

## Lesson-7

# Rivers of Assam



### Learning outcomes :

Students will–

- ⦿ know the source of Brahmaputra and Barak river.
- ⦿ understand different works of the river Brahmaputra and Barak in its course and know the various activities of rivers.
- ⦿ get an idea of the relationship between the rivers-Brahmaputra and Barak with their tributaries.
- ⦿ know the reasons behind the flood and erosion caused by the rivers Brahmaputra and Barak.
- ⦿ know about the influence of people's activities on the flood plains of these two rivers.
- ⦿ know the influence of the river Brahmaputra and Barak on the economic condition of the people living on these two river valleys and understand their future prospects.
- ⦿ realise the future role of the Brahmaputra as a determining factor in the safety of the socio-economic life and property of the people.

Brahmaputra and Barak are the two major rivers of Assam. Several tributaries flow into these two rivers. The Brahmaputra and its tributaries receive water from the rivers of Tibet, Arunachal Pradesh, Nagaland, Assam, Meghalaya, Bhutan, Sikkim, West Bengal and some parts of Bangladesh. The area from which these rivers and tributaries receive water is called the Brahmaputra River Basin. Similarly the Barak river also has its own river basin. The Barail mountain of Dima Hasao separates Brahmaputra river basin of north and Barak river basin of south. Brahmaputra and Barak valley are located at 90°-96° North Latitude and 24°- 28° East Longitude.

### The River Brahmaputra

The Brahmaputra is 2,906 k.m. from its source to mouth. The river is known by different names in different places. In Assam it was known as Lohitya. But later it is known as Lohit. There are several myths on the origin of Brahmaputra. According to sources the origin of Brahmaputra is from a glacier named Chema-yung-dung located in a place called Tamchuk Khambla Chorten near Kailash mountain in Tibet. It is at a height of 5,150 metres above sea level. From its source the river flows through



Fig : 7.1 A view of The Himalayas

Tibetan plateau in the north and Himalayan in the south and in an eastward direction covering 1,700 k.m. In this region the local name of the river is Tsangpo or Sangpo. The river then turns south-westward near Namsa Barwa peak and enters Arunachal Pradesh. After flowing for some

