share in State's Population		3.09
% Share of Urban Population (W.B.)		10.27(31.87)
% Share of Rural Population (W.B.)		89.73(68.13)
% Share of SC (W.B.)		50.17(23.51)
% Share of ST (W.B.)		0.64(5.8)
% Share of Children (0-6)		12.23(11.59)
	All	974(950)
Sex Ratio (W.B.)	SC	941(951)
	ST	931(999)
	Children of (0-6)	948(956)
Population Density (per Sq. Km) (W.B.)		832 (1028)

Decadal Growth

The decadal growth rate is the key indicator of population dynamics at the district and national levels. It is observed that the district's decadal population growth rate has declined from 22.5 per cent during 1991 to 13.7 per cent during 2001-2011, and the rural decadal growth rate has also followed a similar trend. The urban growth rate has declined, from 38.6 per cent in 1981-91 to 28.3 per cent in 2001-2011, although the overall population has increased over time.



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Table: Cooch Behar District's Decadal Population Growth Rate

Census Years	1981-1991	1991-2001	2001-2011
Total	22.5	14.2	13.7
Rural	21.4	12.6	12.3
Urban	38.6	33.1	28.3

Data Source: Census of India, 2011

Density of Population

The district's population density from 1991 to 2011 is shown in the table below. The table shows that the district's population density has increased from 641 per sq. km. in 1991 to 832 per sq. km. in 2011. Similarly, the rural population density has increased from 596 per sq. km. in 1991 to 762 per sq. km. in 2011. It is also observed from the above Table that the density of urban population has followed an increasing trend up to 1991, but in the 2011 Census it has decreased to 4198 per sq. km. from 5458 per sq. km. in the 2001 Census.

Table: Population Density of Cooch Behar District

Population Density(person/sq.Km)	Census Year		
	1991	2001	2011
Total	641	732	832
Rural	596	674	762
Urban	5648	5458	4198

Source: District Census Handbook of Cooch Behar District 2011

Sex Ratio

The sex ratio is an important demographic indicator of the population's gender balance and is compiled for every Census year. The following Table shows the district's sex ratio.

Table: Sex Ratio of The State and The District, 1901-2011

Census Year	West Bengal			Cooch Behar		
	Total	Rural	Urban	Total	Rural	Urban
1901	945	994	650	881	892	540
1911	925	982	614	873	885	529
1921	905	971	591	877	888	875
1931	890	961	578	886	896	621
1941	852	945	559	879	893	608
1951	865	939	660	855	867	713
1961	878	943	701	890	899	744
1971	891	942	751	916	923	837
1981	911	947	819	935	936	927
1991	917	940	858	935	933	951
2001	934	950	893	949	947	964
2011	950	953	944	942	939	974

Source: District Census Handbook of Cooch Behar District 2011



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It is observed from the table that the district's sex ratio in the 2011 Census is 942, with rural at 939 and urban higher than both the total and rural, at 974. The district's total sex ratio shows an upward trend up to 2001, except in 1981 and 1991, when it remained unchanged; in the 2011 census, it decreased. The rural sex ratio also showed an increasing trend, except in 1991 and 2011, when it decreased compared to the previous year, whereas the urban sex ratio consistently increased up to the 2011 Census.

Climate

Table: Rainfall and Temperature of Cooch Behar District

Year	Annual rainfall (mm)	Maximum Temp. (°C)	Minimum Temp. (°C)
2007	2537	37	5
2008	3057	36	7
2009	2438	37	7
2010	3673	37	7
2011	2669	37	5

Source: District Statistical Handbook, 2011.

