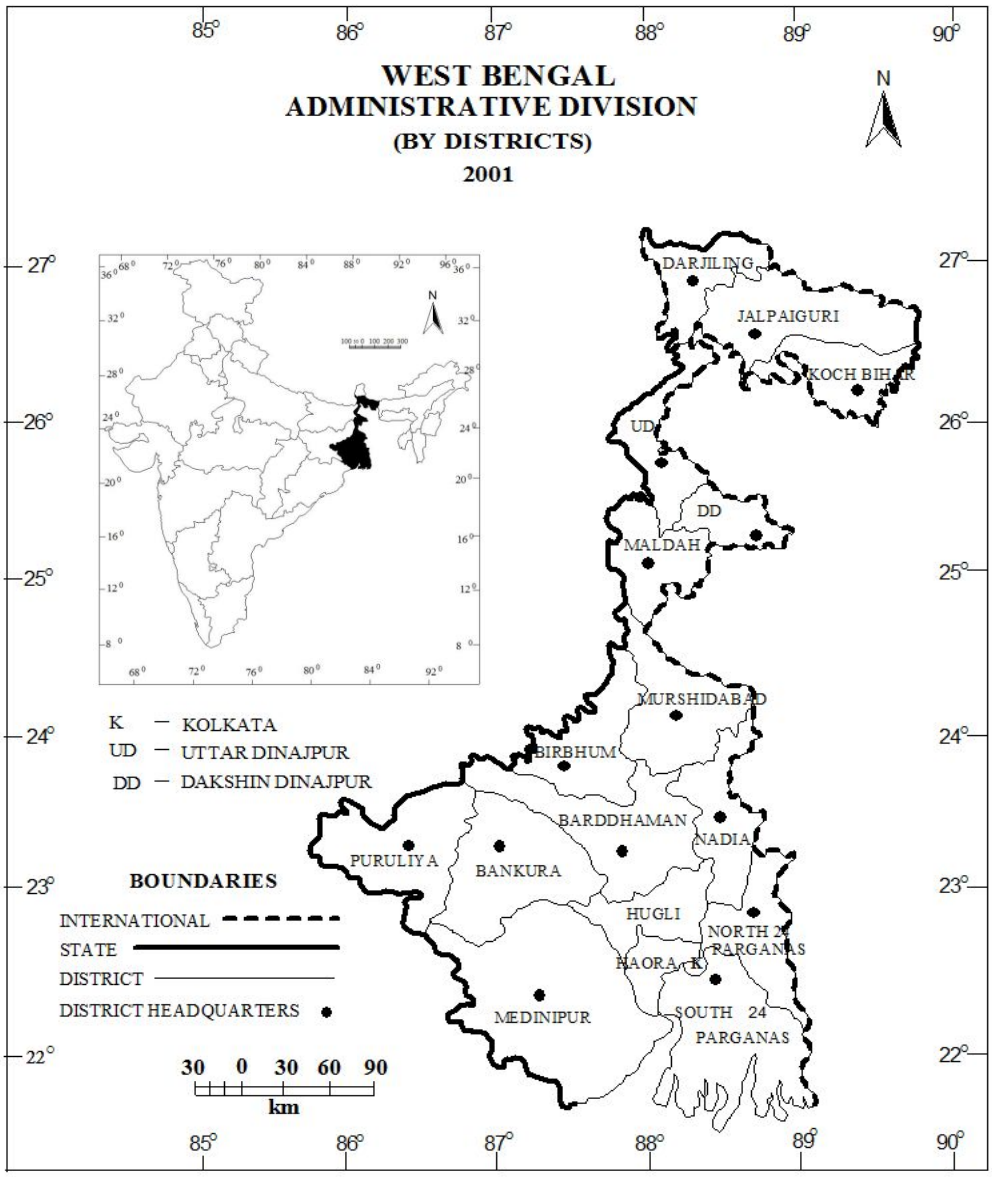
WEST BENGAL: GENERAL PROFILE

West Bengal, constituent republic state of India is situated in the eastern part of the country between 21°20' and 27°32' N latitude and 85°50'E and 89°52' E longitude. It came into existence when India was divided on the eve of independence in 1947. Being in the western part of the undivided Bengal province, it has been given the name 'West Bengal'. Kolkata is the capital of West Bengal. In respect of area, West Bengal (WB) is 13th among the Indian states. It covers an area around 88,752 sq. km. (Table 3.1) which is 2.7 per cent of the total India's land area. Tropic of Cancer passes through middle part of the state (Nadia, Barddhaman, Puruliya and Bankura districts). There were fourteen districts in West Bengal including Calcutta (Kolkata) at the time of partition and covering the area of about 8,785 sq. kms. Afterwards, the state has grown its bulk by accession of nearby territories in three stages. First on the 1st January 1950 the princely state of Koch Bihar was emerged with West Bengal to be constituted as an additional district. Second on the 2nd October 1954 Chandanagore, formerly a French possession was added to the state of West Bengal as a part of Hugli district and the last on 1st November 1956, when on the recommendation of the 'State Recognition Committee', the Puruliya sub-division Manbhum district and a part of Kishanganj sub-division of Purnea district (both previously belong to Bihar) were incorporated within the state, and the added areas formed the new district of West Dinajpur. Later, on 1st March 1986, the district of Twenty Four Parganas divided into North and South Twenty Four Parganas. Further on 1st April 1992, the district of West Dinajpur was splited into Uttar and Dakshin Dinajpur district. In 2002 on 1st January Medinipur district has been divided into two districts i.e. East Medinipur and West Medinipur and the number of districts in the state has been reached to nineteen. West Bengal consists of 40, 782 inhabited villages spread over 341 blocks in the state (2011, Census).

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. The states unique geographic location makes it truly 'the gateway of India in the east' because of direct access from the sea and networks of national international air links. The special strategic importance of this state comes from the fact that the narrow neck or 'Naral Bari Neck' connecting its own northern most region with the main body of West Bengal provides the only corridor between to north eastern zone comprising states Assam, Nagaland, Manipur, Tripura and Meghalaya on one hand and rest of the country on the other.



Source: Census of India, 2001.

Fig 3.1

Table 3.1: Administrative Divisions of West Bengal, 2001

Districts/Division	Population	Geographical Area in sq. km	Man Land Ratio	Villages	Gram Panchayat	Panchayat Samity	Block	Towns	Municipalities M. Corp.	Police Station	Sub Division
Darjiling	16,09,172	3149	0.2	708	134	4	12	9	4+(1)*	16	4
Jalpaiguri	34,01,173	6227	0.18	756	146	13	13	16	4	17	3
Koch Bihar	24,79,155	3387	0.14	1202	128	12	12	10	6	11	5
Uttar Dinajpur	24,41,794	2219	0.13	1504	98	9	9	6	4	9	2
Dakshin Dinajpur	15,03,178	2219	0.14	1638	65	8	8	2	2	8	2
Malda	32,90,468	3733	0.11	1798	146	15	15	5	2	11	2
Jalpaiguri Div.	**1,47,24,940**	**21855**	**0.15**	**7606**	**717**	**61**	**69**	**48**	**22+(1)***	**72**	**18**
Birbhum	30,15,422	4545	0.15	2473	167	19	19	6	6	18	3
Burdwan	68,95,514	7024	0.10	2529	277	31	31	66	9+(2)	32	6
Bankura	31,92,695	6882	0.22	3830	190	22	22	5	3	21	3
Purulia	25,36,516	6259	0.25	2683	170	20	20	12	3	20	3
Hooghly	50,41,976	3149	0.06	1915	210	18	18	40	11+(1)*	22	4
Medinipur	96,10,788	14081	0.15	11736	513	54	54	21	13	48	8
Barddhaman Div.	**3,02,92,911**	**41940**	**0.14**	**25166**	**1527**	**164**	**164**	**150**	**45+(3)***	**161**	**27**
Murshidabad	58,66,569	5324	0.09	2210	254	26	26	29	7	26	5
Nadia	46,04,827	3927	0.09	1346	187	17	17	25	10	19	4
North 24 Paraganas	89,34,286	4094	0.05	1581	200	22	22	48	27	35	5
South 24 Paraganas	69,06,689	9960	0.14	2139	312	29	29	21	7	36	5
Howrah	42,73,099	1467	0.03	734	157	14	14	53	2+(1)*	19	2
Kolkata	45,72,876	185	0.00	-	-	-		1	0+(1)*	42	-
Presidency Div.	**35,15,83,346**	**24957**	**0.01**	**8010**	**1110**	**108**	**108**	**177**	**53+(2)***	**177**	**21**
West Bengal	**8,01,76,197**	**88752**	**0.11**	**40782**	**3354**	**333**	**341**	**375**	**120+(6)***	**452**	**66**

Source: Statistical Abstract, 2002-03. **Note:** M. Corp. -*Municipalities Corporation.

Table 3.2: Administrative Divisions of West Bengal, 2011

Districts/Division	Population	Geographical Area in sq. km	Man Land Ratio	Villages	Gram Panchayat	Panchayat Samity	Block	Census Towns	Municipalities M. Corp.	Police Station	Sub Division
Darjiling	18,46,823	3,149	0.17	7084	22	4	12	24	4+(1)*	28	4
Jalpaiguri	38,72,846	6,227	0.16	756	146	13	13	35	4	16	3
Koch Bihar	28,19,086	3,387	0.12	1202	128	12	12	12	6	11	5
Uttar Dinajpur	30,07,134	3,140	0.1	1504	98	9	9	5	4	9	2
Dakshin Dinajpur	16,76,276	2,219	0.13	1638	75	8	8	5	2	8	2
Maldah	39,88,845	3,733	0.09	1798	146	15	15	27	2	11	2
Jalpaiguri Div.	**1,72,11,010**	**21855**	**0.13**	**7606**	**717**	**50**	**69**	**108**	**22+(1)***	**83**	**18**
Birbhum	35,02,404	4,545	0.13	2473	167	19	19	14	6	18	3
Barddhaman	77,17,563	7,024	0.09	2529	277	31	31	88	9+(2)*	32	6
Bankura	35,96,674	6,882	0.19	3830	190	22	22	9	3	23	3
Puruliya	29,30,115	6259	0.21	2683	170	20	20	25	3	21	3
Hugly	55,19,145	3149	0.06	1915	207	18	18	64	12+(1)*	23	4
Purba Medinipur	50,95,875	4,736	0.09	3035	223	25	25	20	5	23	4
Paschim Medinipur	59,13,457	9,345	0.16	8701	290	29	29	11	8	39	4
Barddhaman Div.	**3,42,75,233**	**41940**	**0.12**	**25166**	**1353**	**164**	**164**	**231**	**46+(3)***	**179**	**27**
Murshidabad	71,03,807	5,324	0.07	2210	254	26	26	65	7	27	5
Nadia	51,67,600	3927	0.08	1346	187	17	17	55	10	21	4
North 24 Parganas	1,00,09,781	4094	0.04	1581	200	22	22	78	27	40	5
South 24 Paraganas	81,61,961	9960	0.12	2139	312	29	29	111	7	33	5
Howrah	48,50,029	1467	0.03	734	157	14	14	135	2+(1)*	36	2
Kolkata	44,96,694	185	0	-	-	-	-	1	0+(1)*	78	-
Presidency Div.	**3,97,89,872**	**24957**	**0.06**	**8010**	**1110**	**108**	**108**	**445**	**53+(2)***	**235**	**21**
West Bengal	**9,13,47,736**	**88752**	**0.1**	**40782**	**3351**	**333**	**341**	**784**	**121+(6)***	**497**	**66**

Source: Statistical Abstract, 2002-03. **Note:** M. Corp. - * Municipalities Corporation.