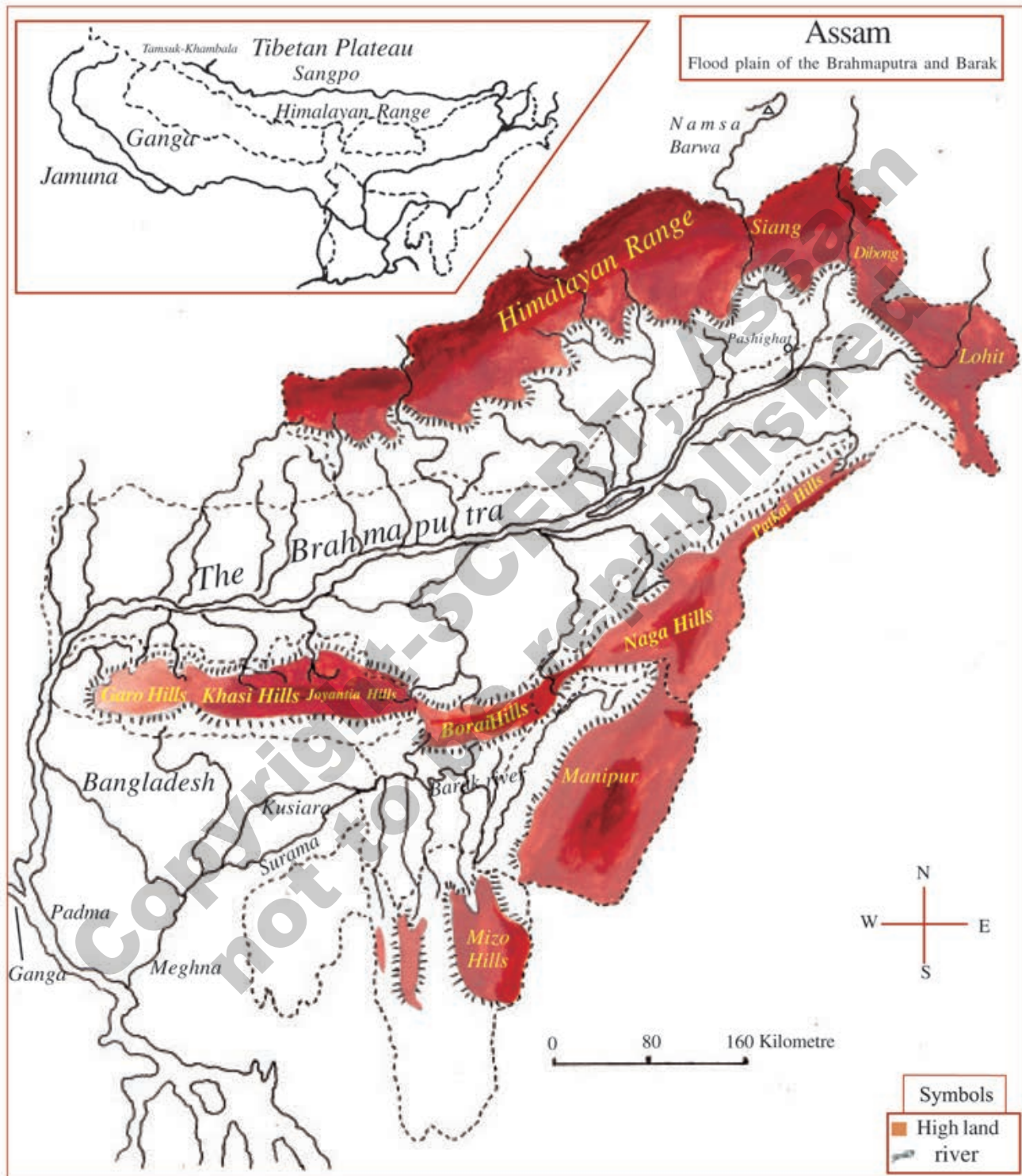


Fig. 7.2 Flood plains of Brahmaputra and Barak

distances, it changes its course and flows southwards and enters the plains near Pashighat. The local name of the river is Siang in the upper region of Arunachal Pradesh.



From a place called Peh in China to Pashighat the river crosses the high Himalayan range. Since the river flows from steep slopes erosion is high in the river bed. Therefore in this region the river takes a 'u' shaped course. Besides in some places the river bed becomes deeper and take the shape of canyons.

While entering the plains of Assam from south of Pashighat to Dhubri, which is situated in the western end of the state, the course of the river can be called as the middle course. The length of the course of the river is 640 kilometres in Assam. From Pashighat the Dihang flows for some distance and near Sadiya it joins the river Dibang and Lohit. From this region the river is known as Brahmaputra. The river flows down south-east following the slopes of the land.

In middle Assam the Brahmaputra takes westward direction. From the steep slope of Himalayas the river flows through gentle slopes on reaching the plains of Assam. The average slope of the river is 13-14 centimetres per kilometre from Sadiya to Dhubri. Since the river flows through gentle slopes in Assam, the speed of the river is comparatively slow. Therefore in this course the sediment carrying capacity of the river is less. As a result the sediments carried by the river from the Himalayan region is deposited in the plains.

The erosional power in the river bed is also less while the river flows gently. Therefore the erosional power in the river bed of Brahmaputra in Assam is less as the river flows through gentle slopes. On the other hand the erosion on the banks i.e. lateral erosion is high in the course in Assam. The structure of soil on its bank is soft and so rate of erosion is high here. While there is lateral erosion in one side of the river deposition of sediments takes place on the other. Because of this erosion and deposition the course of the Brahmaputra is zig-zag or meandering.

During rainy season the flood plains of the river are flooded with water and at places the river becomes wide. On the other hand during winter when the water level of the river comes down the depositions appear in places. Different shapes of highlands are formed as a result of such depositions. The course of a river is obstructed by this depositions and the river water is divided into several streams. This is called braided pattern. Because of depositional and erosional activities the branches of the river change their courses continuously. The back waters of these streams form wetlands. There are a number of such wetlands on both the banks of the Brahmaputra.