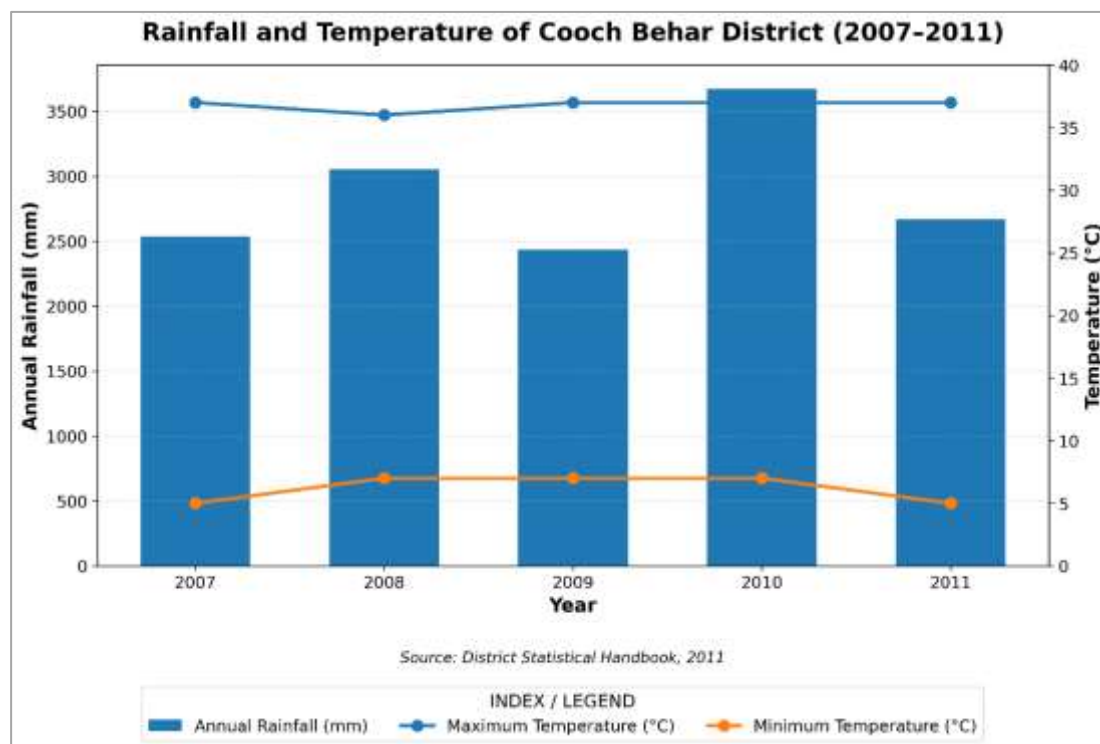


Figure: Rainfall and Temperature of Cooch Behar District (2007-2011)

Climate also plays a very important role in human life. Depending on the climate, their housing characteristics, food production, food habits, and lifestyle change. As the district's climate is suitable for human settlements and agriculture, it reflects on the people in this region. 70.00 per cent of the district population depends on agriculture. Along with various vegetables, rice, wheat, maize, etc. are the main agricultural products of the district, which are entirely dependent on the climate; as a result, the occupation of the Schedule Caste people reflects this. The climate of the district is a crucial physical factor which



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determines the nature and extent of agricultural conditions. There is a notable extremity in temperature and rainfall. The climate of the district as a whole is characterized by tropical monsoon. The climate of Cooch Behar is damp and furious, but not as hot as the western part of West Bengal, mainly like Medinipur, Bankura and Purulia districts. It received annual rainfall 300 to 400 cm and average temperature of the district is 27° C. The maximum and minimum temperature of the district are on an average 25° to 35°C in summer and 5°C to 10°C in winter. The district experience mainly 3 types of seasons, winter summer and monsoon. It experiences rainy season in the month of July to September, and during this time it accompanied Thunder Lightening and rain. October to February the district experience winter season and during this time it experienced fog, cyclone, dew, smog etc. March to May the district experienced summer condition, hot weather and sometimes it faced 'Kalboishaki' the cyclone originated in the Bay of Bengal.

