Lesson - 5

Drainage System of Bharat

Bhartiya civilization and culture has developed in river valleys. Rivers occupy a very important place in Bharat particularly because of the monsoonal character of its climate. Most of the historical and religious centres of Bharat are situated along river coasts. Even the major industrial and commercial centres of today have riverine location. Rivers have an important contribution in the economic development of Bharat because of various facilities provided by them like ample supply of fresh water, hydro-electric power, irrigation, inland water transport and water for industrial use. Brief knowledge of some of the related concepts is necessary before studying the drainage system of Bharat.

Change of Course

Geologists believe that there had been changes in the course of rivers in Bharat from time to time. The most interesting example is of Sindh-Brahmputra system. This river system, which has also been termed or Shiwalik river, drained into Arabian Sea after originating from Assam in the north-east and flowing parallel to Himalayas westwards upto Suleman-Kirthar ranges. From here it turns southwards to drain into Arabian Sea. Subsequent geological events bifurcated the Indo-Brahm or Shiwalik river system. Its north-western part separated as Sindhu system and the eastern section as Brahmputra and other river systems. Similarly Saraswati drainage system also disappeared in course of time. Brahmputra, Ganga, Kosi etc. have changed their courses several times during past two decades.

Water Divide

The area which divides the drainage of a region in different directions is known as **water divide**. The dotted line shown in Fig. 5.1 is a water divide, which divides the drainage system of Bharat into three drainage regions - (1) Arabian Sea drainage, (2) Bay of Bengal drainage and (3) Inland

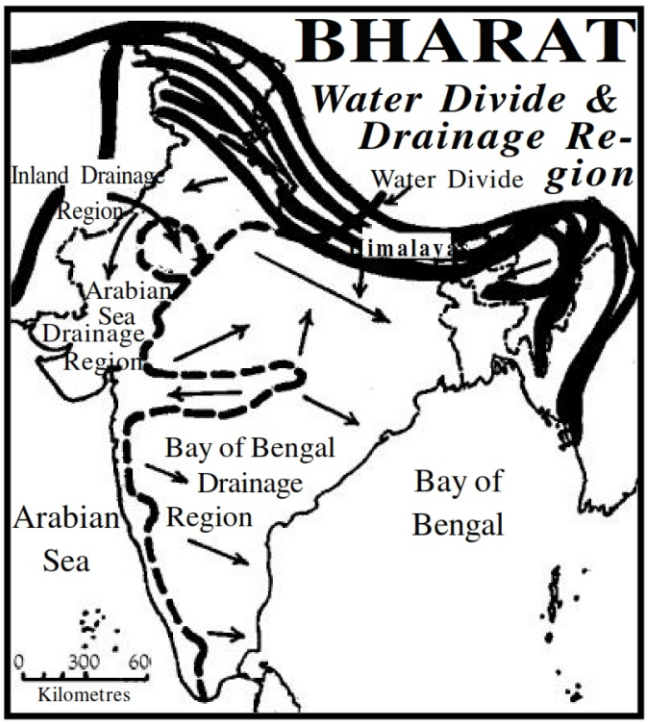

Fig.5.1 : India : Water Divide & Drainage System

Fig. 5.2 : India : Drainage System

drainage system. This line of water divide originates from Himalayas near Mansarovar lake and goes upto Udaipur passing through Kamet mountains, east of Shimla and then following Aravallis, it further extends southwards from Udaipur through Indore, Western Ghats upto Kanyakumari, after taking a bend to include Narmada and Tapti valleys into Arabian Sea drainage. The area whose waters drain into Arabian Sea, is known as **Arabian Sea drainage region**. Similarly, rivers of **Bay of Bengal drainage region** drain into Bay of Bengal. There is a small area in the north-western part of Rajasthan, from where no river channel drains into any open ocean. Therefore, it is known as **inland drainage region** (Fig. 5.2).

Geographically, drainage system of Bharat is divided into three parts -

(1) Himalayan drainage system or the rivers of northern Bharat,

(2) Peninsular drainage system or the rivers of southern Bharat and

(3) Inland drainage system.

Himalayan Drainage System or the Rivers of Northern Bharat

Most of the rivers of northern Bharat

originate from the Himalayas. The rivers originating from the Himalayas are perennial because these are fed with snow-melted water even in dry period. These rivers are divided into three drainage systems - (1) Sindh drainage, (2) Ganga drainage and (3) Brahmputra drainage.

1. Sindh Drainage

It comprises Sindh (Indus) and its tributaries - Sutlej, Vyas, Ravi, Chenab and Jhelum. Its catchment area spreads over 11.5 lakh square kms., out of which 3.25 lakh square kms. is in Bharat and rest has gone to Pakistan. Under an agreement with Pakistan, Bharat can use 42 lakh cubic metres water of this drainage system. Its upper drainage is in Bharat and lower drainage is in Pakistan. All the rivers of the system make gorges in their upper valleys. Sutlej river originates from Rakshas Tal near lake Mansarovar and enters into the plain near Ropar in Punjab after crossing mountainous region. Bhakhra dam has been constructed at that site.