Fig : 7.3 Canyon

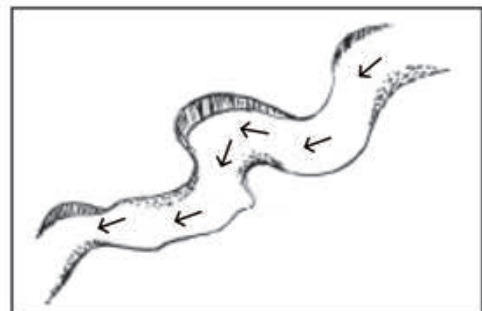


Fig : 7.4 Meandering of river

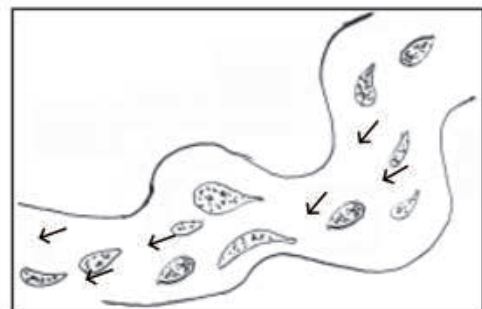


Fig : 7.5 Braided pattern of river



Some of the highlands (char) formed on the Brahmaputra flood plains are permanent and some are temporary. Kandhulimari, Shiyalmari, Bhanganmari are some permanent highlands. Alopatty is an important permanent highland (char) of Brahmaputra. Majuli situated in between Kherkatia Suti and main stream of the Brahmaputra on the south is the largest river island. The total land area of Majuli is 514 sq.km. Some marshy lands of the flood plain turn into swamps with wild plants. On the other hand the permanent highlands turn into grasslands. Till some decades the flood plains of river Brahmaputra were covered with grasses and in some places even tall trees. The wetlands were also full of aquatic plants. Such a natural environment of the flood-plains was the habitation of a large number of land and water animals. In course of time human habitation and agricultural activities on the river banks have destroyed the natural environment. Dibru-Saikhowa, Kaziranga, Laokhowa are examples of such habitation on the banks of the Brahmaputra. The bank erosion and sedimentation due to the earthquake of 1950 changed the course of Brahmaputra and the flood plains.

