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“PHYSICAL FEATURES AND SETTLEMENT PATTERNS OF COOCHBEHAR”

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Abstract: One of the biggest obstacles to sustainability is urbanization. It is an intricate transformational process that impacts both people and environments. As a result, the size and number of urban areas worldwide are constantly growing. Urbanization is the process of becoming urban, or to put it another way, urbanization is a cycle that a country goes through as it transitions from rural to industrial society. People move from rural to urban regions, which are referred to as the concentration of people linked with the non-agricultural sector with changes in land usage and rural suffering. It is a geographical phenomenon that affects people, places, and infrastructure and involves population concentration, structural change, and socio-cultural change. While a sign of growth, the quantity and expansion of urban areas have negative effects on individuals and society as well as the long-term viability of the environment. Because tomorrow's bigger cities will be smaller communities today. With planned or unplanned expansion throughout time, towns have more environmental issues than their rural environs do from their inception to their maturity. So, in this situation, it is critical to examine each urban area's growth pattern since the majority of environmental issues have their origins in a town's development or expansion, which has a negative impact on the town's natural stability. The unfortunate situation of numerous first-order towns and cities, as well as metropolitan and agglomeration cities, suffering from numerous environmental tribulations frequently makes headlines, but towns of lower order of sequence or smaller in size are not properly highlighted, even though they will face the same problems in the future. The primary topics of this paper are coochbehar physical features and its settlement patterns

Keywords: Coochbehar, Environment, Infrastructure, Settlements Patterns

I. INTRODUCTION

Cooch Behar town is the administrative center for the Cooch Behar district in West Bengal, India. At 26°22'n 89°29'e, it is positioned in the eastern Himalayan foothills. In the area of north Bengal, Coochbehar is a planned town. There are several

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uses for the municipality's territory. Residential usage makes up the largest portion of the overall area. Good land cover is also needed for transportation and communication. 64.78% of the total area is made up of public and semi-public residential zones. The green belt barely makes approximately 0.36% of the entire area of Coochbehar Municipality due to

deforestation. 0.46 square kilometers are utilized for a variety of purposes. The area used for commerce and industry was 0.07 km² and 0.13 km², respectively. 0.3 square kilometers of underdeveloped land are utilized for agriculture. A board of councilors chosen from each of Cooch Behar's 20 wards makes up the municipality, along with a few others selected by the state government. A chairman is chosen by the board of councilors from among its elected members; the chairman serves as the municipality's executive leader. In the municipality, the All India Trinamool Congress is in charge. The town's tourism, health, and education are all managed by the state government.

A prince who practiced feudalism governed Koch Bihar up till the 28th day of August 1949. It was on August 28, 1949, when the Maharaja of Koch Bihar ceded control of the area to the Government of India. On September 12, 1949, the administration was turned over to the Indian government. On January 30, 1950, Koch Bihar was then moved and became a district by joining West Bengal (Chaudhuri). According to its physiography, the district is a part of the Lower Ganga Plain's Barind tract, location between the southern peninsula and the northern Mountains. The northern side of Koch Bihar is mostly covered with terai (marshy) vegetation. The district of Koch Bihar is situated within the latitudinal ranges of 25°57'47" to 26°36'20" N and 88°47'44" to 89°54'35" E (Rukhsana and Alam). Major

crops including rice, wheat, lentils, tobacco, and jute are cultivated in Koch Bihar, where agriculture dominates the economy. There are 2,819,086 districts, and around 89.70% of the population lives in rural areas. The district's gender ratio is 942 females for every 1,000 men, which is lower than the state's, which is 950 females for every 1,000 males (Ray, M. & Rahaman 45-51). The population under the age of six makes up 11.77% of the whole population, and there are 963 people between the ages of 0 and six who are male (Bhattacharjee). According to the 2011 Indian census, Koch Bihar is the district in West Bengal with the highest percentage of people who belong to the Scheduled Caste (Block et al.). The population of the Schedule Caste (SC) is mostly involved in agriculture, although overall and regional food security is still less than in other districts of West Bengal. According to statistics, 90 percent of the district's land is rural, where inadequate irrigation infrastructure, a lack of basic agricultural tools, and a lack of agricultural expertise impede all agricultural activities. Infrastructural advancements in the area are also behind schedule. Around 650 km of the district's roads are unmetalled, whereas 545 km are, according to a research, showing a sad state of the transport infrastructure (Sarkar et al. 499-507). Despite still, there are just 102 kilometers of rails in existence. According to the 2011 census, the district has a health index score of 16, which is rather low when compared to other