Physiographic Divisions

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 feature, 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 Tarai 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 fire 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 foods crops are grown in these plain.

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, Barddhaman, 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.

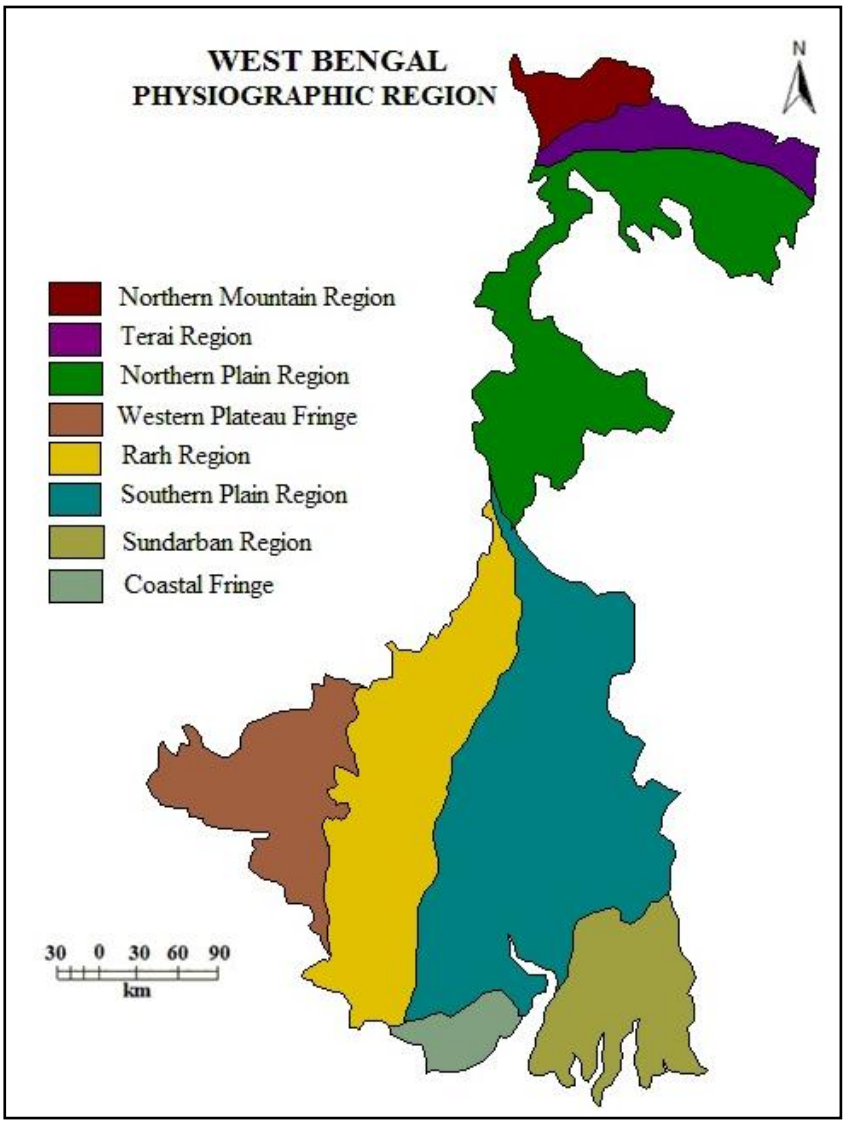
6. Sundarban Delta

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

Climate

Tropic of Cancer divides the state of West Bengal into two parts. The area lying north of Tropic of Cancer known as North Temperature Zone and southern portion lies within the Torried or Equatorial Zone. Climate of West Bengal is generally tropical, hot, humid, monsoon type (except in northern mountaneous region of Darjiling and Jalpaiguri district). The temperature of the Himalayan district varies from well below freezing point in winter to over 80° F (26°C) in summer. Presence of the Bay of Bengal, river network system, canals, tank etc does not allow the extreme climatic conditions of the Torried zone. Important feature of the state is the periodic wind known as the monsoon that blows across it. The Indian Meteorological Department has recognized four types of climates in West Bengal which are

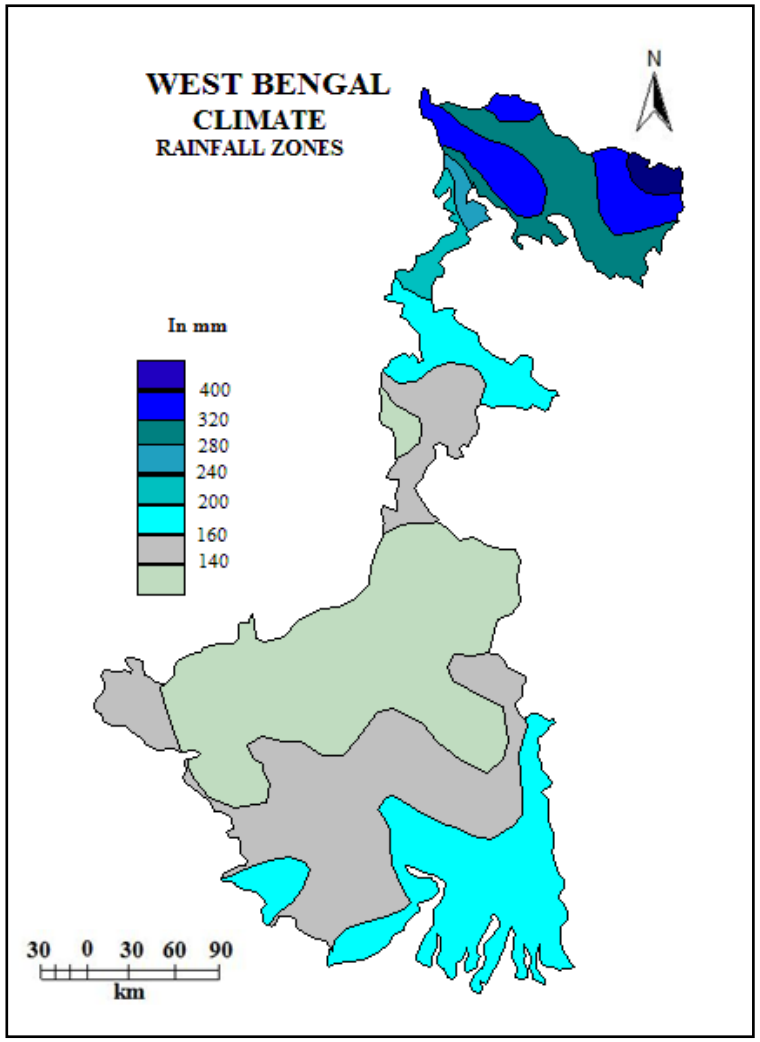
1. The hot season
2. The monsoon season
3. The retreat monsoon
4. The cold season.

1. The Hot Season

This season covers the period between 1st March and 10th June. This season is usually dry and sunny; temperature starts increasing from the month of March and during the day it may raise upto 38^{0}C. The highest temperature in each year is usually recorded about 40°C in the first or the second week of April and highest temperature is increasing year by year (may be due to Global warming!). Sometimes the plateau region records the highest temperature of the state as high as 45^{0}C. Asansol is the hottest place of West Bengal. The heat is slightly lesser in northern plain. In Bengal the thunder storm (i.e. Norwester) are locally known as '*Kal Baisakhi'* that occurs in April and May.

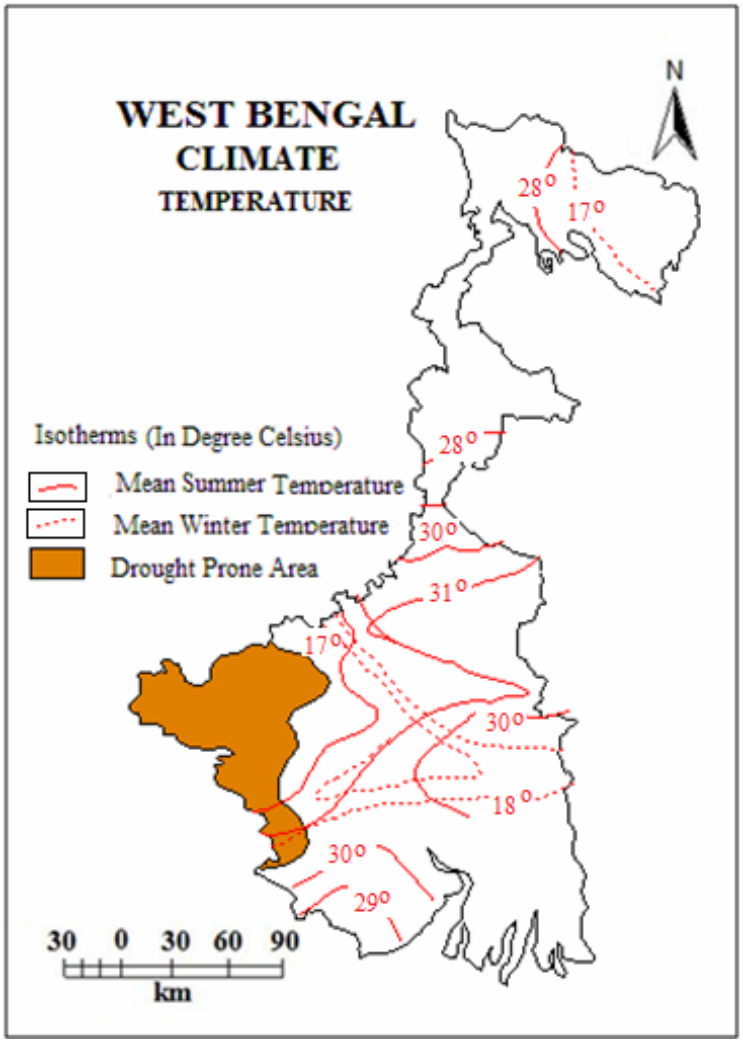
2. The Monsoon Season

Around 15th June, the whole of West Bengal comes under the influence of South-West Monsoon which carries heavy moisture from Bay of Bengal resulting heavy rains all over the state. The Monsoon always brings joyous moments for the farmers in the state as their agricultural crops, foods and prosperity depend solely on it. The average rainfall in the hill state is about 175 cm, the plateau fringe has a rainfall less than 140 cm. Bankura is the driest district having a rainfall of 118 cm. Late monsoon sometimes results destructive storms called *'Ashwine Jhor'*. The fig. 3.3 shows the



Source: NATMO Maps, DST, 2010.