2. Ganga Drainage

Its total drainage area spreads over about 8.6 lakh square kms. River Ganga originates from Gangotri glacier. Alaknanda and Bhagirathi channels join to form Ganga near Dev Prayag. It enters into the plains near Haridwar. Chambal, Betwa, Kain etc. with their tributaries join Yamuna river after originating from Vindhyachal mountains. Yamuna meets river Ganga near Allahabad at a place known as **Sangam** or **Prayag**. Ramganga, Gomti, Ghaghra (Saryu), Gandak, Kosi and Mahananda meet Ganga from the north and river Son from the south. Then Ganga river enters into Bangla Desh near Farakkha. Here it is known as river Padma which forms a delta with Brahmputra before draining into Bay of Bengal. River Kosi causes heavy losses of life and property due to frequent change in its course and floods. Hence, it is known as **Sorrow of Bihar**.

3. Brahmputra Drainage

River Brahmputra originates from Kailash Parbat near lake Mansarovar. It, then, goes upto the eastern tip of Himalayas in its eastward journey. Here it is known as **Tsan Po**. From here, it turns southwards and then flows westwards through Assam and Bangla Desh where it joins river Ganga. Its tributaries like Divang, Luhit etc. flow in a direction opposite to that of Brahmputra river before joining the latter. Tributaries like Bhareli, Sabansiri, Manas etc. join Brahmputra from its right. Besides Divang and Luhit, other tributaries like Kapili, Dhansiri, Buri Dihing etc. join Brahmputra on its left bank. Huge quantity of alluvium is transported through the drainage. In their delta region, Ganga-Brahmputra rivers are divided into numerous distributaries like Madhumati, Padma, Saraswati, Hooghli, Bhagirathi channels etc.

Peninsular Drainage or Rivers of Southern Bharat

1. Rivers draining into Bay of Bengal

Damodar, Swarnrekha, Brahmani, Mahanadi, Godavari, Bhima, Krishna, Tungbhadra, Pennar, Palar, Kaveri, Waigai rivers etc. are included in the system. These rivers flow eastwards to join Bay of Bengal due to the tilting of peninsular plateau in that direction. Most of the rivers of the peninsular plateau originate in the Western Ghats and make waterfalls. River Damodar is ill-famed for frequently changing its course and for causing flood havoc. Therefore, it is known as **Sorrow of Bengal**. Mahanadi, Godavari, Krishna and Kaveri rivers make deltas on the eastern coast.

2. Rivers draining into Arabian Sea

Narmada and Tapti are the longest and main rivers of the system. River Narmada originates from Amar Kantak peak in Maikal range and makes several waterfalls in its narrow rift valley. Kapil Dhara, Doodh Dhara, Sahastra Dhara, Dhuandhar, Ghaghri and Hiran falls are famous. Tapti flows parallel to and south of Narmada river. Besides, Luni, Sabarmati, Mahi, Sukri, Bandi, Sharavati rivers etc. also drain into Arabian sea.

Inland Drainage

Inland drainage area is not very extensive in Bharat. It extends from Sambhar lake in Rajasthan to Ghagghar flow in Haryana. All the rivers of the region are seasonal which either drain into Sambhar and other smaller lakes or disappear in the desert.

Important Points

1. Rivers have special importance in Bharat in the light of the monsoon climate.
2. Many Bhartiya rivers have been changing their course.
3. Bhartiya drainage is classified into three groups by water divide - Himalayan, Peninsular and Inland drainage system.
4. Major components of Himalayan drainage - Sindh drainage, Ganga drainage and Brahmputra drainage.
5. Major components of Peninsular drainage - Bay of Bengal drainage, Arabian Sea drainage.
6. Inland drainage system - Sambhar-Ghagghar region.

Exercise

Multiple Choice Questions

1. The aspect in which the effect of the tilting of peninsular plateau is visible, is –
   (A) Structure
   (B) Age of the plateau
   (C) Direction of drainage
   (D) Relief

2. Choose the group of which all the rivers drain into Bay of Bengal -
   (A) Mahanadi, Krishna, Kaveri and Narmada
   (B) Ganga, Brahmputra, Krishna and Tapti
   (C) Ganga, Brahmputra, Krishna and Kaveri
   (D) Ganga, Godavari, Krishna and Sabarmati.

3. Choose the group of which all the rivers make delta–
   (A) Kaveri, Krishna, Narmada and Tapti
   (B) Godavari, Krishna, Kaveri and Ganga
   (C) Mahanadi, Krishna, Kaveri and Narmada
   (D) Ganga, Godavari, Krishna and Narmada.

Very Short Answer Type

4. Tapti is a part of which drainage system?
5. What is a water-divide?
6. Ghagghar river is a part of which drainage system?

Short Answer Type

7. Name the tributary rivers that joins Ganga on its left bank.
8. Why are Himalayan rivers more useful?
9. Explain the meaning of inland drainage with the help of an example.

Essay Type

10. Give a detailed description of Bhartiya drainage system.
11. Give a comparative explanation of the Himalayan and peninsular drainage systems.

Skill

12. Mark the courses of major rivers in an outline map of Bharat.

Answer Key

1. (C), 2. (C), 3. (B).