districts. The districts' income index and education index show the same pattern. The overall situation represents how behind the district is. According to (Ray, M. & Rahaman), Koch Bihar is divided into 12 blocks: Haldibari, Mekhliganj, Mathabhanga-I, Mathabhanga-II, Sitalkuchi, Cooch Behar-I, Cooch Behar II, Tufanganj-I, Tufanganj-II, Dinhata-I, Dinhata-II, and Sitai (Figure 1).



Figure 1 : Geography of Cooch Behar district

Koch Bihar has several different geographical features; however no researcher has yet conducted a thorough analysis of any of these features. The present study was focused on the physical features of Cooch Behar and its settlements patterns.

1.1 Historical background of the Region:

While poorly recorded, the history of the whole region of North Bengal reveals continuous changes in authority and corresponding changes in the territorial position of that power. It is acknowledged that only the undivided Dinajpur and Malda regions of what is now North Bengal have a strong historical foundation, whereas Cooch Behar, Jalpaiguri, and Darjeeling lack

systematic historical backing for their origins (Choudhury54-76). Before to 1200 AD, Bengal did not exist(Sarkar and Hannan499-507). The Pragjyotishpur region included all of modern-day North Bengal and the northern half of modern-day Bangladesh. Ancient Indian mythical scriptures make reference to Pragjyotishpur by name. The region of Pragjyotishpur was afterwards split into Poundra (Poundrabardhana) and Kamrup. Poundravardhan was the region that stretched along the western bank of the Korotoya. Popularly known as Kamrupa, the eastern bank of the River Korotoya extended up to the powerful River Bramhaputara. Early in history, the district Cooch Behar was created to be a part of Kamrupa's western boundary. Harendra Narayan Choudhuri (1903)(Chaudhuri1-667) observed that 'at no point maybe did the nation Kamrupa recognise dominion of one entity totally. Prior to the separation of that nation between the Koch ruler Naranarayan and his brother Shukladhvaja (Chila Ray), in the middle of the sixteenth century, Cooch Behar had no independent existence as a distinct principality(Das32).Mahiranga Danava, who is said to have been the first king of Kamarup and was followed by three kings, is the first known ruler of the kingdom. After them, Pragjyotishpura seems to have been inhabited by a Kirata race. Bhaskar Barman became Kamarup's significant king in 639 AD. The Koch, Mech, Garo, and Bhot tribes took control of the nation after the Gupta and Pala dynasties.

The name of the kingdom Kamrupa was altered in the 13th century when Kamtapur became its new capital (Presently, Gosanimari located fifteen miles south to the present Cooch Behar town). The state was renamed Kamta as a result, and from that point until the end of the 19th century, Kamta served as the political and cultural hub of eastern India. Native rulers consecutively controlled the Kamata kingdom, starting with Sandhya Roy in 1255 AD and ending with Nilamber in 1482 AD. Hunter (1876) claimed that the Khen dynasty succeeded the Pal dynasty. Hossasin Sah, the Muslim Chief, took Kamata in 1493, but he was unable to rule the area for more than 12 years. The Muslim had been expelled, and the Kamata Kingdom had descended into chaos (Ahmed). In the meanwhile, the Koch leaders were gradually gaining control. Vishva Singha invaded the kingdom in 1515 AD and overthrew the Muslim monarch. From Darrang in the upper valley of the Brahmaputra to the boundaries of the Purnea District, Vishva Singha established an empire.