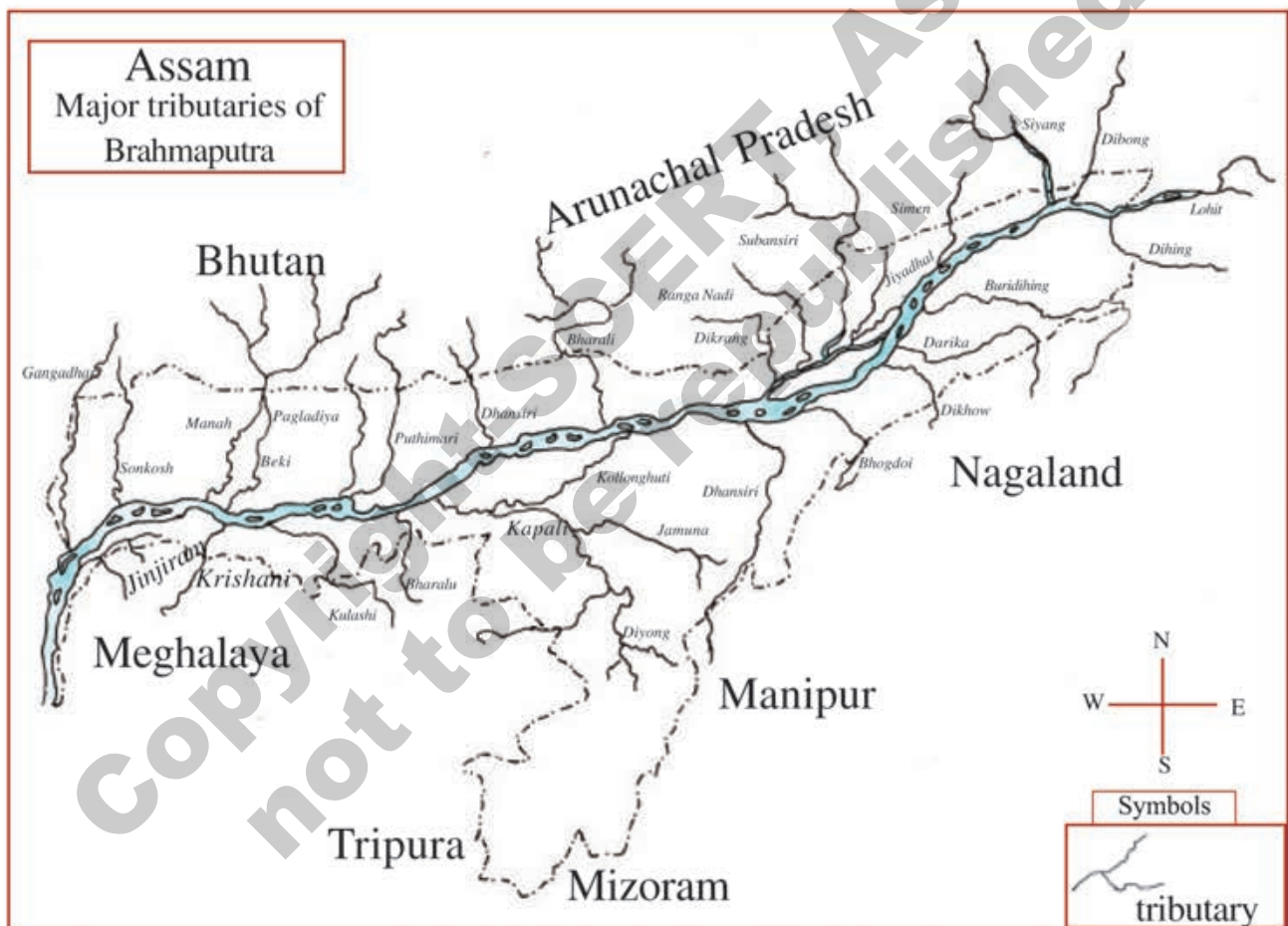


Fig. 7.6 The major tributaries of the Brahmaputra

### Activity

Look at the map of Assam in an atlas and write :

- ② Prepare a list of major tributaries in the north of the river Brahmaputra.
- ② On which bank of the river Brahmaputra Dibru-Saikhowa, Kaziranga and Laokhowa are situated?

The north bank tributaries of the Brahmaputra flow through mountain ranges of Bhutan and Arunachal Pradesh in southward direction and fall into the river. The south bank tributaries of Brahmaputra comes out from a region of comparatively hard rocks. So these rivers carry less amount of sediments.

### Activity

- ☉ Study the map in Fig. 7.6 and make a list of the names of the tributaries on the north and south bank of the river Brahmaputra.
- ☉ Find out from an atlas the districts through which Burisuti, Kherkatia suti and Kollong suti are flowing.

### Let us know :

- ☉ There are 57 tributaries on the north bank and 33 tributaries on the south bank of the Brahmaputra. In total there are 90 small and big tributaries.

### Ten main rivers of Assam

Sl. No.	Name of Rivers	Origin	Length (k.m.)	Connecting States	Connecting Districts-Cities-Towns
1	Brahmaputra River	Himalayas	2906	Arunachal Pradesh	Guwahati, Dibrugarh, Tezpur
2	Barak River	Mukru River	900	Manipur-Mizoram	Silchar, Lakhimpur
3	Dhansiri River	Laisang Peak	352	Nagaland	Golaghat, Dimapur
4	Manas River	Himalayan Range	376	Bhutan	Jogighopa
5	Dihing River	Patkai Hills	380	Arunachal Pradesh	Ledu, Digboi, Duliajan, Naharkatia, Tinsukia
6	Lohit River	Kangri Garpo Range	200	Arunachal Pradesh	Kibitho
7	Kopili River	Meghalayan Plateau	290	Meghalaya	Karbi Anglong, Dima Hasao, Nagaon
8	Kameng River	Himalayan Mountains	264	Arunachal Pradesh	Tezpur, Sonitpur, West Kameng
9	Bhogdoi River	Naga Hills	160	Nagaland	Jorhat
10	Surma River	Manipur Hills	900	Manipur-Mizoram	

The river Brahmaputra crosses Dhubri transverse and enters Bangladesh. In Bangladesh it joins Ganga and flows for some distances. The river is called Padma here. The river Barak flows from east and joins the river Meghna in Bangladesh and falls into the Bay of Bengal. In Bangladesh the length of Brahmaputra is 450 k.m. In this stage the speed of the river is gentle and therefore deposition is more. As a result a number of highlands (char) can be seen in its course. The sedi-



ments carried by the river is deposited in the mouth forming a triangle shaped ( $\Delta$ ) delta. In such deltaic region mangroves are found.