Fig 3.3



Source: NATMO Maps, DST, 2010

Fig 3.4

distribution of rainfall. The average rainfall in the state is about 70 inches (175 cm) of which over 125 cm precipitate during June to September usually called monsoon month. The Himalayan region experiences the highest rainfall, ranging from 250 cm to 500 cm, while plain district receives on an average 125 cm.

3. The Retreat Monsoon Season

The monsoon starts retreating from northern India during the last week of September and by the middle of October, After the September and the intensity of the low pressure over the north-western part of India decreases. As a result the south monsoon winds start moving back towards sea. This is called retreating of the monsoon winds. Cool and dry winds blow out from the land to sea during this time. Depressions and cyclones starts from this time in the southern part of the Bay of Bengal. The retreat of the south-west monsoon over West Bengal is completed by the end of November.

4. The Cold Season

From December to February West Bengal is under the influence of the north-east trade winds. There is no rainfall in this season because wind is offshore and has no moisture. A cold and dry northern wind blows in the winter, substantially lowering the humidity level. The climate is cool and sunny; temperature ranging between 17°c to 21°C and increasing southward. The minimum temperature at night always remains below 15^0C. Morning fog is very frequent even over the plains. Average daily temperature in the hill areas is about 5.2° C. Darjiling receives moderate snowfall in winter months.

Natural Vegetation

Natural vegetation covers only 16% of total area of West Bengal. Much of it has been disappeared due to heavy density of population and clearing forest land for cultivation to feed this population. Few districts have only scattered forest. It can be divided into six classes according to their distribution, growth and expansion (Fig 3.5). They are as follows:

1. Himalayan Moist Temperate Vegetation
2. Tropical Moist Deciduous Vegetation of Tarai
3. Tropical Moist Deciduous Vegetation of Plain
4. Dry Deciduous Vegetation of Upland
5. Tropical Semi Evergreen Vegetation of Coastal Areas

6. Mangrove Swamp Vegetation of Sundarban Areas

1. Himalayan Moist Temperate Vegetation

These forests are related to higher altitude. In mountain areas different types of trees and plants grow at different heights. Temperate evergreen forests consisting of trees such as Oak, Poplars and Maples are seen between the height of 900- 2500 metres. Between 2500 and 3500 metres coniferous trees such as Pine, Deodar, and Fir are found. Above this altitude Birches and Rhododendrons are grown.

2. Tropical Moist Deciduous Vegetation of Tarai and Plain

At the foot of the Himalaya, tropical mixed evergreen and deciduous trees are found. Deciduous trees which include for example Sal, Teak and Simul, Sisham trees shed their leaves once a year. But in between 1000 and 1500 metres, sub-tropical forests such as Celdera, Micherin and Bamboos are found. A broad belt of tree forest stretches along the entire length of the northern district. Duars region are found with low levels of tea gardens.

3. Tropical Moist Deciduous Vegetation of Plain

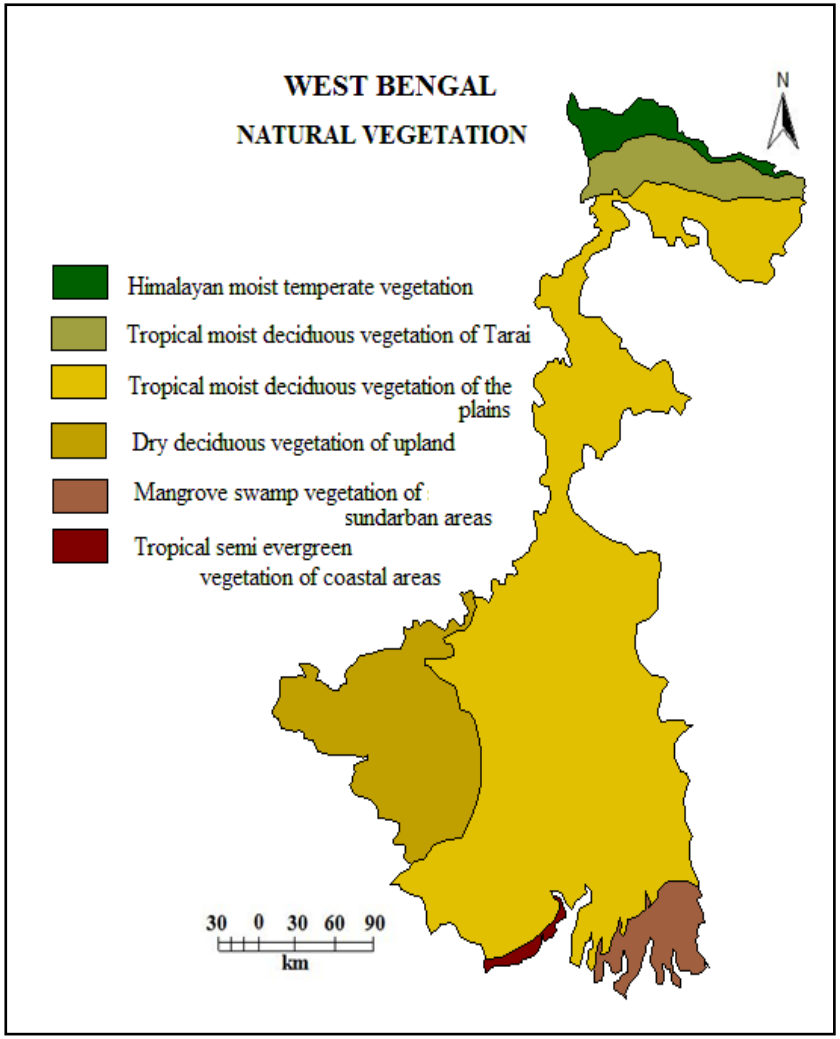
Tropical moist deciduous vegetation of plain extends from south of the tarai deciduous region to almost entire West Bengal except southern coastal portion. Such forests have a mixture of evergreen and moist deciduous trees. The under growing climbers provide an evergreen character to these forests. Main species are white Cedar, Hollock and Kail.

4. Dry Deciduous Vegetation of Upland

These forests are found in the western parts of West Bengal covering the districts of Puruliya, Bankura, Barddhaman, Birbhum and Medinipur, scattered and isolated patches of Howrah and Hugli districts. The important trees of these forests are Sal, Simal, Haldu, Bamboos, Mahogani, Mahua, Palash etc. These trees shed their leaves in the dry winter. High temperature, dry climate and poor lateritic soil in this region is not favorable for the growth of trees. At present much of the land is used for mango orchards and mulberry cultivation.

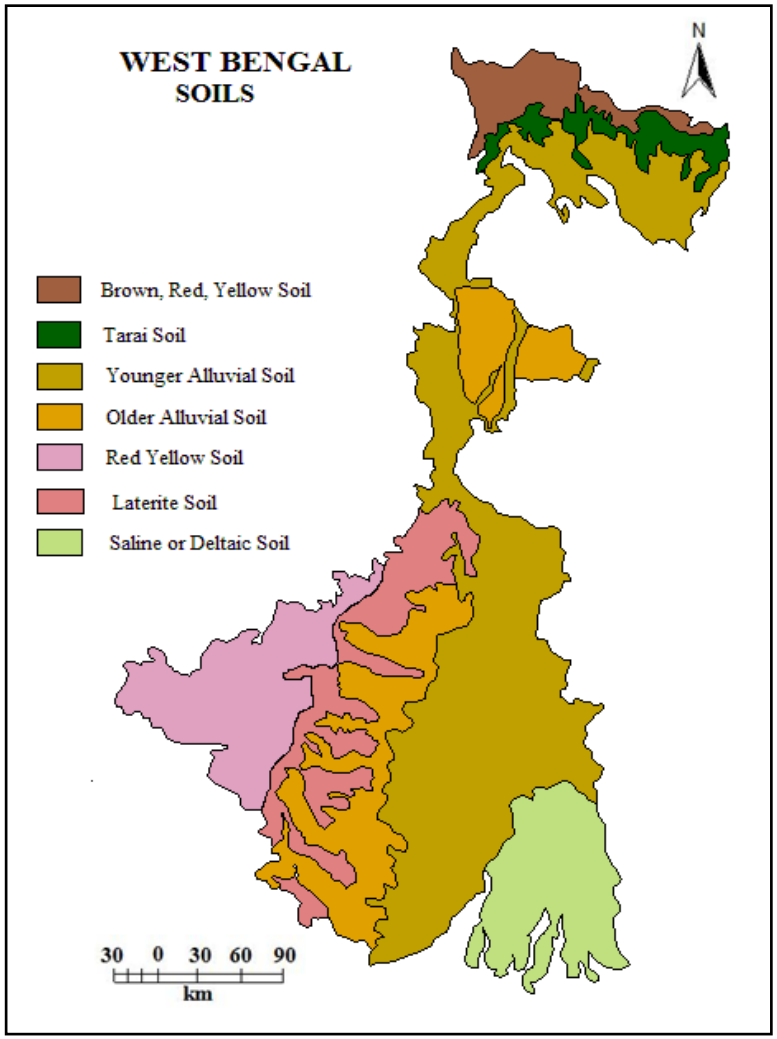
5. Tropical Semi Evergreen Vegetation of Coastal Areas

Southern coastal area of Medinipur district is under the vegetation cover of tropical semi evergreen vegetation. Tropical semi evergreen vegetation includes typical canopy broad leaf trees of both category of evergreen along with deciduous. The species diversity is high but many of the typical evergreen species are absent.



Source: NATMO Maps, DST, 2010.

Fig 3.5



Source: NATMO Maps, DST, Kolkata, 2010.

Fig 3.6

6. Mangrove Swamp Vegetation of Sundarban Areas

These forests covering the Sundarban Delta are the most extensive forest land of West Bengal. The forest is situated at the mouth of the Ganga river in southern part of the South 24 Parganas districts. The name 'Sundarban' comes from the fact that these forests mostly contain one type of mangrove trees called ‘Sundari’. Mangrove vegetation is influenced by the salty sea water due to rise and fall of the tide of Bay of Bengal. Mangrove trees have breathing roots which are usually very large to stand in deep mud. The most common vegetation is Keya or Kewra bushes which grow in extensive clumps (Singh, 1971).

Soils

Soil is one of the most precious resources and influencing factors on agriculture and forestry. Soils are economically important because different types of soils of varying nature produce different varieties and amounts of crop leading to economic disparities. In 1965, according to soil survey done by the Department of Agriculture categorized the soils into six groups (Fig 3.6) on the basis of observation and analysis of soil profiles.