Soil

Soil is the main component on which cultivation can be practised, as the majority of the people in the district are Schedule Caste and among them, the majority (90.00 per cent) are engaged in farming activities. So, to understand the Soil characteristic is the most important, which also reflects on the distribution of population. The soil of the region is formed by alluvial deposits which is acidic in nature. "It is fragile loam to sandy loam ranging in depth from 0.15 to 1 metre. Except for some village (especially in the banks of Karatoya) clay lands are rare" (Chowdhury, 1903). The soil is generally acidic in nature, because of heavy rainfall. The moisture holding capacity of the soil is very low. Silt-loam and sandy-loam soil are found in the northern portion of the district. The sandy-silt soil is formed along the flood plain of the major rivers. Older alluvium soil is found far away from river courses. Newer alluvium soil is found near the river. Every year this newer alluvium is deposited over the low-lying areas. "The level of nitrogen is low in the soil while potassium and phosphorus levels are medium. Deficiency of zinc, calcium, magnesium and sulphur are quite high" (DL& LRO Report, Koch Bihar, 2011). Sandy- loam soil is found in Mekhliganj, Haldibari, Mathabhanga-I and Sitai Block. Loam Soil is found in Mathabhanga-I, Cooch Behar-I, Cooch Behar-II, Dinhata-II, and Dinhata-I. In Cooch Behar District, about 53.4 per cent of the area is covered by deep fine loamy soil.

Rivers

The district has a network of perennial rivers and ephemeral streams. The rivers in Cooch Behar mostly flow from north-west to south-east. The major rivers are originated in the Himalayas and entered the district from the western Duars of the district Jalpaiguri and after flowing through the district, they enter the Rangpur district of Bangladesh to discharge into the Bramhaputra River. Numerous numbers of rivers are running through the Cooch Behar district. But the river Torsa is main life line of the district. The major rivers of the districts are Torsa, Jaldhaka, Kaljani, Gadhdian, Sankosh, Marshai, Gargharia etc. all the rivers are tributaries and distributaries of the Bramhaputra River Basin. The banks are abrupt, giving proof of widely nature of the streams and the beds are sandy. One of the main characteristics of rivers in Cooch Behar District is meandering channels, lots of ox-bow lakes and cut off meander is also found.



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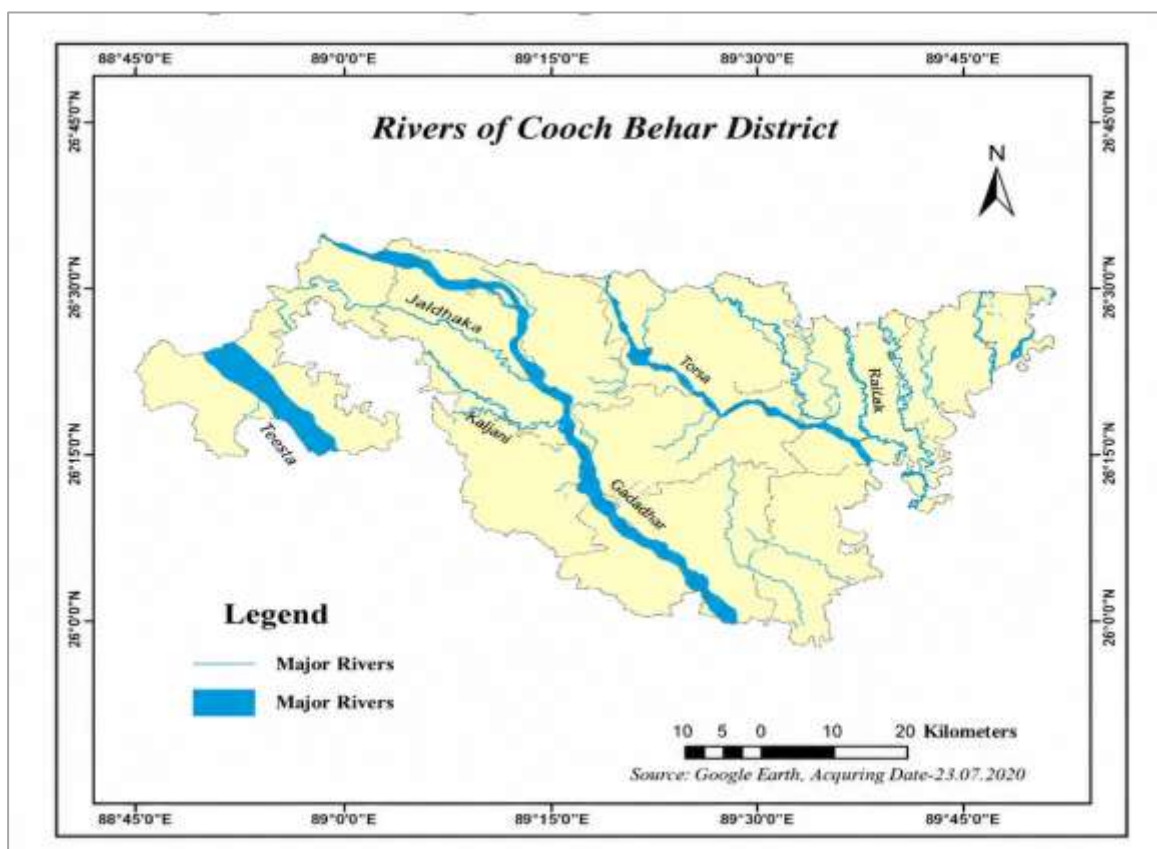