## Flood and Erosion

During the rainy season the north bank tributaries carry large amount of sediments from the Himalayas. These sediments are deposited on the plains and the river bed of Brahmaputra and its tributaries and also other neighbouring areas. Due to several years of depositional activities the river bed of Brahmaputra and Barak have become shallow. As a result the water retaining capacity of these rivers is decreasing. Therefore when it rains continuously for several days the water level rises and the rivers overflow and the adjacent areas get flooded. This is one of the reasons of frequent floods in Assam. Other causes of floods in Assam are high rainfall during monsoon, flow of water through narrow areas because of embankments, etc. The frequent flood has been causing heavy damage to houses, life and property, animals and agricultural crops.

Grasslands have prevented erosion to some extent but because of destruction of grasslands in the neighbouring areas of Brahmaputra, erosional activities are rising. The general course of a river is also disturbed by construction of houses, roads, bridges, embankment on the flood plains. In some places erosion is becoming vulnerable.

### Let us know :

- From 1954 till date more than 2,500 villages have been totally destroyed by erosion on the both banks of the Brahmaputra. Along with its fertile lands, grasslands and marshy lands were also destroyed.
- According to the National Commission, the amount of flood-prone land in Assam is 39 lakh hectre which means 39.58% of the total land.



Fig : 7.7 Bank Erosion



## Economic Importance

Water transport is a cheap means of transport system. There are several records in history which says that during Ahom rule the river Brahmaputra was used not only for transportation purposes but also during wars and battles. The Britishers also used waterways for transportation of goods and people. During those days ship plied on the Brahmaputra between Kolkata and Sadiya. After the earthquake of 1950, the river bed became shallow. Hence big ships can sail only upto Nimati throughout the year. There is scope for development of water transport system in the lower part of some major tributaries of Brahmaputra like Subansiri, Jiyabharali, Manas, Dikhow, Dhansiri, etc. The Inland Water Transport Department has established two river ports one at Pandu and another at Dhubri. Now, heavy machineries, coal and other goods are transported through these two ports between Assam and Kolkata via Bangladesh. A number of motor boats and boats are also plying on the Brahmaputra carrying people, animals and goods.

### Let us know :

- ⊙ The annual amount of water flow of the river Brahmaputra ranks third after Amazon and Congo. The total amount of flow of water from June to September is 70- 80 percent.
- ⊙ The river Brahmaputra ranks second to Hwang Ho in sediment deposition.

### Activity

Some places on the banks of Brahmaputra have the word 'ghat' (river port) in their names. Find the names of these places on a map of Assam and make a list.

The rivers of Assam play an important role in the field of agriculture. The flood water of the river Brahmaputra and its tributaries carry silt and deposit them on the flood plains making them suitable for agricultural activities. On the other hand because of flood during rainy season, most areas remain moist. This period is convenient for agricultural activities. The forests are covered with green vegetations. Because of such an environment Assam is regarded as rich in respect of



*Fig.7.8 Motor boat and Ferry transport*

its bio-diversity. There is ample scope of increasing production of rabi crops by harnessing the water of Brahmaputra and its tributaries through properly planned irrigation system.

In India Assam is rich in water resources. In the high lands the major tributaries of Assam



are rapid. On such river dams can be constructed for generating hydroelectric power without damaging the environment. Besides producing hydroelectricity, eco-friendly dams also helps in irrigation, flood control and fish farming.

Indiscriminate fishing on the rivers, construction of embankment, etc. are decreasing the number of fishes and other aquatic (water) animals like water dolphin, tortoise, otter etc. and also some other rare animals. Fishing is a source of livelihood for some riverine people.

The grasslands, swamps and highlands on both banks of the river Brahmaputra are habitations of different types of aquatic plants and animals, specially birds of different species. Such areas can be transformed into beautiful places for tourists. Presently there are a number of small water cruiser on the *ferryghat* of Brahmaputra. They are, of course, not gaining popularity. The river Brahmaputra and one or two of its major tributaries can be made into attractive eco-tourism sites if infrastructural facilities are provided.

The impact of Brahmaputra and its major tributaries on the cultural field of Assam is boundless. These rivers occupy an important place in the source of culture and tradition of the people living in the area. The rivers also play an important role in the happiness and sufferings of the people. The use of names of rivers in folk songs, dramas etc. reflects the same.



Fig : 7.9 Eco Tourism

### Write Answer :

- ⦿ Write the names of two river ports of Assam.
- ⦿ Write the names of some rivers of Assam that you have heard in songs.