1. Settlement Patterns in Cooch Behar:

Just once, in conjunction with the State's first settlement, was the whole of Cooch Behar surveyed for settlement reasons. There doesn't seem to have ever been a comprehensive measurement of lands done until the Khas Tehsil system was established in 1872. Until the year 1790, or in the pre-Ijardari era, the settlement was made annually, and the Jotedars

were usually always permitted to extend their contracts based on the jama paid the year before. With the implementation of the Ijardari system, it was the responsibility of the farmers to determine the value of their land, and the State paid little attention to the agreements these individuals reached with the rayats. Measurement of lauds was sometimes used in the Khas mahals and in the case of new settlements, and this was done using the primitive khashrah or ancient native method. This is still the case in the majority of Bengal's rural areas today, this method seems to have been popular in the nation from very ancient times. The measurement was done without the aid of a compass and using a rope or rod that was fixedly measured in linear increments of 2 feet. The length was varied for debutants and criminals. Using this rod or rope, both the boundary survey and the interior fitting were previously conducted, and, like everything else from the past, needed a great deal of the surveyor's own talent and training.

2.1 Drainage pattern:

The main rivers in the Koch Bihar district run slantedly from north to south. Except for one, who arrives from the Gumma Duars, all of them rise from the Himalayas and enter the district via the Western Duars of the Jalpaiguri district. The study region has a well-developed river system. The area is traversed by six river systems that travel south-easterly. The Tista System, The Jaldhaka System, The Torsha

System, The Kaljani System, The Raidak System, and The Gadadhar System are those that share the role as the principal source of water supply in order from west to east (District Gazetteers, Koch Bihar, 1977). The rivers are calm throughout the dry season, and because of the Tista's proximity, they continue to be shallow. But, owing to the regular rainfall on the hills, there is a rapid surge in the rivers, which causes them to overrun their banks and gushes water that destroys houses and fields of crops (Ahmad).

2.2 Land use pattern

One of the most important production variables is the land. All individual activities are fundamentally based on the land resource. Throughout the years, there have been several modifications to the land use pattern. The Net sown area was 260.2, 252.5, and 250.6 thousand hectares during 1981–1982, 2001–2002, and 2010–2011, respectively, which amounted to an average of 76% of the district's 331.57 thousand hectares of total geographic area. The information on the district of Koch in Bihar's land use pattern is provided below.

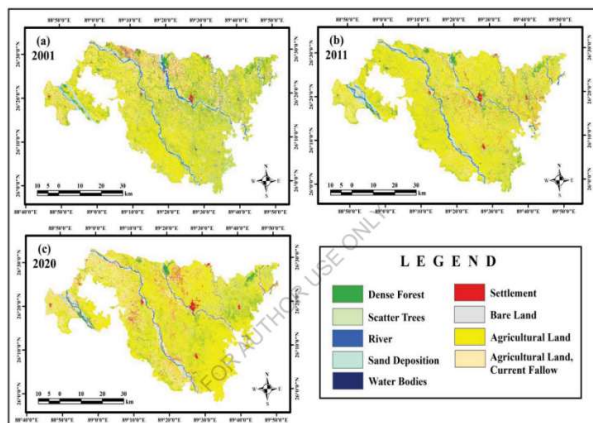


Figure 2 : Land use map of Koch Bihar district (2001-

2020).

Figures 2 and 3 show that the LULC has nine primary classifications, which are shown on the map as dense forest, scatter trees, rivers, sand deposits, water bodies, settlements, barren land, and agricultural land for the years 2001, 2010, and 2020. According to results from classified maps, in 2001, different classes occupied different amounts of space: agricultural land accounted for approximately 41.49 percent of the total, bare land for 0.64 percent, settlement areas for 2.90 percent, dense forest for 13.93 percent, and rivers and water bodies for approximately 2.12 and 0.20 total percent. To the contrary, compared to 41.49 percent of the area in 2001, roughly 55.29 percent of the area was covered by agricultural land in 2011. This indicates that the amount of agricultural land is growing, and by 2020, there will only be 56.44 percent of it left. Just 7.60 percent of the land was covered in deep forest, with 8.61 percent of it being covered with scattered trees.

