

## 20. RIVERS OF INDIA & MULTI-PURPOSE PROJECTS

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- On the basis of origin, Indian rivers are divided into (A) Himalayan Rivers and (B) Peninsular Rivers.

### A. HIMALAYAN RIVERS

- Himalayan Rivers are examples of antecedent rivers, they have carried out the erosional activity throughout the evolution of Himalayas and have formed gorges. These rivers are still young and engaged in erosional activities.
- Himalayan Rivers can be divided into three main river-systems-Indus system, Ganga-system and Brahmaputra systems.

#### Indus River System

- Indus along with its tributaries forms one of the largest drainage systems of the world.
- Indus river enters India at damchok (Changla Pass) elevation of 4206m and continues to flow in the north-west direction between the Ladakh and the Zaskar Ranges.
- Just above Mithankot, it receives accumulated waters of Panjnad-Jhelum, Chenab, Ravi, Beas and Satluj.
- Finally, it empties itself in the Arabian Sea, making a big delta.

#### The Jhelum

- It rises in a spring at Verinag.
- At Muzaffarabad, the river takes a sharp hairpin swing southward and the Kishanganga joins it on its rightbanks.
- Thereafter, it forms the Indian-Pakistan boundary for 170 km.
- It joins the Chenab at Jhang.

#### The Chenab

- It originates from near the Bara Lacha Pass in the Lahul-Spiti part of the Zaskar Range. The united stream-Chandra and Bhaga-called the Chandrabhaga flows in the north-west direction through Himachal Pradesh and enters Jammu & Kashmir as Chenab.
- It receives waters of Jhelum and Ravi rivers.

#### The Ravi

- It originates from Kullu hills near the Rohtang Pass in Himachal Pradesh.

- It cuts a deep gorge in the Dhaola Dhar range after crossing Chamba.
- It enters Punjab Plains near Madhopur and later enters Pakistan 26 km below Amritsar.
- It debouches into the Chenab a little above Rangpur.

#### The Beas

- It also originates near Rohtang Pass, close to the source of the Ravi.
- It debouches on the plain near Pong and meets the Satluj river at Harike.
- It lies entirely within the Indian territory.

#### The Satluj

- It rises from the Manasarovar – Rakas Lake near Darma Pass.
- It enters the plain at Rupnagar (Ropar).
- It is joined by the Beas at Harike.
- From Ferozepur to Fazilka, it forms the boundary between India and Pakistan for nearly 120 km.

#### The Ganga River System

- It originates as Bhagirathi from the Gangotri glacier.
- Alaknanda from Satopant glacier joins it at Devprayag. Pindar river joins it at Karan Prayag and Mandakini or Kali Ganga at Rudra Prayag.
- The combined water of the Bhagirathi and the Alaknanda flows in the name of the Ganga, below Devprayag.
- It debouches on plain from hills in Haridwar.
- It is joined by Yamuna in Allahabad.
- Beyond Farakka, it is known as Padma in Bangladesh.
- It bifurcates itself into Bhagirathi-Hooghly in West Bengal and Padma-Meghna in Bangladesh.
- The Brahmaputra as the Jamuna joins it at Goalundo.

#### The Yamuna

- It is the largest and the most important tributary of the Ganga.
- It originates from the Yamunotri glacier on the Bandarpunch Peak in Garhwal in Uttaranchal.

### **The Chambal**

- It rises near Mhow in (M.P).
- It joins Yamuna in Etawah district of Uttar Pradesh.
- Banas joins it near Sawai Madhopur.
- Betwa, rising in Bhopal, joins the Yamuna near Hamipur. Dhasan is also a tributary.

### **The Son**

- The Son river springs from the Amarkantak Plateau.
- It joins the Ganga near Danapur at Patna district in Bihar.

### **The Damodar**

- It rises in the hills of the Chotanagpur plateau and flows through a rift valley.
- It is also called ‘Sorrow of Bengal’.
- It joins the Hugli 48 km below Kolkata.

### **The Ramganga**

- It rises in the Garhwal district of Uttaranchal.
- It joins the Ganga at Kannauj

### **The Ghaghra**

- It originates near the Gurla Mandhota peak, south of Manasarovar in Tibet.
- It joins Ganga a few kilometres downstream of Chapra in Bihar.

### **The Kali**

- It originates from Milan Glacier as Gori Ganga in Nepal.
- It forms the boundary between Nepal and Kumaon.
- It is known as the Sarda or Chauka after it reaches the plains near Tanakpur.
- In Barabanki (UP) it joined Ghaghra.

### **The Gandak**

- It originates near the Tibet-Nepal border.
- it joins Ganga at Sonpur (Patna)

### **The Kosi**

- The Kosi river consists of seven streams.
- Seven rivers mingle with each other to form three streams named the Tumar, Arun and Sun Kosi.
- Then all three streams unite at Triveni to the north of the Mahabharat Range to form the Kosi.

### **The Brahmaputra River System**

- The Brahmaputra rises in the great chemayungdung glacier in the Kailas range.
- It is known as Tsangpo in Tibet.
- It turns suddenly south and south-west near

Namcha Barwa.