## The River Barak

The river Barak originates from Moram situated in the Nagaland and Manipur border. The river flows through Manipur in a south-west direction and takes northward direction near Manipur-Mizoram border. After flowing along Assam Manipur border towards north, the river joins a tributary named Jiri and later enters Assam from eastern side. The river flows through Cachar district in Assam covering the northern part of Hailakandi and Karimganj district. The river then separates into two parts in Bangladesh named Kusiara and Surama. After flowing for some distance in Bangladesh both the rivers join to get the name Meghna, which then joins Padma and falls into the Bay of Bengal. The Barak river is about 900 k.m in length. It stretches about 30 metres to 300 metres in width. In Assam, the Barak river has 27 small and big tributaries. The course of the river in Assam and Bangladesh is meandering. In Cachar region a number of swamps can be seen on both banks. In Bangladesh the river takes a braided shape.



## Activity

Find out the names of the major tributaries of Barak and write down their names.

## Flood

The Barak river and its tributaries causes flood in some of the places of Cachar, Karimganj and Hailakandi. The development of the region is obstructed by the flood of the rivers Barak.

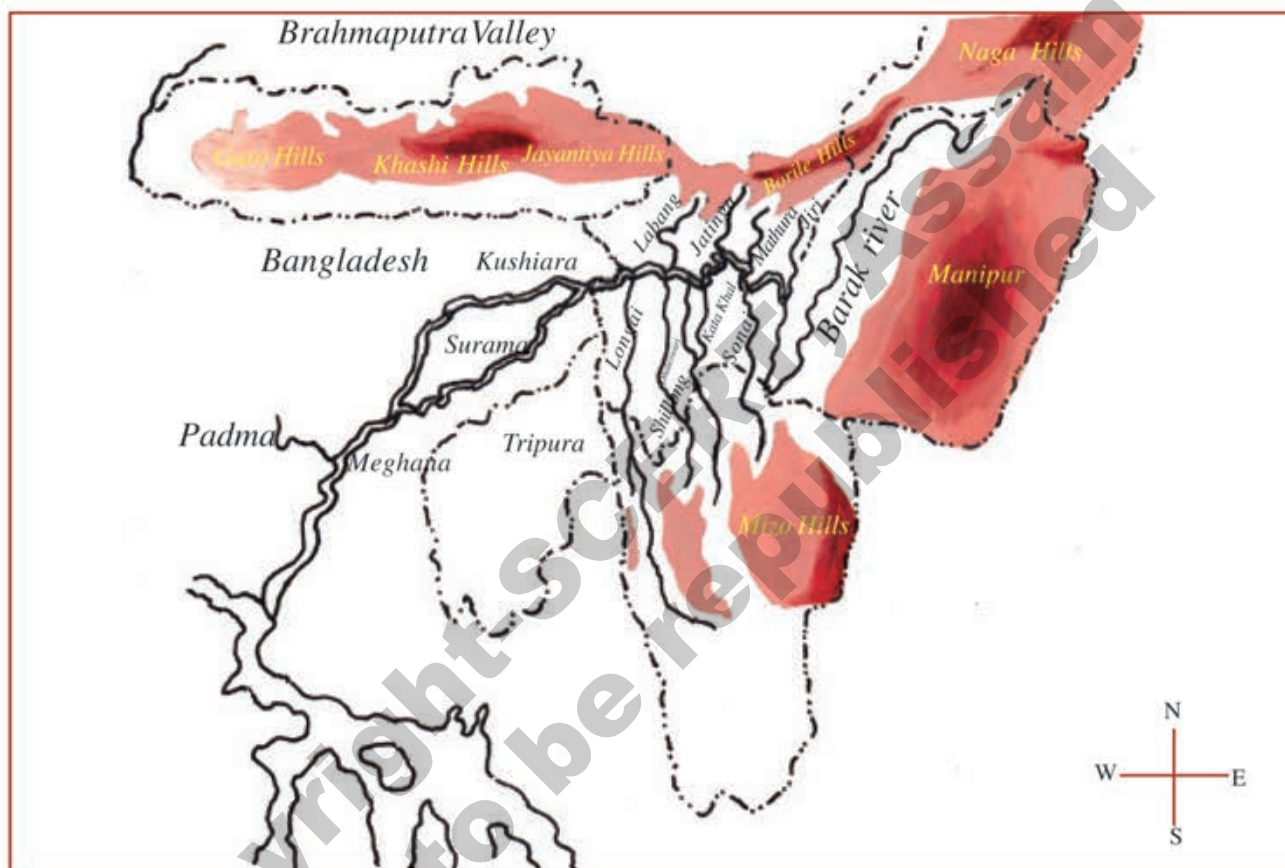


Fig : 7.10 Barak Valley

## Economic importance

The lower and middle course of the Barak are suitable for transportation. The people near the rivers use local boats for transporting people and agricultural goods. The people of Cachar keep connection with southern Manipur through this waterway.