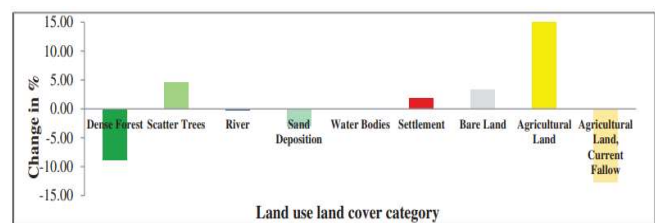


Figure 3 : Change detection of different land use and land cover classes in Cooch Behar district (2001-2020)

The 2020 picture shows a drop from 13.39 percent to 5.09 percent thick woodland. It reveals a big alteration around -8.84 percent decline of thick forest, 9.52% fear trees, 4.82 settlement, and 2.66% barren land and

dehydrogenate monoxide bodies. In 2011, thick terrain, sparse trees, and settlement expanded. From 2001 to 2011, agriculture on present fellow land changed by -12.65%, a substantial shift in a defined year.

From 2001 to 2020, agricultural land increased significantly on the mainland. Agricultural land increased 351.76km² from 2001 to 2020. These river and water features are under modest forestry. Dense forest class loss declined throughout the previous three decades. Population pressure caused the conversion of thick forest regions to habitation and agricultural land.

2.3 Cropping Pattern

The germination of crops relies on a variety of variables, including crop acreage, input control, and yield (Rukhsana et al.41-59). The fertility of the soil, monsoon behavior, rainfall, irrigation, the availability of agricultural laborers, climate changes, pricing, etc., determine the cultivated area and production. More than 80% of the district's gross cultivated land was used for the main crops of rice, wheat, maize, jute, potato, tobacco, legumes, and vegetables. The following are the district's primary crops:

- Paddy of three kinds, the Aus, Aman and Boro.
- Jute: the Capsularis and the Oliotariss.
- Tobacco

- Rape and mustard seeds.
- Pluses: Mug, Masur, Khesari, Thakri, Kulti, Arahar etc.
- Barley and Wheat.
- China and kaon, Millets.
- Indian corn (Makai).
- Roots and bulbs: mainly potato but also onion, garlic, ginger and turmeric.
- Mutha or Matting grass(Ahmad41-59).

3. Conclusion:

Towards the end of the colonial period, a differentiated peasantry, an expanding number of intermediaries, and an army of landless sharecroppers who lived on landlords' land were the hallmarks of agricultural relations in the princely state of Coochbehar. The lowest classes of the peasants, who were becoming more and more in debt, were under growing pressure from rising rents. The Jotedars of princely Cooch Behar were the greatest landowners after Independence. They had significant landholdings. In Kalmandasguri, one Jotedar owned the vast bulk of the land. There were just four landowning families in the whole village, and they were all related. The Jotedars owned the land on which all

other houses in Kalmandasguri were landless and resided. The Jotedars regularly forcibly removed these families from their homes and exacted various forms of criminal payment. The Cooch Behar Krishak Sabha started organizing sharecroppers and farmers from the low end of the economic spectrum banding together in the 1950s to seek control of unused Jotedar land and to oppose the forceful removal of adhiars from their homes. The drive in Kalmandasguri to find and seize benami land became stronger after the United Front Government took power. After the Left Front took office in 1977, ongoing mobilization helped to establish the circumstances for the execution of land reform. The first and striking result of land reform was the creation of a far more fair system of land ownership in Kalmandasguri. According to the village surveys that WIDER did in Kalmandasguri in the 1980s, land reform significantly and favorably impacted the earnings of the village's landless families. 28% of the total revenues of the formerly landless families who benefited from this initiative were derived from allotted land. In Kalmandasguri, before land reform, all but four households did not own any land. After the land reform, 78% of households had access to farmland. About majority of the cropland in the village was farmed by sharecroppers prior to land

reform. Just 8 families rented property in 2005; they together farmed 7.99 acres.

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