

Physiography of West Bengal

Location : West Bengal, constituent republic state of India is situated in the eastern part of the country along the bay of Bengal between 21°20' and 27°32' N latitude and 85°50'E and 89°52' E longitude.

Extension : West Bengal is extended from the foot of Darjiling Himalayas in the North to the Bay of Bengal in the South (about 623 km) and from edge of Chhotanagpur high lands in the west to the border of Bangladesh and Assam in the east (about 200 kms). The narrowest part lies in Chopra of North Dinajpur District where it is just 9 km wide. Three independence countries share their boundaries with West Bengal. To its east there is Bangladesh (Longest border of 2,272 km), to the north-west is Nepal and to its north is Bhutan. Besides these countries, neighbouring states Bihar and Jharkhand (largest boundary) lie to the west of West Bengal. Orissa lies to the south, to the north-east there is Assam and to the north lies Sikkim.

Physiographic Divisions of West Bengal

West Bengal is essentially a flat, featureless alluvial plain. Large portion of southern Bengal is a part of the delta of river Ganga. Merely 1% of its area is mountainous lying in the far north of the state and about 6% of the total land areas are plateau fringe and Puruliya triangle of upland along western border. On the basis of these features, West Bengal may be divided into seven physical regions (Fig 3.2):

1. The Northern Mountain Region
2. The Western Plateau Fringe
3. The Plains
 - a) The Northern Plains
 - b) The Southern Plains
4. Tarai Region
5. Rarh Region
6. The Sunderban Delta
7. The Coastal Fringe

1. The Northern Mountain Region

The northern mountain region is situated on the north-western part of West Bengal and belongs

to the Eastern Himalayan range. This region covers the whole of the Darjiling district except Siliguri division and some parts of Jalpaiguri district. This region consists of sedimentary and metamorphic rocks. This area suddenly increases its slope from Terai region. This northern part is faced with rising mountain ranges in the Himalaya and down slope to hills on the border of Jalpaiguri district, the hills may give rise to rolling humid plains known as 'Duars'. High terrain, steep gradients, heavy rains averaging from 80 to 160 inches in some places and torrential streams make this region extremely susceptible to soil erosion and landslides. It has maximum elevation of about 12,000 feet (4000 metres) above the sea level. Teesta river divided this region into western and eastern parts. Most of the highest mountain ranges are seen in western part of Teesta river e.g. Sandakphu (3630 mt), Phalut (3595 mt), Tonglu (3036 mt). The eastern part of the Teesta River is lower than the western part of the Teesta river. The famous Kalimpong town is situated in this region. Few hills are also found in the Dooars region at the foot of the Himalayas. Some remnants of the Siwaliks mountain ranges can be seen in the Jalpaiguri district where they are known as the Buxa-Jayanti Hills. This area is transformed into discontinuous hilly topography with highest rainfall.

2. The Western Plateau Fringe

This region is situated on the western part of West Bengal. This plateau fringe is a rolling upland, with small isolated hills standing here and there. This plateau region connecting Rajmahal hills of Bihar and Chotanagpur plateau is the part of Chotanagpur plateau. This region is made of old igneous rock granite and gneiss of the Archaean era as well as coal-bearing mudstone and quartzite rocks of Carboniferous period. Puruliya district (100 metre) has the highest mountain Ayodhya hill (677 metres) in this region. Because of long and continuous erosion, the whole region has been transformed into an undulating peneplain interspersed by small monadnocks locally known as tila. These rocky plains descend eastward to merge with the higher slope of alluvial plain.

3. Plains

Except northern hilly mountainous and western plateau area the remaining is the Plain area. North Bengal plain start from the south of Terai region and continues up to the left bank of the Ganges. Ganga River flows from west to east and divides the plain into northern and southern part. This plain is formed mainly by the alluvium of Ganga River and its branches. The narrow land mass in North Dinajpur district which is known as Mahananda Corridor, runs from north to south direction and joins Maldah with the plains of Jalpaiguri and Koch Bihar. Mahananda River divides the district of Maldah into eastern and western parts. The eastern part known as 'Barind' or 'Barendrabhumi' consists of undulating plain and is made of old alluvium which is a part of the Ganges delta. Western part on the other hand is made of new alluvium and in this section River Kalindi meets with the Mahananda River. The part of Maldah lying to the north of river Kalindri is known as tal. This is lowland and covered with swamps and beels (small water bodies) whereas the area in south of the Kalindi is a very fertile land and is known as diara. The western plain has been largely built up by the silt brought by the western tributaries of the

Bhagirathi River. Southern plains lie between the Bhagirathi (Hoogly) and the Bangladesh border. These areas are characterized by shallow lakes, marshes, river courses. Plain areas are very fertile in the view of agricultural purposes. Most of the food crops are grown in these plains.

4. 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. This region extends to the Siliguri division of Darjiling district, north and eastern part of Jalpaiguri and northern part of Dinajpur. These areas are demarcated by 100 metre contour line from southern plain. The slope of the land is gentle, from north to south. The highest points range about 400-600 metre or more. The Terai zone is made of alternate layers of clay and sand, with a high water level that creates many springs and wetlands. The entire region is made 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.

