CHAPTER TWO

Geography of West Bengal

Geographically, the land of Bengal includes modern day Bangladesh and West Bengal, dates back to four Millrina B.C. This region stretching from the Himalaya in the north to the Bay of Bengal to the south, from Chittagong hill and the Brahmaputra in the east to the extended part of the Chhotanagpur plateau in the west. The region was probably outside the pale of Aryanises culture as it finds no mention in the Vedic hymns.

Followings are the ancient geographical units of Bengal:

Samatata, Pundravardhana, Vanga, Vanga, Suhma, UttraRadha, DakshinaRadha and Gauda. Samatata represent the trans-Meghna area of the Comilla-Mainamati area of Bangladesh whereas Pundravardhana stands for the Barindri tract of the northern districts of Bangladesh and West Bengal. Vanga means the deltaic region between the eastern bank of the Bhagirathi and the Dhaka-Vikrampur section of Bangladesh. The other units fall exclusively in West Bengal. Eastern part of Radha was called Suhmabhumi denotes the coastal tract of district of Medinipur. UttraRadha covers parts of Birbhum and the Bardhaman districts. DakshinaRadha is mainly Bankura and the non-coastal Medinipur. Murshidabad district, parts of Birbhum formed the territory of ancient Gauda.
Some rivers of Bengal those were mentioned in the ancient texts and epicgraphic evidences.

**Bhagirathl** - This river is mentioned in the *Harivamsa* and in the *Yoginitantra*. It is so called because Bhagiratha brought this sacred river to this land. Indra worshipped Lalita on the bank of this river. It flows through Suhma in the Bengal. According to the Sena and Chandra Copperplates, the Bhagirathl is the Ganges. The Naihati Copperplates of Ballala points out that the Bhagirathi was regarded as the Ganges, and the queen mother performed a great religious ceremony on its banks on the occasion of the solar eclipse. There is references in the Govindapur Copperplate of Lakshmanasena that the Hooghly river was called Jahnavi, which flowed by the side of Betad in the Howrah district.

**Karotoya** - This river is a branch of the Brahmaputra. It formed the western boundary of Kamarupa. The *Padma Purana* mentions it as a holy river. It is also mentioned in the *Markendeya Purana* and in the *Yoginitantra*. This river was according to Kalika Purana 30 yojanas long and 100 yojanas wide and has its origin in the district of Rangpur.

**Kausiki** - This river is mentioned in the Nidhanpur Copperplate of Bhaskaravarman, king of Kamrupa. The *Ramayana*, the *Mahabharata*, the *Varaha Purana* and the *Padma Purana* refer to this river. It is also mentioned in the *Kalika Purana* as the Mahakausiki issuing out of the Himalaya Mountain. Kalidas mentiones the Mahakausiki in his *Kumarasambhava.*
Kapisa- According to *Raghuvamsa* Tamralipti is situated on the bank of the river Kapisa identified by Pargitar with the Kasal river flowing through the district of Medinipur.

Geography of West Bengal, a state in eastern India, is diverse, of high peaks of Himalaya in the northern extremes to coastal regions down south, with regions such as plateau and Ganges delta intervening in between. West Bengal is only state in India where Himalayas are in the north and Sea is at the south, with both plains and plateaus covering the remaining region.

- Geographical, especially physical and geological background of West Bengal which covers the vast area of Ganga Delta the largest delta in the world, now contained by the State of West Bengal in India and Bangladesh thus stretching from Purulia in the West to Cachar in the east Bengal. The development of three distinct categories of landforms suits under varied weather and climatic conditions at different altitudes e.g i) the Himalayan Ranges and submontane valleys in the north, ii) the plateau's highlands in the west and south-east and iii) the rich riparian lands elsewhere in the area, have given the regions, sub-regions and even the districts of Bengal a different geographical identities. Its location between the Himalayas to the north and Bay of Bengal to the south manifests a
great diversity of climates with many contrasts of meteorological conditions. Except the northern most sectors the remaining parts exhibit the transitional pattern of weather marked by the moderate temperature and rainfall conditions along with the tropical disturbances including the local storms as well as other associated features. The interactions between the local factors and the outlying conditions have brought about many remarkable weather system typified by tropical as well as subtropical phenomena. The most prominent features of its climate is the 'reversal of pressure' characteristics thus resulting in the occurrence of the monsoon wind systems which are marked by their alternation of dry and wet seasons causing drought and flood landscapes. Perhaps there is no area of similar size in India which has such a wide spectrum of climatic types, landscapes and drawing patterns as Bengal ranging from some of the coldest to the hottest, from the humid to the semi-arid zones on one hand and from lowlying coastal plain to the higher Himalayan mountains on the other.