They are as follows:

1. The laterite soils
2. The Red soils
3. The Alluvial Soils
   a) Younger Alluvial Soil
   b) Older Alluvial Soil
4. The Tarai Soils
5. The Saline Soils
6. The Red and Gravelly Soils

1. The Laterite Soils

These soils are acidic and poor in organic matter. The laterite soils are found the plateau region in the major parts of the districts of Birbhum, Barddhaman, Bankura and Medinipur.

2. The Red Soils

These red soils are transported from Chhotanagpur plateaus by many rivers to form western districts such as Birbhum, Bankura West Dinajpur and Medinipur. These are residual soils and acidic in nature (pH 5.5-6.6); deficient in organic matter and are

poorly irrigated. The topsoils are poor in iron due to leaching and accumulation takes place in deep subsoils. The transported laterites are deposited on the eastern flanks of the lateritic stretch are known as the red soil which are found in the eastern margin of the Rarh plain and the Barind tract of Maldah and West Dinajpur.

3. The Alluvial Soils

The alluvial soil tracts are covering 28, 921 sq km area and are agriculturally important. They occur in the districts of Murshidabad, Birbhum, Barddhaman, Puruliya, Hugli and Medinipur. Alluvial soils are divided into two families depending on the nature of parent materials.

a) Younger Alluvial Soil (Ganga Alluvium): New alluvium formed by Ganga river covers parts of the north Bengal plains and whole of the remaining West Bengal delta excluding the coastal strip of 24 Parganas and Medinipur. These are the most fertile lands in West Bengal known as '*Khadar'*. The Ganga alluvium is rich in plant nutrients and organic matter, and is alkaline in reaction.

b) Older Alluvial Soil (Vindhya Alluvium): The old alluvium soils found along the outer edge of the plateau fringe. This transported soil has lost its original fertility by leaching.

4. The Tarai Soil

Tarai soils are derived from mountain regions of the Himalayas by the hilly rivers i.e. Tista, Mahananda, Torsa, Jaldaka and their numerous tributaries which bring material from heights of above 10,000 ft and deposit it about 200 to 300 ft above sea level. The deposits are mostly sandy and raw humus type and are deep black to gray in colour. They occupy a good amount of paddy area of Jalpaiguri, Darjiling and Koch Bihar districts.

5. The Saline Soil Mangrove or Coastal Soil

These types of Soils have been formed by the deposits brought by the tidal current. It is found in 24 Parganas and Medinipur districts. The excess of salt and clay makes the soils unsuitable for the cultivation of rice, vegetables and horticulture.

6. The Red and Gravelly Soil

These thin soils containing large amount of coarse sands are graver, rich in iron but deficient in other minerals and so are less favorable for cultivation. These red soils are found in Puruliya and western parts of Birbhum, Bankura and Asansol.

The Drainage System

West Bengal is known as land of rivers. A number of rivers originate from the glacial of the Himalaya and flow through this state. The infrastructure of the economic condition of this state with many rivers and the survival of its people directly depend on the control of the rivers (Mukherjee, 1956). The famous Ganga delta was built up by the muddy waters brought by the Ganga, Brahmaputra and Meghna rivers. The drainage system of West Bengal can be divided into four systems:

1. The Ganga System
2. The Bhagirathi- Hoogly System
3. The North –Bengal Rivers
4. The Western Bengal Rivers

1. The Ganga System

The Ganges with its down distributaries and tributaries form the central river drainage system of lower West Bengal. The Ganga runs from north-west to south-east across the state and divides the state into north and south Bengal.

2. The Bhagirathi Hoogly

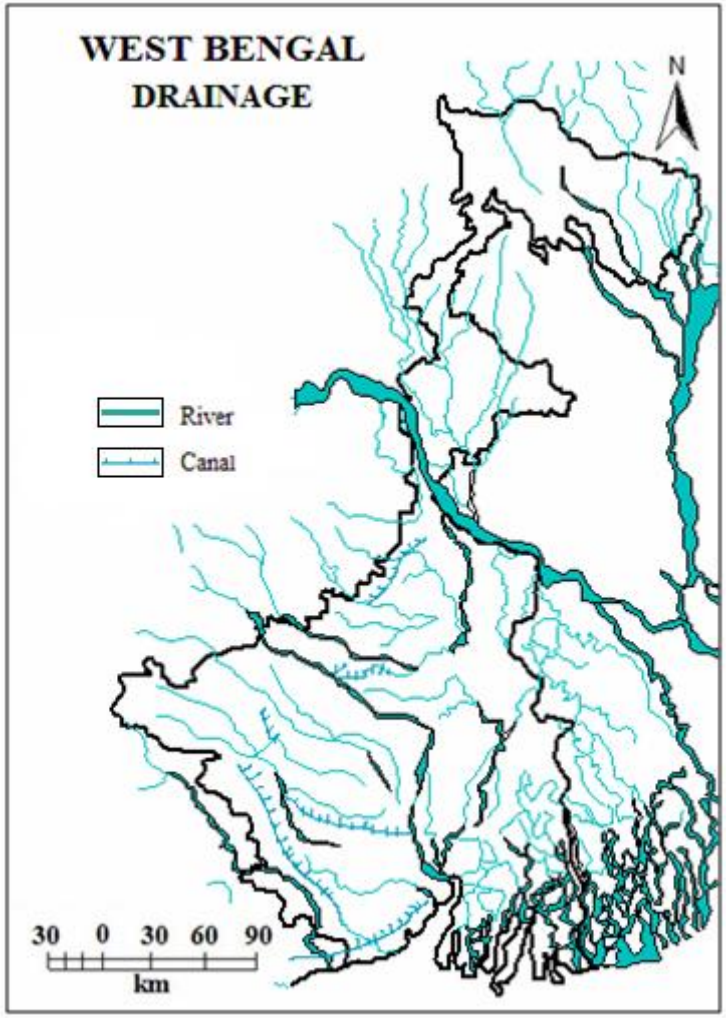
The Ganga is divided into two branches near Farakka. The main branch after entering into Bangladesh takes the name Padma. The other branch continues to south through lower part of West Bengal as Bhagirathi and discharges the water into the Bay of Bengal. Other branches including Mayurakshi, Damodar and Subranarekha of Bhagirathi- Hoogly system are draining the Rarh plain.

3. The North Bengal Rivers

The North Bengal Rivers like Teesta, Torsa, Mahananda, Jal Dhaka and Raidak etc originate from the Himalayan glacier belt. These rivers are more ferocious on the time of monsoon and these torrential and swift flowing rivers bring the huge quantities of debris including boulders from the upper catchments up in the north.

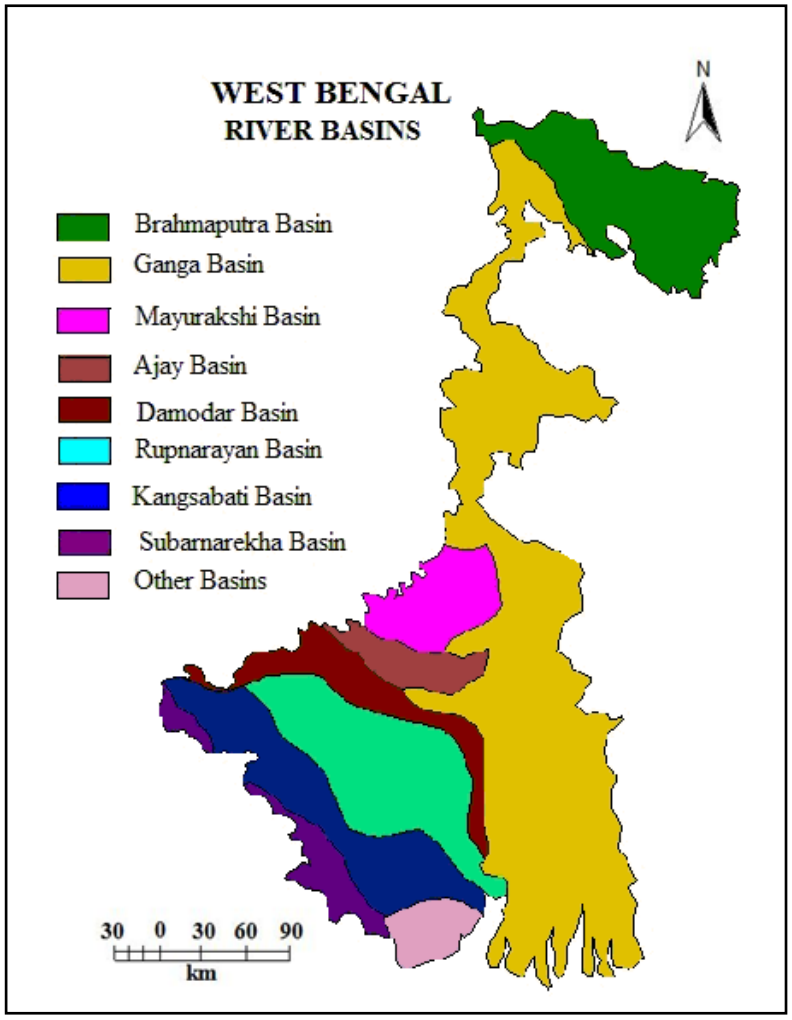
4. The Western Bengal Rivers

The Bhagirathi River flows southward and is joined by a number of tributaries e.g., Ajoy, Mayurakshi, Damodar, Kossye and Rupnarain etc. All these rivers are rain fed that rise either in the hills of Shantal Paraganas or Chotanagpur plateau in Bihar and flow down to meet the Hoogley as its tributaries. Damodar river is known as ‘Sorrow of Bengal’ because of its rapid devastating flood and damaging lots of crop and cattles in the district of Birbhum, Barddhaman, Murshidabad and Nadia.



Source: NATMO Maps, DST, 2010.