5. Rarh Region

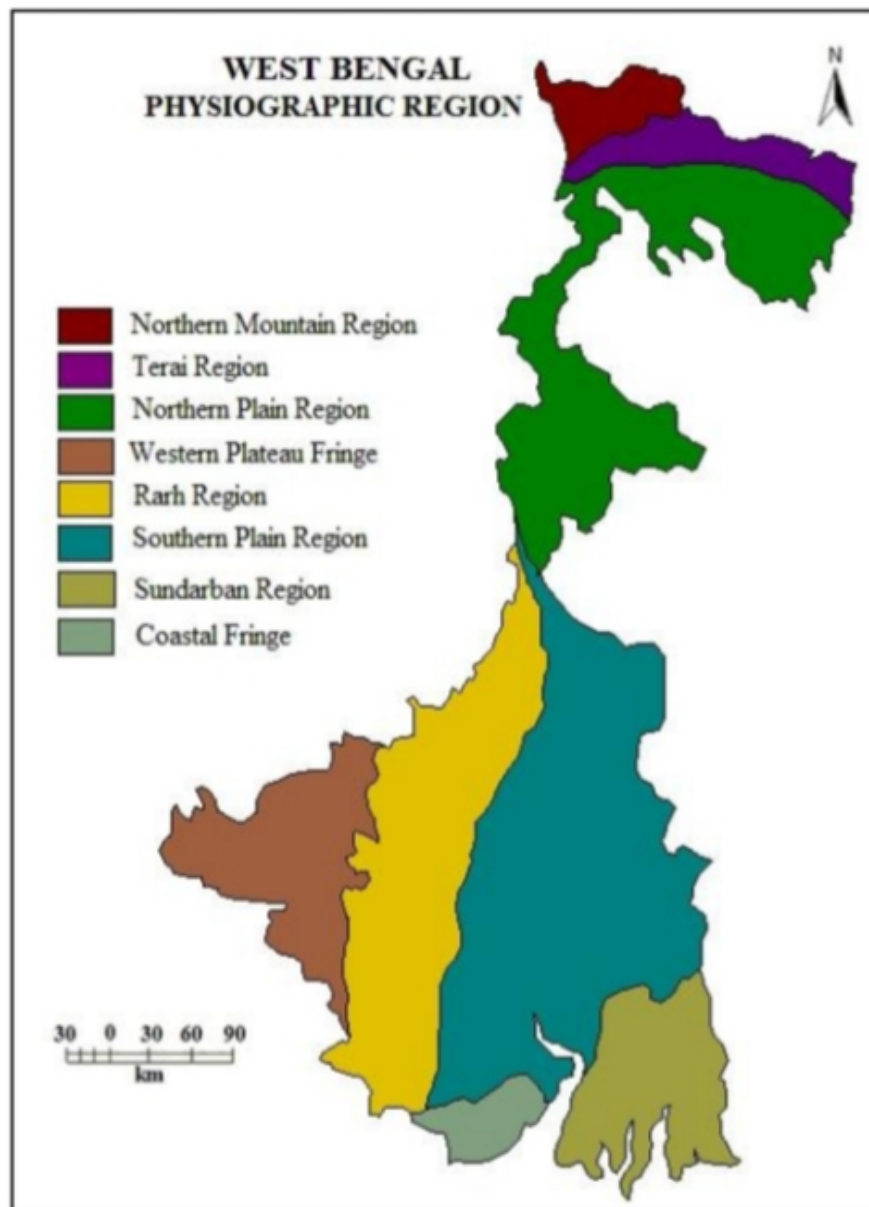
This region intervenes between southern Ganges delta and western plateau region. Rarh region extends from north to south between 50 metre contour in east and 100 metre contour in the west. This region constitutes the districts of Birbhum, Bardhaman, Bankura, Murshidabad and Medinipur. This region is believed to be created from the soil from the Deccan plateau. This region is dominated by laterite soil.

6. Sundarban Delta

The Sundarbans delta is the largest mangrove forest in the world. 'Sundari' trees are found in abundance in this region and hence known as 'Sundarban'. It consists of the Hoogly river estuary and newly created of the Ganga delta characterized by tidal creeks, mud flats and newly formed islands. Mangrove Forest is listed in the UNESCO world heritage list separately as the Sundarbans and Sundarbans National Park respectively. 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 metre above sea level. This area has been created by deposition of silt by its numerous rivers namely, Hoogly, Matla, Jamira, Gosaba, Saptamukhi, Haribhanga river and their tributaries. The formation of the delta is an ongoing process and new bars, islands are being created along the rivers and at the river mouth. The most famous among these is the Royal Bengal Tiger, but numerous species of birds, spotted deer, crocodiles and snakes also inhabit it. It is estimated that there are now 400 Bengal tigers and about 30,000 spotted deer in the area.

7. Coastal Fringe

Coastal plain region is on the extreme south of the state. Part of the district of Purba Medinipur along the Bay of Bengal constitutes the coastal fringe. The topography in this strip land is related to the sea. The coastal line is shaped almost as smooth curve broken sometimes only by the mouth of small streams. The beach at Digha in this region is a fast developing sea resort and becoming an important tourist spot. This emergent coastal plain is made up of sand and mud deposited by rivers as well as wind. Parallel to the coast are colonies of sand dunes and marshy areas.



Source: NATMO Maps, DST, 2010.

Fig 3.2