- The major physiographic division of West Bengal can be grouped as follows: i) Extra peninsular mountaineous terrain of Darjeeling Himalayas. ii) Piedmont Plain of North Bengal comprising Bhabar-Tarai belt. iii) Peninsular Shield of SouthWest Bengal. iv) Gondwana platform. v) vast lowlying alluvial tract of the Southern and Eastern part. vi) Coastal tract of Bengal Basin.
The Northern mountainous terrain covers Darjeeling and part of Jalpaiguri districts. The South-Western peninsular tract is in fact, the eastern extension of Chhotanagpur Plateau exhibiting rolling topography comprising Purulia, Medinipur, Bankura, Birbhum and part of Bardhaman districts. This hilly come undulating topography is gradually smothered eastwards to give place to upland of laterite and finally to the lowlying alluvial plains which in the further south form the shoreline of Bay of Bengal in the deltaic region. The general slope of West Bengal is towards south, though in the south-western part, an easterly slope is conspicuous.

POLITICAL GEOGRAPHY - The riverine plain of Bengal is in the Eastern region of India with Tropic of Cancer running across it, the State is situated between N 21° 30' & 27° 30' and E 85° 30' & 89° 45'. The geography of the State is unique in the sense that its northern part is the Himalayan Range, whereas the extreme southern part touches the Bay of Bengal and is covered by the active delta of the Sundarbans mangrove forest. The greater part consists of detrital and alluvial plains.

There are 19 districts and 3 divisions in West Bengal. The Burdwan Division consists of Bankura, Bardhaman, Birbhum, East Midnapore, West Midnapore, Hooghly and Purulia District, the Jalpaiguri Division consists of North Dinajpur, DakshinDinajpur, Cooch Behar, Darjeeling, Jalpaiguri and Malda, and the Presidency Division consists of Kolkata, Murshidabad, Nadia, North 24 Parganas, South 24 Parganas and
Howrah. Each district is governed by a district collector or district magistrate. Each district is subdivided into Sub-Divisions, governed by a sub-divisional magistrate, and again into Blocks. Blocks consist of panchayats (village councils) and town municipalities. Often the districts north of the Ganges i.e., Cooch Behar, Darjeeling, Jalpaiguri, North Dinajpur, South Dinajpur and Malda are together termed as North Bengal.

DARJEELING HIMALAYAN HILL REGION

Darjeeling Himalayan hill region is situated on the North-Western side of the state. This region belongs to the Eastern Himalaya range. The whole of the Darjeeling district except the Silliguri division and a narrow part in the northern part of Jalpaiguri district constitutes the region. It starts abruptly up from the Tera region. The deep gorge of Teesta River has divided this mountainous region into two parts: the Singalila and Darjeeling ranges run from north to south in the western part. The Singalila range is located along the border of Darjeeling and Nepal; it has four important peaks - Sandakfu, Falut, Sabargam and Tonglu. Among the Himalayan range of this region, Singalila range hosts Sandakfu which at 3,636 metres (11,329 ft) is the highest point of West Bengal. Also to mention Sandakphu & Phalut are the only place in West Bengal from where Mt. Everest is visible. Two high peaks, Tiger Hill and Ghoom are seen near
the town of Darjeeling. Many ranges branch off in different directions from Tiger Hill. Durpindara is an important mountain in the eastern part of the mountainous region. A few hills also occur in the Terai or Dooars region at the foot of the Himalayas. Some remnants of the Siwaliks can be seen in the Jalpaiguri district, where they are known as the Buxa-Jayanti Hills.

**TERAI REGION**

The “Terai” (‘moist land’) is a belt of marshy grasslands, savannas, and forests at the base of the Himalaya range stretching southwards to about 38 km. Above the Terai belt lies the Bhabhar, a forested belt of rock, gravel, and soil eroded from the Himalayas. The Terai zone is composed of alternate layers of clay and sand, with a high water table that creates many springs and wetlands. The Terai zone is inundated yearly by the monsoon-swollen rivers of the Himalaya. The *Terai-Duar savanna and grasslands* is an eco-region that stretches across the middle of the Terai belt. The Terai-Duar savanna and wetlands are a mosaic of tall grasslands, savannas and evergreen and deciduous forests. The Terai and Dooars region politically constitute the plains of Darjeeling District, whole of Jalpaiguri District and upper region of Cooch Behar District in West Bengal. The slope of the land is gentle, from north to south. The general height of the land is 80 to 100 m. The entire region is made up of sand, gravel and pebbles laid down
by the Himalayan rivers like the Teesta, Torsa, Raidak, Jaldhaka, Sankosh and several other small rivulets. The Teesta has divided the area into two parts- the western part is known as the Terai whereas the eastern part is known as the Dooars or Duars. The Dooars region can be further subdivided into the Siliguri or Western Dooars, the middle or Jalpaiguri Dooars and the eastern or Allpur Dooar.