Fig 3.7



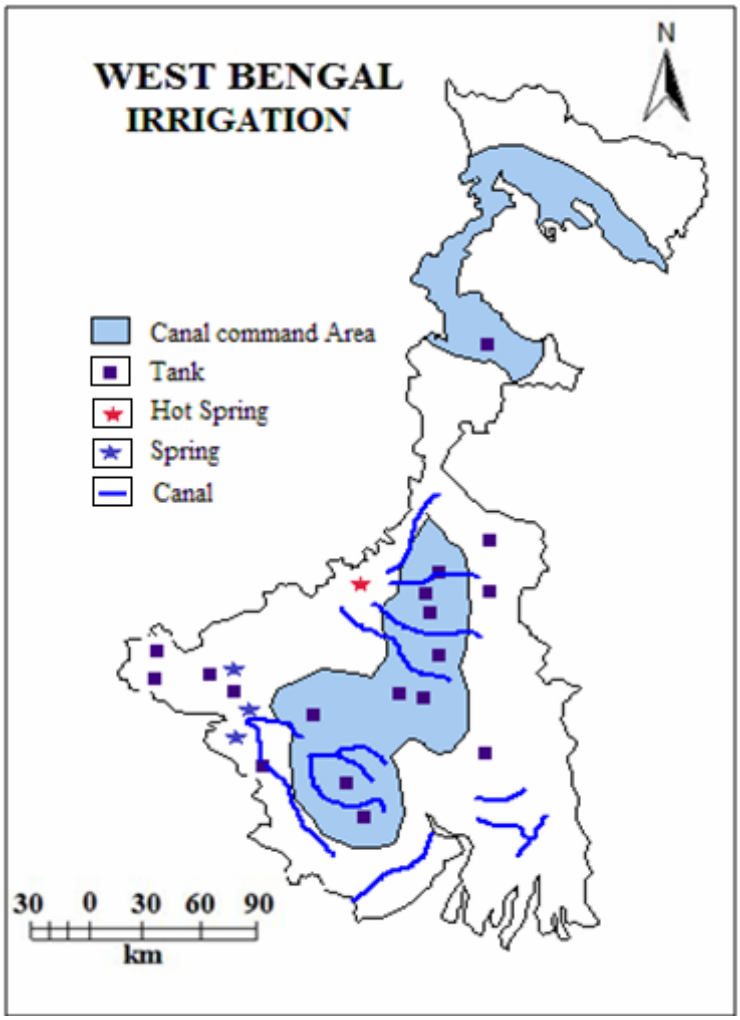
Source: NATMO Maps, DST, 2010

Fig 3.8

ECONOMIC PROFILE

Agriculture

Agriculture is the leading occupation of the people of West Bengal; about 75 per cent of the total working population is still engaged in agriculture. However, about 63 per cent of the total geographical area of the state is occupied by agriculture. The flat topography of the land and high fertility soils are favorable for agriculture. From the second half of the 1960's the technological period of the Green Revolution, high yielding variety programme with the package of input: chemical fertilizer, pesticides and pump set etc bring a great change of crop production in West Bengal. There has been production of about 13389 thousand tonnes for Rice, 874 thousand tonnes for wheat, 370 thousand tones for cereals as recorded in 2010-11. Pisiculture is also well developed here and West Bengal is one of the major fish producers and consumers in India.



Source: NATMO Maps, DST, 2010.

Fig 3.9

Irrigation

For successful crop cultivation an adequate supply of water is essential. The process of supplying water to crops by artificial means such as canals, tube wells, tanks etc. is known as irrigation. In greater part of West Bengal, agriculture is rain-fed. Uncertain rainfall and unevenly distributed water may reduce cropping intensity and productivity per unit area. Irrigation helps in bringing the new area under cultivation on the one hand, and increases the double and multiple cropping on the other. The main sources of irrigation used in the state are canals and wells area under government canal irrigation is about 11763 thousand hectare (2004-06) (Statistical Abstract of W.B., 2004) (Fig 3.9). Mayurakshi Reservoir Project was taken up for execution in 1951. This Project has been completed in all respects in the year 1985. The irrigation potential created through completion of this project comes to 2,50,860 hectare in the districts of Birbhum, Murshidabad and Burdwan. This Project is adjudged to be one of the best performing irrigation projects in India. The project was planned originally for giving water to Kharif and Boro seasons.

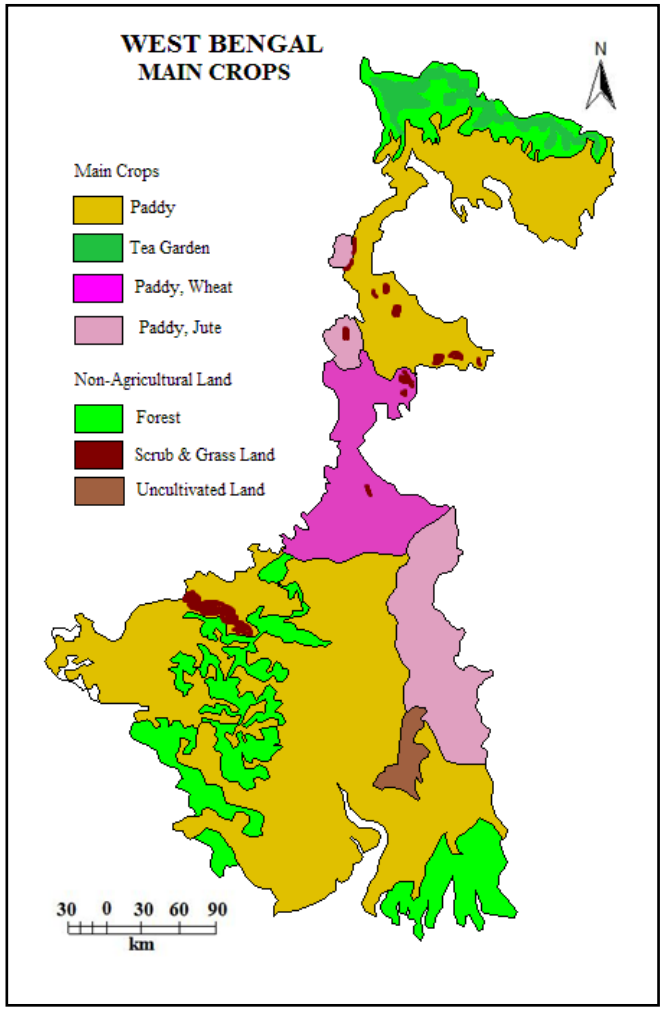
Land Use, Land Utilization, Cropping Pattern and Yields

Lands are usually covered by rich mosaic of forests, barren land, streams, settlements, pastures, cultivated areas, fallow land etc. The land use pattern in a region is of great significance because of its impact on social and economic disparities. Lands under net sown area is 4991 thousand hectare, areas not available for cultivation is 1840 thousand hectare, forest is 1174 thousand hectare, current fallow 574 thousand hectare, other cultivable lands excluding current fallow is 105 thousand hectare (Economic Review, 2011-12).

The agriculture in West Bengal is diversified and cropping pattern changes from place to place. Rice such as aman, aus and boro is the main food crop here. It is grown extensively in all districts mainly in the southern parts of West Bengal. Other crops like jute, wheat, rabi pulses, maize and potatoes are also well produced. Jute cultivation occupies significant proportion but due to several problems jute cropped area is being decreasing year after year.

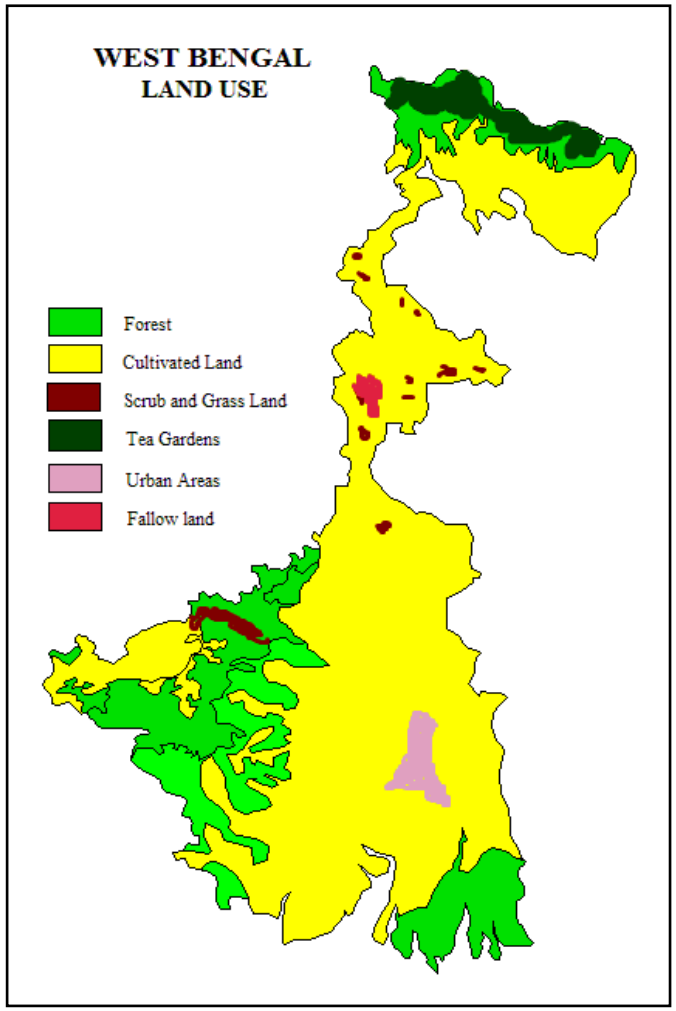
Power and Mineral Resources

Mineral is considered as the basis of industrial development of a country. West Bengal has large amount of mineral deposits. Whole area is divided into two parts from the consideration of mineral resources. Northern part includes mineral deposits



Source: NATMO Maps, DST, 2010.

Fig 3.10



Source: NATMO Maps, DST, 2010.

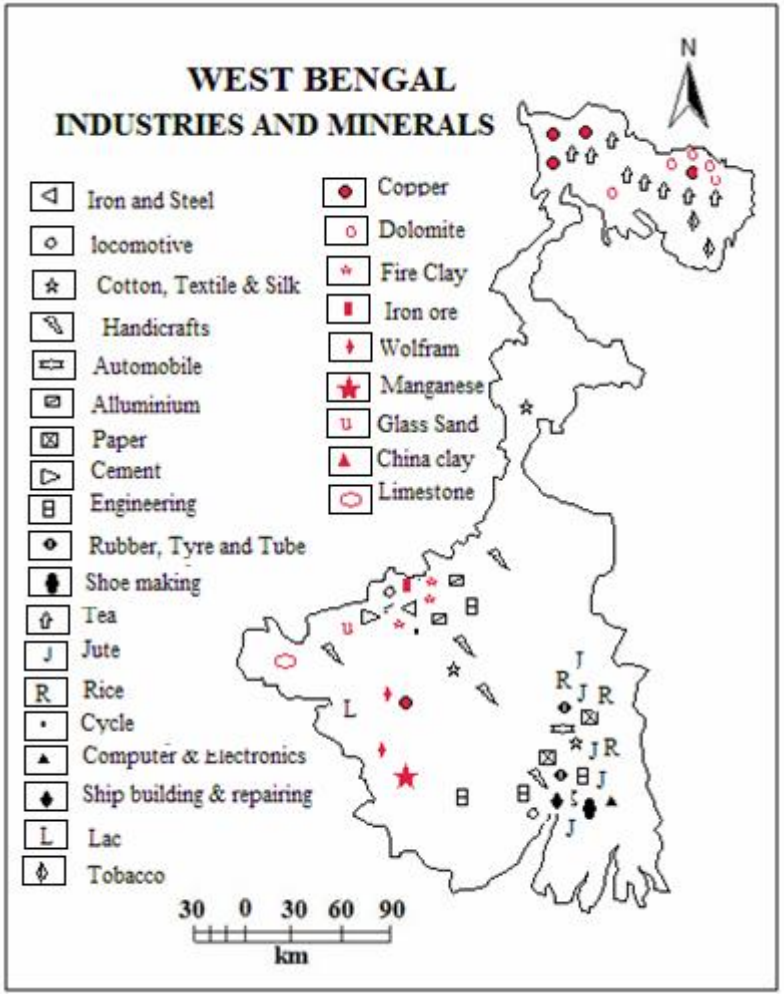
Fig 3.11

with older formations of Duars, Darjiling, Jalpaiguri and western Duars. The western part i.e. Rarh area consists of the district of Puruliya, Bankura, Barddhaman, Birbhum and Medinipur in the south western part of West Bengal (Fig 3.12). Coal and fire clay compose 99 % of the mineral wealth of the state. Raniganj coalfield in this region is of the national importance. Fire clay deposits in the Breaker field are of very good quality. The total deposits of about 4.06 million metric tons have been estimated within a depth of 6.096 metres. Other minerals found in West Bengal are china clay, iron, lime stone, manganese, dolomite, sandstone, moulding sands, silica, copper, wolfram and arsenic. Small reserves of china clay are found in Birbhum, Bankura and Medinipur. Iron ore is found in Raniganj associated with the coalfields. Lime stone reserves have been found at the Halda in Puruliya as well as in Bankura district. Wolfram deposits have been located at Jhilimi in Bankura districts whereas Manganese ore deposits have been found at the Medinipur district. Dolomites extensively occur in the foot hills of Himalayan region. Good quality of quartz is found in the Bankura districts. Arsenic ore in small quantities is obtained in Darjiling, Sanpathar hill.