The flood plains of Barak in Assam are suitable for agriculture. A large amount of fish are found in the swamps and wetlands on both banks of the Barak. The government also lease some parts of these swamps for fishing to collect revenue.



## Let us remember :

- ⊙ The river Brahmaputra is known by different local names in different regions like- Tsangpo (Sangpo), Siang, Dihang, Brahmaputra etc.
- ⊙ The total length of Brahmaputra is 2906 kilometres.
- ⊙ In Assam the Brahmaputra has about 90 major tributaries.
- ⊙ The erosional activities on river bed and transportation of sediments as well are high in the mountains of Tibet and Arunachal Pradesh.
- ⊙ The transportation of sediments is less in Assam. Lateral erosion and deposition is more.
- ⊙ The middle and lower course of the river Brahmaputra and Barak is meandering and braided.
- ⊙ A large number of small, big, deep, shallow swamps are found on both sides of the Brahmaputra.
- ⊙ A large number of small and big, permanent and temporary highlands (char) are seen on the flood plains of Brahmaputra.
- ⊙ In Bangladesh, the river Brahmaputra first joins Ganga and then Barak and falls into the Bay of Bengal.
- ⊙ Ships ply on Brahmaputra from Nimati to Dhubri throughout the year.
- ⊙ Motor boats ply from permanent *ferryghats* on both banks of Brahmaputra.
- ⊙ The silt deposited annually by Brahmaputra and its tributaries on its banks are suitable for agriculture.
- ⊙ The flood and erosional activities of Brahmaputra have been causing great damages.
- ⊙ There is scope for eco-tourism in the Brahmaputra and also in some major tributaries.
- ⊙ The length of the Barak is about 900 kilometres.
- ⊙ In Assam, Barak has 27 tributaries.
- ⊙ A number of swamps are seen in the lower and middle regions of Barak.



## Exercise

### 1. Write answers—

- Name the glacier which is the source of the Brahmaputra river.
- What is the total length of Brahmaputra river?
- In which country is the source of the Brahmaputra river?
- What is the shape of a river in the upper course?
- Name the countries through which the Brahmaputra flows.

### 2. Write the correct answer-

- Canyons are geographical features found in the lower/mouth/upper course of a river.
- Braided rivers are generally seen in mountains/plains/plateaus.
- Flood plains are formed due to river erosion/transportation/deposition.
- The river Barak flows through 2/3/4 districts of Assam.
- The length of the river Barak is 900 kms./ 9200 kms./2906 kms.

### 3. Match-

Arunachal	Zig-zag path
Tsangpo	Majuli
Meandering	Siang
Kollong	Tibet
River island	Suti (branch)

### 4. Write short notes -

- Work of a river in the upper course
- Work of a river in the middle course
- Work of a river in the lower course
- Course of Barak river

### 5. Why most of the course of Brahmaputra is Zig-zag?

### 6. By what names is the Brahmaputra known from its source to mouth.

### 7. Draw a sketch of North-east India and with the help of an atlas, insert the following-

- |                       |              |
|-----------------------|--------------|
| 1. Arunachal Himalaya | 11. Dibang   |
| 2. Barail Mountain    | 12. Lohit    |
| 3. Karbi plateau      | 13. Pagladia |



4. Khasi Jayantia Hills

5. Naga Hills

6. Manipur

7. Mizoram

8. Garo Hills

9. Brahmaputra

10. Subansiri

14. Manas

15. Dikhow

16. Dhansiri

17. Barak

18. Jatinga Tributary

19. Dhaleswari

20. Sonai

8. Write about the relationship between river and people living near the bank of a river or a tributary.
9. Collect pictures of flood and erosion published in newspapers, magazines, etc. and make an album.
10. Write the names of the tributaries on the north bank of the Brahmaputra from Guwahati to Dibrugarh. If needed take help from your teacher or an atlas.