NORTH BENGAL PLAIN

North Bengal plain or Barind Plain starts from the south of Terai region and continues up to the left bank of the Ganges. The southern parts of the district Jalpaiguri, North Dinajpur barring some extreme northern regions, South Dinajpur, Malda and southern part of Cooch Behar districts constitute this geographical region. The narrow land mass in the North Dinajpur district is known as Mahananda Corridor. This corridor runs north to south joining Malda with the plains of Jalpaiguri and Cooch Behar. The entire part of North and South Dinajpur is silt laden plain.

Mahananda River divides the district of Malda into two parts. The eastern part consists of undulating plains and some tilas and is made up of old alluvium and is a part of the Ganges delta. It is also known as Barind or Barendra Bhum. In contrast to the eastern part, the western part is made up of new alluvium and in this part River Kalindi joins the Mahananda River. The part of Malda lying to the north of river Kalindi is known as Tal.
This is lowland and covered with swamps and beels (small water bodies). Whereas the area south of the Kalindl is a very fertile land and is known as diara. The plain in the south of Jalpaiguri and Cooch Behar district is also made of new alluvium deposited by numerous rivers like the Teesta, Torsa, Raidak, Jaldhaka, Sankosh, Balason, Punarbhba, Atrai and several other small rivulets.

WESTERN PLATEAU AND HIGHLANDS-

The Western plateau and highlands form the eastern fringes of the Chota Nagpur Plateau and the entire land is made up of igneous rocks of the Archaean era as well as coal-bearing mudstone and quartzite rocks of Carboniferous period. The western part of Purulia, Bankura, Birbhum, Bardhaman and PaschimMedipur district constitutes this area. Because of long and continuous erosion, the whole region has been transformed into an undulating peneplain. This area is interspersed by small monadnocks locally known as tila. Some of the important hills in the area include Ayodhya Hills (667 m), Panchet and Baghmundi of Purulia, Biharinath (452 m) and Susunia (442 m) of Bankura. The area has a slope from the west to the east. The altitude in the area ranges from 500 to 100 m. Gorgaburu in the Ayodhya Hills (677 m) is the highest point in the region.
RARH REGION- Rarh is the region that intervenes between the Vajjabhumi and the Ganges Delta. Parts of the districts Murshidabad, Birbhum, Bankura, Bardhaman and Medinipur constitute this region. The region is about 50 to 100 m above the sea level. This region is believed to be created from the soil of the Deccan plateau. The area is formed by the silt brought by the tributaries of Bhagirathi, Mayurakshi, Ajay, Damodar and Rupnarayan rivers which flow over the western plateau region made up of laterite soil form the soil of the area red in colour. The land slope is from west to the south-east and formation of natural levees along the river banks is a common phenomenon.

GANGA DELTA- Bengal is proverbially associated with delta. The South Bengal Delta, one of the largest of its kind is formed by the combined effect of two major rivers, the Ganga and the Brahmaputra along with their tributaries. This division, including the eastern part of Buddhist Majjhimadesa, possibly stands for the ancient Prachyadesa or eastern India. Major part of the delta is in Bangladesh. An area of approximately 65,000 sq km of the Bengal delta is situated in the state of West Bengal. The Ganga system in the lower stretches has two major channels, the right-hand one known as the Ganga-Bhagirathi, and the left called the Padma. In its right, is the region, which witnessed the limelight of history already in the pre-Christian centuries? The Ganges delta consists of the whole of Murshidabad district, Nadia, Kolkata, Hooghly, and
Howrah and the northern part of North and South 24 Parganas. The alluvial deposit along the Padma seems to have settled down somewhat later than the right side deposit and historically belongs to a later stage. The Pleistocene alluvium known as the Varendra or Barind, located in the north of Bangladesh is easily distinguishable by the deep red oxidized ferruginous soil. Geophysically and culturally the Ganga-Bhagirathi delta show a uniform historical complex like that of the middle and lower Ganga plains. In addition to these, the western upland alluvium stretch composed of silts carried by the rivers springing forth from the Chhotanagpur hill-ranges has been stable land form since the Holocene period. Needless to say, the physical organization of settlements primarily depended on the geophysical condition of this region, including the character of its land. 2River Ganges passes through this vast area and divides into three distinct parts – the old delta, the mature delta and the active delta.