It is noted that West Bengal produces mineral worth about 30% of the national mineral production. Hence it can be said that industrial raw material, mineral deposits as well as the infrastructure offer great potential for industrial development in this region. Power supply is one of the important locational ingredients for the process of industrialization. Power electricity and coal mining constitute the most important resource. The Haldia project in Southern Midinipur brings a new developmental era for the people of this region. Kolaghat, Bandel and Tarakeshwar power plant will bring additional changes in the economic condition of this region. Farakka Project is helping the overall growth in North Bengal covering areas like Farakka, Maldah, Raiganj, Islampur, Balurghat etc. Also Asansol, Durgapore industrial belts are very bright.

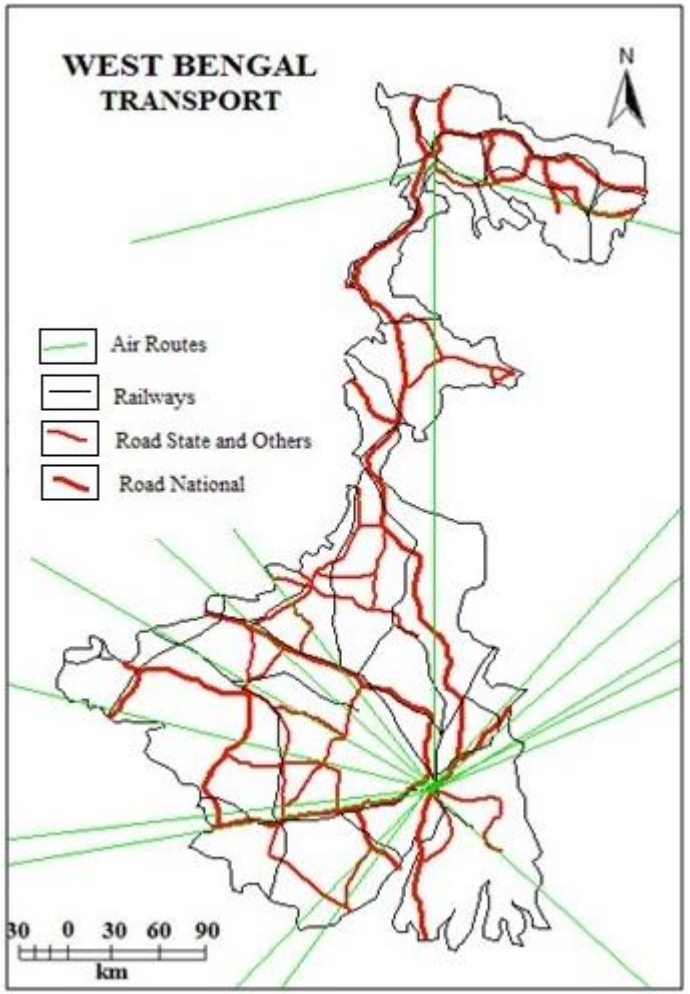
Transport and Communication

For agricultural and industrial development an essential element is transport facility. For overall development a continuous expansion of modern transportation by land, water and air are required. West Bengal has a well developed network of transport and communication (Fig 3.13) with its neighbouring states as well as neighbouring countries through road, rail, air and waterways.



Source: NATMO Maps, DST, 2010.

Fig 3.12



Source: NATMO Maps, DST, 2010.

Fig 3.13

The length of roads as on 31st March 2002 was 91970 km including 1898 km National Highways. The length of roads under state highway is 3533 km, under PWD (Public Works Department) 12565 km and that of the district roads and 42479 km. The total length of the railway routes in the state is about 4492-82 km under eastern and south-eastern railway of which headquarter is in Kolkata. In the hill districts of Darjiling, Koch Bihar and Jalpaiguri, good railway networks are not easy to develop due to many physical constraints. The dry western districts of Puruliya and Bankura also have not well connected with railways. Howrah, Asansol, Sealdah, Bandel, Barddhaman, Kharagpur and New Jalpaiguri are the main junctions. The role played by inland waterways in transportation system is not of great importance as compared to railway and roadways. Major ports of West Bengal are Kolkata and Haldia of international importance and cover a huge hinterland. West Bengal has one international airport in Kolkata and a domestic airport in Bagdogra while many other aerodromes at the local level exist.

Industrial Development

At the time of independence, West Bengal was the most industrially developed state in India. Kolkata was the industrial capital of the country. But now West Bengal loses its glorious position in the industrial economy. Total number of registered factories (agriculture and allied services) is about 13210 in 2004 (Economic Review, 2006-07). The state has a long history of industrial leadership.

West Bengal with its abundance of mineral resources experienced the setting up of industries such as engineering, steel, jute, tea, silk and jewellery. Jute is the most important industry of West Bengal. India's first jute mill was established in West Bengal at Rishra in the districts of Hooghly. There are near about 56 jute mills along both the banks of Hooghly river. At present there are 300 tea gardens in West Bengal. They are situated Darjiling, Jalpaiguri and the Tarai Duars region of the Koch Bihar District. In these gardens there are about 6000 small factories and 367 bought leaf factories. There are two integrated iron and steel factories in West Bengal i.e. Barnpur-Hirapur-Kulti and Durgapur. Durgapur is called 'Rurh'of India. India's first cotton textile industry was established at Fort Gloster near Kolkata. Though raw cotton is not produced in West Bengal, it is imported from Maharashtra and Gujarat and at present there are about 37 cotton textile factories in West Bengal. Srirampur, Konnagar, Sodepur, Belgharia, Howrah, Uluberia etc are important production centres

of cotton textile in West Bengal. India's first successful effort was made in 1870 in Ballyganj near Kolkata. Important paper-producing centres are Titagarh, Kankinara, Naihati, Halishahar, Banshberia, Tribeni, Chakdaha, Raniganj and Asansol.

Largest aluminium factory has been established in J.K. Nagar near Asansol. Leather tanning industry is in Tangra near Kolkata. Besides this, Bata shoe company in Batanagar is famous for shoe production. Kolkata, located on the banks of river Hoogley, has always been the principal business centre of eastern India as well as the gateway to the entire hinterland and megalopolis with a major fort. Major industries of the state include engineering, automobiles, electronics, pharmaceuticals, aluminum, leather, ceramics, footwear, bicycles, bone metal, jute, textiles, tea, glass, paper, timber and wagon building cool and china clay are the minerals found in the state. About 2.5 million people comprise the industrial workforce of the state.

Foreign Trade

West Bengal is an old trading state. Its position along Bay of Bengal gives locational advantage which promotes trade with other countries. Traders from countries of West Asia, Malaysia and China used to meet at the coast of Bay of Bengal and exchange their goods through Haldia port. Through the ports of West Bengal accounted for more than 6% of India's total exports in 2003-04. Other hand, three main IT software companies- TCS, WIPRO, Infosys established their centres in West Bengal to meet the demand for human capital in this industry. Kolkata sea port also exports a wide variety of products across different skill and technology levels. The most important export items are tea, marine products and iron ores.

DEMOGRAPHIC PROFILE

Population Size, Growth Rate, Density and Sex Ratio

The demographic profile of West Bengal state is shown in Table 3.3, 3.4 and 3.5. The total population of West Bengal increased from 8,01,76,197 in 2001 to 9,13,47,736 in 2011 Census at with average rate of 13.84 per cent of which rural population growth is 7.68 per cent and that of urban is 29.72 per cent. West Bengal is the fourth largest populated state of India after Uttar Pradesh, Maharashtra and Bihar. However the population density of the state considerably from 934 persons per sq. km (2001) to 950 persons per sq. km (2011) as compared to the India's density of 382 persons per sq km in 2011 (Table 3.3). Sex ratio of the state is 934, compared with sex ratio of the

state 940 in 2011 Census. However, the sex ratio of West Bengal is higher than the India's average.

Population Distribution Pattern

In West Bengal the distribution pattern of population is uneven throughout the state. Natural factors are responsible for uneven distribution of population. People wish to settle in areas where they can earn their livelihood easily. Because delta plain and low lying areas of West Bengal with rich alluvial soil and consequently well populated due to agricultural advantage. On the other hand, the mountain areas in the north and the infertile rocky plateau region of the west are naturally not so populated. Darjiling and Jalpaiguri are sparsely populated because of their cold winters as well as the uneven landscapes. Places around mines and industries are densely populated because there are greater chances to get jobs in these places, e.g. the Damodar valley area and the Hoogly industrial regions are thickly populated. Infertile soil and absence of large-scale industries are responsible for sparse population in the district of Bankura, Birbhum and Puruliya. Concentration of population is highest in Kolkata and its surrounding districts of Howrah, North 24 Parganas and Barddhaman. The soils in these districts are very fertile and the rivers and rainfall supply enough water, thus these areas are agriculturally very prosperous. A large number of industrial centers on the bank of Hoogly river also attracts many people to settle in this part of the state.

Rural and Urban Population

West Bengal is an agricultural state with most of the population living in the villages. Electricity, roads and modern amenities are slowly penetrating the rural landscape. However, a very dense rural population covers almost evenly everywhere because these areas possess fertile alluvial soils and adequate supply of water from rain and irrigation. Pattern of rural and urban population is shown in the Fig 3.14. The area dominated by higher percentage of rural population is found northern to southern part of the state along western border where as higher percentage of urban population is registered in the eastern part of the state.