- It emerges from the foothills under the name of Siang and then the Dihang in Arunachal Pradesh.
- Near Dhubari it enters Bangladesh as Jamuna and meets Padma at Goalundo.
- Majuli is the river island of the river Brahmaputra (area – 1250 sq km).
- National waterways – 2 is on the Brahmaputra river from Sadiya to Dhubri.

### **The Peninsular River System**

- Three main directions of flow:
- Mahanadi, Godavari, Krishna, Cauvery and several smaller rivers draining south-east into the Bay of Bengal.
- The Narmada and the Tapi flowing west as well as several small rivers originating from the Western Ghats flow westwards into the Arabian Sea.
- Tributaries of Ganga and Yamuna such as Chambal, Betwa, Ken, Son and Damodar flow in the north-easterly direction.

### **The East Flowing River**

#### **The Mahanadi**

- It has its source in Dandakaranya near Sihawa in Raipur district of Chhattisgarh.
- Hirakud dam is built on this river.

#### **The Godavari**

- It is the largest river system of the peninsular India.
- It is known as ‘Vridha Ganga’ or ‘Dakshina Ganga’
- The source of the river is in the Trimbak Plateau of North Sahyadri near Nashik in Maharashtra.
- Manjra is the only important right bank tributary which joins the Godavari near Kondalwadi.

#### **The Krishna**

- It rises in Western Ghats near Mahabaleshwar.
- Koyna Dam is made on the Koyana river, a tributary of the Krishna river.

#### **The Cauvery**

- It is designated as “the Ganga of the South”.
- Its source lies at Taal Cauvery on the Brahmagiri range of hills in the Western Ghat.
- Sivasamudram waterfalls is on this river.

#### **The Subarnarekha**

- It originates from the Ranchi plateau.
- It forms the boundary between West Bengal and Orissa in its lower course.

### **The Brahmani**

- It comes into existence by the confluence of the Koel and the Sankh rivers near Rourkela in Orissa.

### **The Penneru**

- It springs from the Nandi Durg peak in Karnataka.

### **The Palar**

- Important River of T.N.
- Rises from Karnataka near Kolar Godl Field.

### **Vaigai**

- Most Important River of Southern T.N.
- Rises from Cardamom hills.
- Drained into Pak Bay.

### **The West Flowing Rivers of the Peninsula**

#### **The Narmada**

- It is the largest of all the west flowing rivers of the Peninsula.
- It rises from the Amarkantak plateau in Shahdol district of Madhya Pradesh.
- The Duan Dhar falls is formed by the Narmada River in Jabalpur.
- It makes an estuary studded with several islands. Aliabet is the largest island.

#### **The Tapi**

- It is also known as ‘the twin’ or ‘the handmaid’ of the Narmada.
- It originates from Multai in Betul district of Madhya Pradesh.

#### **The Sabarmati**

- This, 320 km long river is the name given to the combined streams—the Sabar and the Hathmati.
- It rises from the hills of Mewar from lake Jaisamudra in the Aravali Range.

#### **The Mahi**

- It rises in the Vindhyan range and debouches into the Gulf of Khambhat.

#### **The Luni**

- Its source lies to the west of Ajmer in the Aravalli.
- Finally, it is lost in the Rann of Kutch.

#### **Periyar**

- Longest River of Kerala
- Known as ‘the life line of Kerala’.

### **Major Lakes of India**

- **Wular** : It is an ox-bow lake on the Jhelum River in Jammu & Kashmir. Tulbul project is situated on it. This is the largest fresh water lake in India.
- **Dal** : It is a beautiful and an important lake of Jammu and Kashmir.
- **Sambar**, Lunakarsar, Panchabhadra and **Didwana** are salt lakes of Rajasthan. Salt is produced from these lakes.
- Udaysagar, Pichhaura, **Jaisamand** and **Rajsamand** are other important lakes of Rajasthan.
- **Rana Pratapsagar** and **Jawahar Sagar** (Rajasthan) and **Gandhi Sagar** (MP) are man-made lakes on the Chambal River.
- **Ukai** (Gujarat) is a man-made lake on the Tapi river.,
- **Govind Sagar** is the lake formed behind the Bhakra Nangal Dam, in Himachal Pradesh.
- **Nagarjuna Sagar** (Andhra Pradesh) on Krishna River, Nizam Sagar (Andhra Pradesh) on Manjara and Tungabhadra (Karnataka) on Tunga Bhadra River are other important manmade lakes.
- **Govind Vallabha Pant** (Chhatisgarh & UP) is a lake formed on river Rihand a tributary of Son.
- **Stanley reservoir** is the lake formed behind the Mettur Dam on river Kaveri
- **Loktak Lake** : It is the largest fresh water lake in North East India. There is a floating National park on it, called Keibullamjao.
- **Chilka lake** (Orissa) is the large salt water lagoon lake of India.
- **Kolleru** is a large lagoon lake formed in the deltaic region of Andhra Pradesh.
- **Pulicat Lake** : It is a lagoon lake. Sriharikota island is situated here, where we find the Satish Dhawan Satellite launch centre.
- **Vembanad Lake** is located in Kerala. On this lake is located the Wellington island where boat races are organised.
- **Ashtamudi** is another important lake in Kerala.
- **Lonar Lake** in the Buldhana district of Maharashtra, is a crater lake, which has been formed due to falling of a meteorite.