Figure: Rivers of Cooch Behar District

Flora and Fauna

The flora of the district is numerous and too varied in the species. Its alluvial soil helps to grow all type of plants, crops, vegetables and flowers and contribute a lot to the richness of its natural objects. The Bamboo is the most predominant in this region which grows abundantly all over the district. Brush and Brushwood are plentiful but there is no forest formed in the district. Only some small patches of land containing sal trees are found in few places. Coconut- *Narikel*, Date- *khejur*, Bamboos- *bansh*, Plantation of Banana- *Biche kala* or *athiei kala*, *Jhama kala*, *Chini-champa* or *Champa Kala* etc. are found in the district. The trees like *Bat*, *Ashwatha* or *peepul of makur* or *parur*, *dumer* or *jagnadumur*, and the timber trees like *sal*, *shishu*, teak etc. are observed in the district.

Except the areas near Rasikbil and Patlakhawa there are no large vegetation is found in the district. This is the reason of variations of forest animals, birds or flowers in the district. In the restricted areas of forests, multiple wild species can be found including Cheetal, Barking Deer, Sambhar, Hog Deer, Indian Bison (Gaur), Civet Cat, Jungle Cat, Leopard Cat, Jackal, Mongoose, Wild Pig, Hog Badger, Fox, Wild Dog, Pangolin, Hispid Hare, Porcupines, etc. Turtles and small Tortoises are found in the riverine areas and water bodies beside Gosap, small Crocodiles, frogs, and Snakes. Birds such as Crow, Raven, Parrots, Cuckoo, Bulbul, Parakeets, Woodpecker, Kingfisher, Sparrow, Mayna, etc., are found throughout the district.



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Conclusion

The district's geographical characteristics have contributed significantly to the development of agriculture, with paddy, jute, vegetables, and other crops forming an important part of the local economy. At the same time, seasonal flooding, riverbank erosion, and waterlogging remain major geographical challenges in several areas. Overall, the geographical profile of Cooch Behar reflects a close relationship between its physical environment and human activities. Its fertile plains, river systems, climatic conditions, agricultural resources, and strategic location make it an important district of North Bengal. Sustainable management of natural resources, improvement of infrastructure, and effective measures for flood and erosion control are essential for achieving balanced and sustainable development in the district.

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