Literacy

The overall literacy rate in 2001 was 68.64 per cent with higher male literacy rate of 77.02 per cent than female literacy 59.61 per cent. The literacy rate in 2011 has increased to overall 74.04 per cent with increased male and female literacy to 81.69 and 74.54 per cent respectively. The literacy rate of the state is much higher than the

Table 3.3: Trends of Population Growth, Sex Ratio and Density, 1901-2011

Year	West Bengal								India							
	Pop. (millions)	Rural Pop. (%)	Urban Pop. (%)	Pop. GR (%)	Rural Pop. GR (%)	Urban Pop. GR (%)	Sex Ratio	Pop. Density	Pop. (millions)	Rural Pop. (%)	Urban Pop. (%)	Sex Ratio	Pop. Density	Pop. (%)	Rural Pop. GR (%)	Urban Pop. GR (%)
1901	16.94	87.80	12.20	-	-	-	945	191	238.39	89.16	10.84	972	77	-	-	-
1911	17.99	86.95	13.05	6.25	5.21	13.7	925	203	252.09	89.71	10.29	964	82	5.75	6.4	0.35
1921	17.47	85.59	14.41	-2.91	-4.43	7.16	905	197	251.32	88.82	11.18	955	81	-0.31	-1.29	8.3
1931	18.89	84.68	15.32	8.14	6.98	15.01	890	213	278.97	88.01	11.99	950	90	11	10	19.12
1941	23.22	79.59	20.41	22.93	15.55	63.69	852	292	318.66	86.14	13.86	945	103	14.22	11.81	32
1951	26.29	76.12	23.88	13.22	8.27	32.52	865	296	361.08	82.71	17.29	946	117	13.31	8.8	41.42
1961	34.92	75.55	24.45	32.8	31.81	35.97	878	394	439.23	82.03	17.97	941	142	21.64	21.64	26.41
1971	44.31	75.25	24.75	26.87	26.38	28.71	891	499	548.15	80.09	19.91	930	177	24.8	21.86	38.21
1981	54.58	73.53	26.47	23.17	20.36	31.73	911	615	683.32	76.66	23.34	934	216	24.66	19.32	46.14
1991	68.07	72.52	27.48	24.73	23.01	29.49	917	766	846.42	74.28	25.71	927	267	23.87	20.03	36.47
2001	80.17	72.03	27.97	17.77	16.97	19.88	934	903	1028.73	72.17	27.83	933	324	21.54	18.1	31.48
2011	91.27	68.13	31.87	13.84	7.68	29.72	950	1028	1210.56	68.85	31.15	940	382	17.7	12.3	31.8

Source: Census of India, 1901-2011. **Note: Pop**. - Population, **GR**- Growth Rate, **%** - Percentage.

Table 3.4: District wise Distributions of Population, Growth, Sex Ratio, Literacy Rate, 2001

Districts	Total Pop. (Lakh)	Male Pop. (%)	Female Pop. (%)	Rural Pop. (%)	Urban Pop. (%)	Pop. GR (%) (1991-01)	Rural Pop. GR (%) (1991-01)	Urban Pop. GR (%) (1991-01)	Sex Ratio	Density	Total Literacy Rate	Male Literacy Rate	Female Literacy Rate	Rural Literacy Rate	Urban Literacy Rate
Darjiling	16.09	51.62	48.38	67.66	32.34	23.79	20.45	31.4	937	511	71.79	80.05	62.94	66	83.34
Jalpaiguri	34.01	51.49	48.51	82.16	17.84	21.45	19.3	32.44	942	546	62.85	72.83	52.21	58.93	80.02
Koch Bihar	24.79	51.31	48.69	90.90	9.10	14.19	12.58	33.11	949	732	66.3	75.93	56.12	64.27	85.18
Uttar Dinajpur	24.41	51.59	48.41	87.94	12.06	28.72	31.61	16.39	938	778	47.89	58.48	36.51	42.86	80.5
Dakshin Dinajpur	15.03	51.25	48.75	86.90	13.10	22.15	22.5	19.87	951	677	63.59	72.43	54.28	60.38	82.38
Maldah	32.9	51.34	48.66	92.68	7.32	24.78	24.45	29.16	948	881	50.28	58.8	41.25	47.76	79.28
Murshidabad	58.66	51.22	48.78	87.51	12.49	23.76	20.92	48.22	952	1102	24.35	60.78	45.63	52.28	68.38
Birbhum	30.15	51.29	48.71	91.43	8.57	17.99	18.92	12.57	950	663	61.46	70. 89	51.59	59.88	77.65
Barddhaman	68.95	52.04	47.96	63.06	36.94	13.96	10.72	19.97	922	982	70.18	78.63	60.95	65.83	77.39
Nadia	46.04	51.40	48.60	78.73	21.27	19.54	21.64	12.35	946	1173	66.14	72.31	59.58	61.82	81.84
North 24 Parganas	89.34	51.92	48.08	45.70	54.30	22.69	14.97	30.04	926	2182	78.07	83.92	71.72	69.07	85.19
Hugli	50.41	51.36	48.64	66.53	33.47	15.77	11.92	24.06	947	1601	75.11	82.59	67.21	71.02	82.95
Bankura	31.92	51.24	48.76	92.63	7.37	13.82	14.96	1.19	952	464	63.44	76.76	49.43	62.04	80.22
Puruliya	25.36	51.18	48.82	89.93	10.07	14.02	13.23	21.63	954	405	55.57	73.72	36.5	53.24	75.4
Medinipur	96.1	51.15	48.85	89.76	10.24	15.35	14.86	19.84	954	683	75.9	84.91	64.42	73.59	82.91
Haora	42.73	52.47	47.53	49.64	50.36	14.57	12.79	16.38	906	2913	77.01	83.22	70.11	72.81	80.02
Kolkata	45.72	54.67	45.33	0.00	100.00	3.93	NA	3.93	829	24718	80.86	83.79	77.3	-	80.8 6
South 24 Parganas	69.06	51.62	48.38	84.27	15.73	20.86	17.47	42.85	937	693	69.45	79.19	59.01	67.4	79.8 4
WEST BENGAL	801.76	51.72	48.28	72.03	27.97	17.77	16.97	19.88	934	903	68.64	77.02	59.61	79.51	85.54
INDIA	10287.37	51.74	48.26	27.82	72.17	21.56	-54.48	241.20	933	325	64.83	75.26	53.27	58.74	79.92

Source: Census of India Publication, 2001. **Note: Pop**. - Population, **GR**- Growth Rate, **%** - Percentage, **NA**- Not Applicable.

Table 3.5: District wise Distributions of Population, Growth, Sex Ratio, Literacy Rate, 2011

Districts	Total Pop. (Lakh)	Male Pop. (%)	Female Pop. (%)	Rural Pop. (%)	Urban Pop. (%)	Pop. GR (%) (1991-01)	Rural Pop. GR (%) (1991-01)	Urban Pop. GR (%) (1991-01)	Sex Ratio	Density	Total Literacy Rate	Male Literacy Rate	Female Literacy Rate	Rural Literacy Rate	Urban Literacy Rate
Darjiling	18.46	50.75	49.25	60.58	39.42	14.77	2.77	39.88	970	585	79.56	85.61	73.33	74.97	87.48
Jalpaiguri	38.72	51.20	48.80	72.62	27.38	13.87	0.65	74.72	953	622	73.25	79.95	66.23	70.55	82.33
Koch Bihar	28.19	51.49	48.51	89.73	10.27	13.71	12.25	28.28	942	833	74.78	80.71	68.49	73.87	89.01
Uttar Dinajpur	30.07	51.58	48.42	87.95	12.05	23.15	23.17	23.02	939	956	59.07	65.52	52.17	57.15	80.67
Dakshin Dinajpur	16.76	51.14	48.86	85.90	14.10	11.52	10.23	20.04	956	753	72.82	78.37	67.01	71.18	89.42
Maldah	39.88	51.43	48.57	86.42	13.58	21.22	13.04	124.81	944	1071	61.73	66.24	56.96	60.42	76.82
Murshidabad	71.03	51.07	48.93	80.28	19.72	21.09	11.09	91.16	958	1334	66.59	69.95	63.09	66.27	72.65
Birbhum	35.02	51.13	48.87	87.17	12.83	16.15	10.73	73.92	956	771	70.68	76.92	64.14	69.25	81.74
Barddhaman	77.17	51.40	48.60	60.11	39.89	11.92	6.69	20.86	945	1100	76.21	82.42	69.63	73.39	82.75
Nadia	51.67	51.35	48.65	72.16	27.84	12.22	2.85	46.9	947	1316	74.97	78.75	70.98	71.5	85.88
North 24 Parganas	100.09	51.14	48.86	42.73	57.27	12.04	4.76	18.17	955	2463	77.51	83.35	71.4	78.11	89.8
Hugli	55.19	51.00	49.00	61.43	38.57	9.46	1.09	26.11	961	1753	64.48	77.86	80.52	79.22	87.75
Bankura	35.96	51.11	48.89	91.67	8.33	12.65	11.48	27.43	957	523	70.26	80.05	60.05	69.6	85.23
Puruliya	29.3	51.09	48.91	87.26	12.74	15.52	12.09	46.15	957	468	84.06	87.61	80.34	63.75	76.24
Purba Medinipur	50.95	51.61	48.39	88.37	11.63	14.55	12.15	36.89	938	1076	78	85.26	70.5	87.47	89.14
Paschim Medinipur	59.13	50.87	49.13	87.44	12.22	14.55	12.13	31.18	966	631	87.02	92.32	81.37	77.92	87.01
Haora	48.50	51.56	48.44	36.62	63.38	13.5	-16.28	42.85	939	3300	81.8	87.03	76.36	80.82	85.58
Kolkata	44.96	52.41	47.59	0.00	100.00	-1.67	NA	-1.67	908	24252	83.31	86.95	79.43	-	87.14
South 24 Parganas	81.61	51.14	48.86	74.42	25.58	18.17	4.36	92.21	956	819	86.31	88.34	84.06	76.78	83.72
WEST BENGAL	912.76	51.28	48.72	68.13	31.87	13.84	7.68	29.72	950	1028	76.26	81.69	70.54	72.97	85.54
INDIA	12101.93	51.54	484.61	68.84	31.16	17.64	12.20	31.76	940	382	74.04	82.14	65.46	68.91	84.98

Source: Census of India, 2011. **Note: Pop**. - Population, **GR**- Growth Rate, **%** - Percentage, **NA**- Not Applicable.