The old delta consists of the districts of Murshidabad and Nadia. The formation of delta is complete and the rivers here are heavily silted and many have even dried up in due course of time. Silted rivers, swamps, beels and oxbow lakes form the area. This area is also known as Bagri region. The districts of Kolkata, Hooghly, and Howrah and part of North 24 Parganas form mature delta region. The rivers are slow and meandering and frequently shift their courses. Swamps, beels and oxbow lakes characterise the scenery. The northern portion of South 24 Parganas district is known to be the active delta of the Ganges, where the formation of delta is still an ongoing process.

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COASTAL PALIN- A small coastal region is on the extreme south of the state. A part of the district of PurbaMedinipur along the Bay of Bengal constitutes the coastal plain. This emergent coastal plain is made up of sand and mud deposited by rivers and by wind. Parallel to the coast there are series of sand dunes and marshy areas. Dune of Digha lies nearest to the Bay of Bengal while the Kanthi dune is the farthest from it. In some areas dunes occur at a distance of 15-16 km from the coast and are 11-12 m high.

SUNDARBANS - Sundarbansdelta is the largest mangrove forest in the world situated in the South 24 Parganas district. It lies at the mouth of the Ganges and is spread across areas of Bangladesh and West Bengal, India. The Bangladeshi and Indian portions of the jungle are listed in the UNESCO world heritage list separately as the Sundarbans and Sundarbans National Park respectively, though they are parts of the same forest. The Sundarbans are intersected by a complex network of tidal waterways, mudflats and small islands of salt-tolerant mangrove forests, and presents an excellent example of ongoing ecological processes. The general average height of the area is 10 m. This area has been created by deposition of silt by its numerous rivers namely, Hoogly, Matla, Jamira, Gosaba, Saptamukhl, Haribhanga river and their tributaries. The formation of the delta is an ongoing process and new bars and islands are being...
created along the rivers and at the river mouth. A large section of the area remains under water during incoming tides.

The area is known for its wide range of fauna. The most famous among these is the Bengal Tiger, but numerous species of birds, spotted deer, crocodiles and snakes also inhabit the area. It is estimated that there are now 400 Bengal tigers and about 30,000 spotted deer in the area.

SOIL.- The soil of Bengal on the basis of physiographic compositions falls into different groupings, namely, the Lateritic Soil. The Alluvial Soil subdivided into the older alluvium and new alluvium, and yet a third group known as the Tarai Soil. The older alluvium tract in the western up-land, formed by the transported silts from Chhotanagpur- Santalpargana region, loamy in character, is a fertile tract. This region witnessed emergences of different cultural streams. The Ganga alluvium, clayey in content and mixed with fine sand with grey colour surface was a cradle land during the early historical period. In time sequence both the lateritic soil-form and the alluvium silt are older than the newer one and hence human occupation is evident in these tracts much earlier than the than in the lower Ganga plain. Archaeologically, we have reason to believe that in all these zones settlement had spread after slow and gradual deforestation. Agriculturally, both the old and new alluvium areas happened to be fertile from the beginning. But the settlement did not start in these tracts simultaneously. The
lateritic soil-belt having less subsoil base, had limitations in productive capacity and thus was perennially a region of isolation. But this laterite region had different types of potentialities, as the area was characterized by a number of ore deposits, which seems to have been exploited quite early in history.

It is seen that both the older and newer alluvium belts enjoy abundant annual rainfall (120cm to 400cm) endowing the region with ample groundwater resources. As a result, both these tracts are covered with natural vegetation. Rice has been staple corn, grown abundantly all over the older and newer alluvium. Archaeologically this was the ecological situation in the ancient period as well. A domesticated variety of rice from number of chalcolithic sites located in the older alluvium belts has been traced.

