

**Class: IX**  
**Subject: Social Science (087) - Geography**  
**Chapter: 3 Drainage**  
**Notes**

- The area drained by a single river system is called a **drainage basin**.
- Any elevated area, such as a mountain or an upland which separates two drainage basins is known as a **water divide**.
- The Indian rivers are divided into two major groups:
  - The Himalayan rivers
  - The Peninsular rivers

<b>The Himalayan rivers</b>	<b>The Peninsular rivers</b>
Most of the Himalayan rivers are perennial which means they have water throughout the year.	Peninsular rivers are seasonal.
These rivers receive water from rain as well as from melted snow from high mountains.	The flow of these rivers is dependent on rainfall.
Two major Himalayan rivers, the Indus and the Brahmaputra originate from the north of the mountain ranges.	Most of the rivers of peninsular India originate in the Western Ghats and flow towards the Bay of Bengal.
The Himalayan rivers have long courses from their source to the sea.	These rivers have shorter and shallower courses as compared to Himalayan rivers.

- The Indian rivers are divided into two major groups:

**The Himalayan Rivers**

The major Himalayan rivers are the Indus, the Ganga and the Brahmaputra. A river along with its tributaries may be called a **river system**.

**1) The Indus River System**

- Indus is one of the longest rivers in the world with a total length of 2900 km.
- The river Indus rises in Tibet, near Lake Mansarowar.
- It enters India in the Ladakh district of Jammu and Kashmir where it forms a picturesque gorge.
- The Satluj, the Beas, the Ravi, the Chenab and the Jhelum join together to enter the Indus near Mithankot in Pakistan.

**2) The Ganga River System**

- The source of the Ganga called the 'Bhagirathi' is fed by the Gangotri Glacier and joined by the Alaknanda at Devaprayag in Uttarakhand.
- The Ganga emerges from the mountains to the plains at Haridwar.

- The Ganga is joined by many tributaries from the Himalayas, a few of them being major rivers, such as the Yamuna, the Ghaghara, the Gandak and the Kosi.
- The length of the Ganga is over 2500 km.

Farakka in West Bengal is the northernmost point of the Ganga delta where the Ganga river divides into 2 parts.

1. **The Bhagirathi-Hooghly** flows southwards through the deltaic plains to the Bay of Bengal.
2. The mainstream flows southwards into Bangladesh and is joined by the Brahmaputra. Further downstream, it is known as the **Meghna**. The Meghna River flows into the Bay of Bengal and form Sundarban Delta.

### **3) The Brahmaputra River System**

- The Brahmaputra rises in Tibet east of Mansarowar lake.
- It is slightly longer than the Indus.
- On reaching the Namcha Barwa (7757 m), it takes a ‘U’ turn and enters India in Arunachal Pradesh where it is called the **Dihang**.
- Dihang is joined by the Dibang, the Lohit, and many other tributaries to form the Brahmaputra in Assam.

### **The Peninsular Rivers**

The main water divide in Peninsular India is formed by the Western Ghats. Most of the major rivers of the Peninsula, such as the Mahanadi, the Godavari, the Krishna and the Kaveri flow eastwards and drain into the Bay of Bengal. These rivers make deltas at their mouths. The Narmada and the Tapi are the only long rivers, which flow west and make estuaries.

#### **1) The Narmada Basin**

- The Narmada rises in the Amarkantak hills in Madhya Pradesh.
- The Narmada flows through a deep gorge at the ‘**Marble rocks**’ near Jabalpur.
- At **Dhuadhar falls** the river jumps over steep rocks.
- The Narmada basin covers parts of Madhya Pradesh and Gujarat.

#### **2) The Tapi Basin**

- The Tapi rises in the Satpura ranges, in the Betul district of Madhya Pradesh.
- Its basin covers parts of Madhya Pradesh, Gujarat and Maharashtra.

#### **3) The Godavari Basin**

- The Godavari is the largest Peninsular river. Its length is about 1500 km.
- It rises from the slopes of the Western Ghats in the Nasik district of Maharashtra.
- The basin covers parts of Maharashtra, Madhya Pradesh, Odisha and Andhra Pradesh.
- The Godavari is joined by a number of tributaries, such as the Purna, the Wardha, the Pranhita, the Manjra, the Wainganga and the Penganga.
- Owing to its length and the area it covers, it is also known as the **Dakshin Ganga**.

#### **4) The Mahanadi Basin**

- The Mahanadi rises in the highlands of Chhattisgarh.
- The length of the river is about 860 km.
- Its drainage basin is shared by Maharashtra, Chhattisgarh, Jharkhand, and Odisha.

### 5) *The Krishna Basin*

- It rises from a spring near Mahabaleshwar.
- The length of the river is about 1400 km.
- Its drainage basin is shared by Maharashtra, Karnataka and Andhra Pradesh.

### 6) *The Kaveri Basin*

- The Kaveri rises in the Brahmagiri range of the Western Ghats.
- The total length of the river is about 760 km.
- Its basin drains parts of Karnataka, Kerala and Tamil Nadu.

Besides these major rivers, there are some smaller rivers flowing towards the east. Some of them are:

- The Damoder
- The Baitarni
- The Brahmani
- The Subarnrekha

### **Lakes**

India has many lakes. These lakes differ from each other in size and other characteristics.

1. Most lakes are permanent
2. Some contain water only during the rainy season
3. Some lakes are the result of the action of glaciers and ice sheets
4. Some have been formed by wind, river action and human activities

These lakes are attractive for tourists in places like Srinagar, Nainital. Different lakes are:

- A meandering river across a floodplain forms cut-offs that later develops into **ox-bow lakes**.
- Spits and bars form **lagoons** in the coastal areas. **Eg:** the Chilika lake, the Pulicat lake and the Kolleru lake.
- Lakes in the region of inland drainage are sometimes seasonal. For example, the Sambhar Lake in Rajasthan is a salt water lake which is used for producing salt.
- Most of the **freshwater lakes** are in the Himalayan region. They are of glacial origin. The Wular lake in Jammu and Kashmir is the result of tectonic activity which is the largest freshwater lake in India. Some other important freshwater lakes are Dal lake, Bhimtal, Nainital, Loktak and Barapani.

### **Importance of Lakes**

Lakes are useful to human beings in many ways:

1. Lakes help to regulate the flow of a river.
2. During heavy rains, these lakes prevent flooding.
3. During the dry season, these lakes help to maintain an even flow of water.
4. Lakes can also be used for developing hydel power.
5. Lakes moderate the surrounding climate, maintain the aquatic ecosystem, enhance natural beauty, and provide recreation.

### **Role of Rivers in the Economy**

- Rivers have been of fundamental importance throughout human history.
- Water from rivers is a basic natural resource, essential for various human activities.
- Rivers are used for irrigation, navigation, hydropower generation etc.

### **River Pollution**

The growing domestic, municipal, industrial and agricultural demand for water from rivers is affecting the quality of water. Rivers are getting polluted as a heavy load of untreated sewage and industrial effluents are getting emptied into the rivers. Concern over rising river pollution led to the launching of various action plans to clean the rivers.