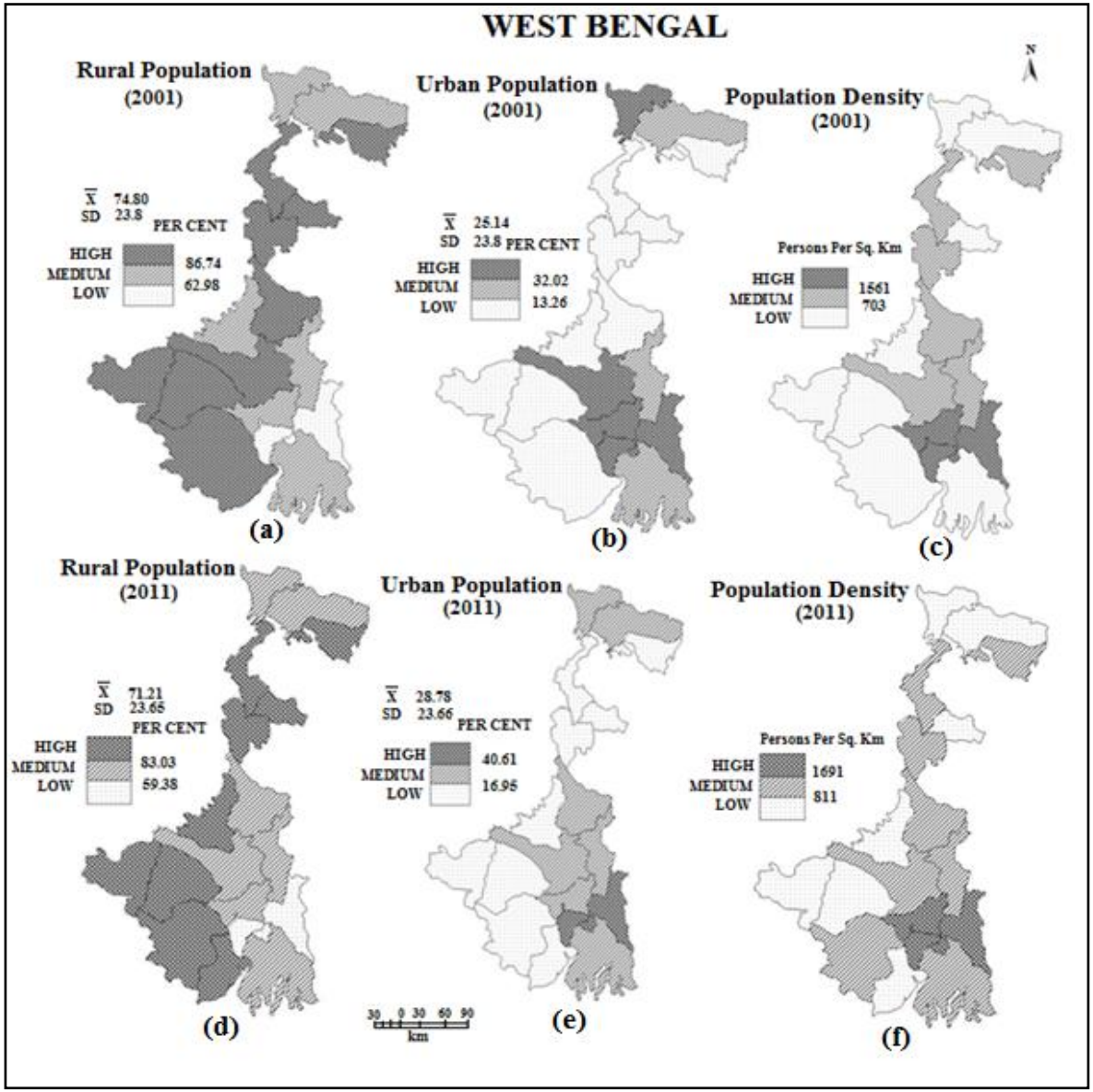

WEST BENGAL
Rural Population
(2001)
X̄ 74.80
SD 23.8
PER CENT
HIGH
MEDIUM
LOW
86.74
62.98
(a)
Urban Population
(2001)
X̄ 25.14
SD 23.8 PER CENT
HIGH
MEDIUM
LOW
32.02
13.26
(b)
Population Density
(2001)
N
Persons Per Sq. Km
HIGH
MEDIUM
LOW
1561
703
(c)
Rural Population
(2011)
X̄ 71.21
SD 23.65
PER CENT
HIGH
MEDIUM
LOW
83.03
59.38
(d)
Urban Population
(2011)
X̄ 28.78
SD 23.66
PER CENT
HIGH
MEDIUM
LOW
40.61
16.95
30 0 30 60 90
km
(e)
Population Density
(2011)
Persons Per Sq. Km
HIGH
MEDIUM
LOW
1691
811
(f)

Fig 3.14

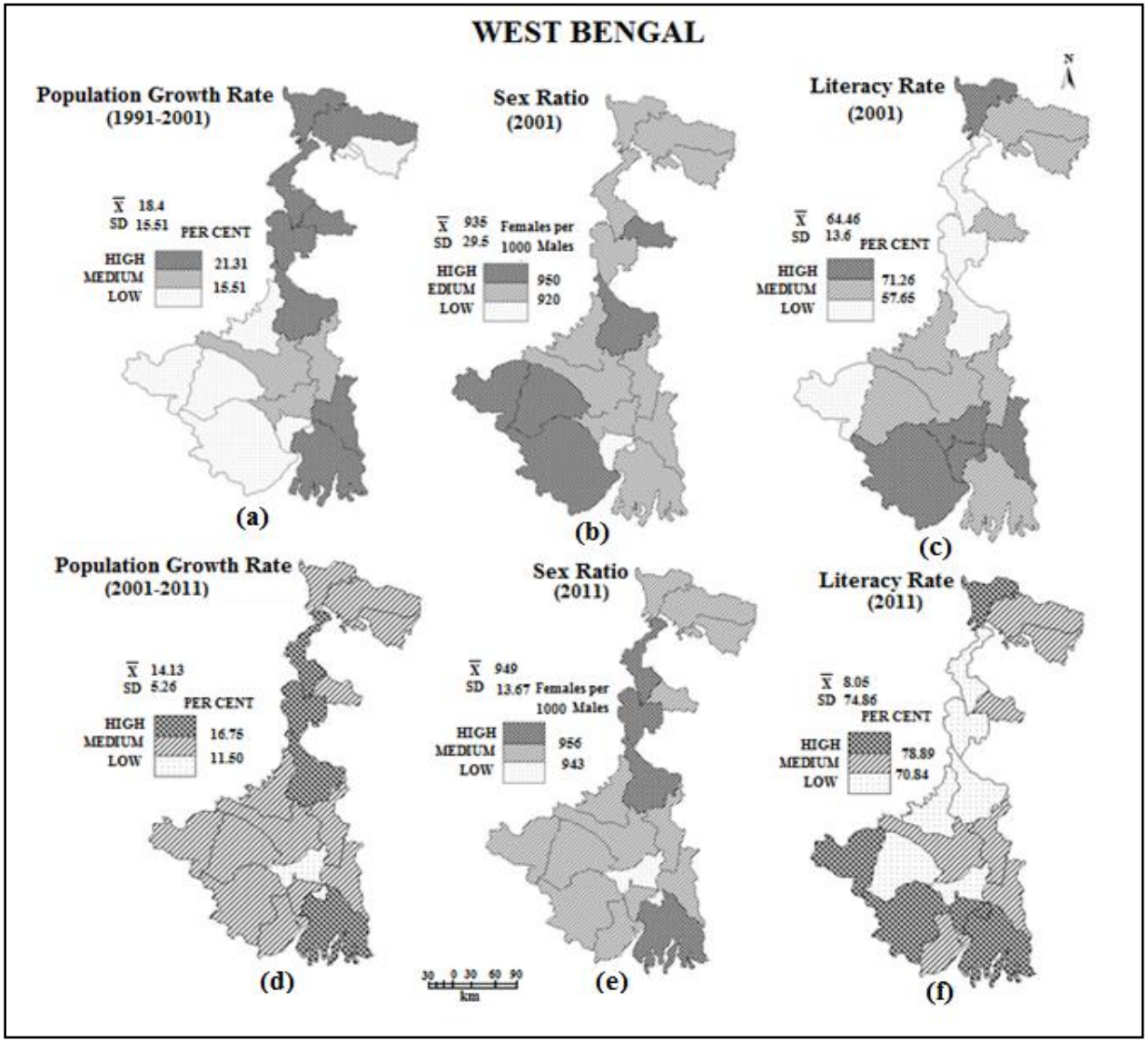

WEST BENGAL
Population Growth Rate
(1991-2001)
X̄ 18.4
SD 15.51
PER CENT
HIGH 21.31
MEDIUM
LOW 15.51
(a)
Sex Ratio
(2001)
X̄ 935
SD 29.5
Females per
1000 Males
HIGH 950
EDIUM
LOW 920
(b)
Literacy Rate
(2001)
X̄ 64.46
SD 13.6
PER CENT
HIGH 71.26
MEDIUM
LOW 57.65
(c)
N
Population Growth Rate
(2001-2011)
X̄ 14.13
SD 5.26
PER CENT
HIGH 16.75
MEDIUM
LOW 11.50
(d)
Sex Ratio
(2011)
X̄ 949
SD 13.67
Females per
1000 Males
HIGH 956
MEDIUM
LOW 943
30 0 30 60 90
km
(e)
Literacy Rate
(2011)
X̄ 8.05
SD 74.86
PER CENT
HIGH 78.89
MEDIUM
LOW 70.84
(f)

Fig 3.15

India's average both by males and female. The literacy rate in 2011 has increased to overall 74.04 per cent with increased male and female literacy to 81.69 and 74.54 per cent respectively. The literacy rate of the state is much higher than the India's average both by males and female. Purba Medinipur and Kolkata have highest male and female literacy rates with 93.14 per cent and 84.98 per cent respectively. Maldah has the lowest literate males (66.65 per cent) whereas Puruliya possesses the lowest literate females (51.29 per cent) in the state (Census 2011). From the table it is also obvious that while there was only marginal improvement in the literacy rate from 2001-2011 (male 4.27 per cent points and females 10.93 per cent points). The places of higher percentage of literacy rate are accumulated together in the extreme northern and southern districts of West Bengal (Fig 3.15). The causes of high literacy may be the presence of megalopolis Kolkata near to these southern districts of West Bengal. In northern districts for instance Darjiling, literacy level is high because of reasonable economic conditions due to well developed tourism and international trades. Maldah, Uttar Dinajpur, Puruliya has low level of literacy because of poor economic conditions.

Urbanization

West Bengal shows a changing pattern of urban growth over the decades. The rural-urban migration greatly affects the process of urbanization. Kolkata, the metropolitan city of eastern India and gateway of commercial activities attracts the skilled people from different places and gains acceleration in urbanization process. Table 3.5 shows that the clear picture of this growth of urban population in the state from 1901 to 2011. In southern part of the state urban growth is more rapid because of industrialization and mining activities in the urban areas of Burnpur, Kulti, Durgapore, Chitaranjan, Raniganj, Jamuria and Haldia. Still some of the urban centers for instance Siliguri which have importance of strategic location are developing recently. West Bengal shows an increasing trend of urban growth over decades.

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