**RIVERS**-Ganges enters West Bengal near Rajmahal and then flows in a south-easterly direction. It divides into two near north of Dhullian in Murshidabad district. One branch enters Bangladesh as the Padma or Pūdda, while the other flows through West Bengal as the Bhagirathi River and Hooghly River in a southern direction. The Bhagirathi is the main river in West Bengal which flows past some of the important cities like Murshidabad, Baharampur, Nabadwip, Chinsura, Chandannagar, Srirampur, Howrah, Kolkata, Diamond Harbour and Haldia. It empties its water into Bay of Bengal near Sagar Island in the South 24 Parganas.
The Mayurakshi, Ajay, Damodar, Kangsabati, Rupnarayan and their tributaries which rise in the Western plateau and high lands flow eastwards through the different districts of West Bengal and join the Bhagirathi on the right bank. The Mayurakshi, which is fed by tributaries Brahmani, Dwarka, Bakreshwar and Kopai joins the Bhagirathi near Kalna. The Ajay, which rises in the hills of Bihar, joined by the Kunur, flows down the plateau fringe, marking the boundary between Bardhaman and Birbhum districts. Damodar, with its small meandering distributaries, small streams, Khari, Banka and Behula joins the Bhagirathi near Uluberia. The Dwarakeswar and Shilabati rivers join to form Rupnarayan and the Kangsabati and Keleghai rivers join to form the Haldi. The Rupnarayan and Haldi fall into the Bhagirathi in the Murshidabad district. The Subamarekha River after flowing for a short distance in West Bengal enters into Orissa. These rivers carry with them plenty of water thus keeping the Bhagirathi River endowed with water throughout the year. The rivers along with water carry silt and sand eroded from the western plateaus and deposits them in the Bhagirathi and the rivers themselves. This silting is causing great inconvenience for the Kolkata Port and often results flooding in the years of heavy rain. The distributaries of the Padma river like Bhairab, Jalangi, Mathabhanga and their tributaries enter West Bengal and joins the Bhagirathi on its left bank. The Bhairab and the Jalangi meet and their joined waters known as Jalangi falls into Bhagirathi. The Mathabhanga divides into branches namely;
Chumi and Ichhamati, while the Chumi meets the Bhagirathi while the other flows southwards and joins the Kalindi.

The Sunderbans region is covered by numerous estuaries and streams, mainly distributaries of main rivers. The rivers are interconnected and are fed by tidal waters.

The major rivers of the area are Hoogly, Matla, Gosaba, Saptamukhi, Haribhanga, Piyali, Thakuran/ Jamira, Raimangal, Kalindi and Ichhamati. The Teesta flows cutting deep gorges from north to south in the mountainous Darjeeling district, it enters the plains at Sevoke and flows in a mighty stream on straight line towards the south east until it pours its waters into the Brahmaputra in Bangladesh. Torsa, Jaldhaka, Kaljani, Raidak, Sankosh and Mahananda rivers are in the northern hilly region which rise in the Himalayas and flow in a southerly direction through the districts of Darjeeling, Jalpaiguri, Cooch Behar and North and South Dinajpur and enters Bangladesh. As most of the rivers are snow fed, thus they are perennial in nature and often cause floods during the rainy season. The entire region is made up of sand, gravel and pebbles laid down by these rivers. The Mahananda rises from the Dow Hills forest, near the town of Darjeeling and are fed by similar small rivers like, Mahanadi, Balason, and Machi and runs in a zig-zag way through the district of Maida and joins the Padma in Bangladesh. In the central region, the main river is the Mahananda. The Tangon and Punarbhabha, and Atrai arise in the plains, while the former two rivers join together and flows into Mahanadi, Atrai flows into the Padma.
The location of West Bengal in between the higher Himalayas to the north and the Bay of Bengal to the south, manifests a great diversity of climates with many tracts of meteorological conditions. Except the northern most sectors, the remaining its exhibit the transitional pattern of weather marked by seasonality of temperature and rain-fall conditions along with the tropical disturbances including the local storms as well as other associated features. The interactions between the local factors and the prevailing conditions have brought about many remarkable weather systems typified by monsoonal and sub-tropical phenomena. The most prominent feature of its climate is the 'reversal of pressure' characteristic thus resulting in the occurrence of the monsoon systems which are marked by their alternation of dry and wet season causing drought and floods landscapes i.e. the high barrier of the Darheeling Himalayas and the Santanagpur plateau to the north and west of extensive delitatic plains control largely in determination of such weather and climate especially the microlevel variations of climatic conditions marked by contrasts in weather systems in different parts of the area. There is perhaps no area of similar size in India which has such a wide spectrum of climatic types, landscape and drainage patterns as Bengal, ranging from some of the coolest to the hottest, from the humid to some of the semi-arid stations on one hand and a lowlying coastal plain to the higher Himalayan mountains rising to the height of 100mt and more.
Notes:

2. Ibid, p 266.
4. Ibid, 310.