

Quadrant II

Notes

Programme: Bachelor of Arts (First Year)

Subject: Geography

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Course Title: Resource Geography of Goa

Unit 1 – Geographical Setting and Physical Resources of Goa

Module Name: River systems and Lakes

Module Number: 07

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River: A large natural stream of water flowing in a channel to the sea, a lake, or another river.

Drainage basin: Area drained by rivers and tributaries.

Digital Watershed Atlas of India:-

Indus drainage – **1**

Ganges drainage – **2**

Brahmaputra drainage – **3**

All drainage flowing into the Bay of Bengal except those at 2 & 3 – **4**

All drainage flowing into the Arabian Sea except Indus drainage – **5**

Western Rajasthan mostly ephemeral drainage – **6**

Rivers in Goa:-

1. Tiracol
2. Chapora
3. Mandovi
4. Zuari
5. Sal
6. Talpona
7. Cancona
8. Galgibaga

Madovi and Zuari: Two most important rivers of Goa

The Mandovi also called Mahadayi rises at an elevation of 600 m in the main Sahyadris above the Kelil Ghat in a Degao village of Belgaum district of Karnataka state, located on the western fringe of the Karnataka Plateau. Flowing for 29 km through Uttar Kannada District of Karnataka State the river enters Goa State via Sattari Taluka of North Goa District. Flowing a length of 52 km within the Goa State it falls into Arabian Sea at the Marmagao Bay near Panjim. Catchment of Mandovi River lies in Goa and partly in Karnataka making it an interstate river. Within Goa State the Mandovi River drains an area of 1,580 sq km covering about 42% area of the state.

In the upper reaches of the Sattari valley, this river is called the Mhadei (meaning Great Mother). After its confluence with the Khandepar river at Bembol (Bicholim) it is called Mandovi till it meets the Arabian Sea ahead of Panaji. Mhadei River is an important tributary of Mandovi holds a great ecological significance for the state. About 85% of the area of Mhadei watershed is forest and is home for Mhadei Wildlife Sanctuary.

Zuari's source water; lies entirely within the state, with the inter-state boundary almost following the water divide. Referred to as a tidal river, Zuari originates in the Dighi Ghat of the Karnataka

part of the Sahyadri Hills and after flowing a zigzag stretch of about 145 km joins the Arabian Sea at Mormugao – Dona Paula point. Zuari basin extending from Netravali to Panjim covers an area of about 975 km² and constitutes about 27 % of the total area of Goa. The basin has forest area of 31.4% and hosts Netravali Wildlife Sanctuary.

Waters of Mandovi and Zuari are extensively used for drinking and agriculture purposes. Mandovi also serves as an important internal navigation route for commercial purpose. Panaji, the state capital and Old Goa, the former capital of Goa, are both situated on the left bank of the Mandovi.

Like Mandovi, **Terekhol and Chapora Rivers** are also interstate rivers as they originate in Maharashtra. Terekhol is the northernmost river which originates in the Manohargad in the Sahyadris and running along the border of Goa for 27.5 kms discharges itself into the Arabian Sea. Patradevi is the entry point of Terekhol in Goa. Torxe, Khadshi and Pedne are its main tributaries. Interestingly except for the historic fort of the Terekhol tract on its right bank, only the left bank portion lies in Goa. Terekhol sustains the traditional livelihood of thousands of people of Pernem.

Chapora rises above Ramghat at Tudy in Chandgad in Maharashtra and follows a zigzag course, demarcating the border of Pernem, Barde and Bicholim before debouching into the Arabian Sea near the historic fort of Chapora. The 32 km long Colval River enters Goa at Ibrampur village of Pernem. Sal, Kalana Virnoda and Parshe are the tributaries of the Colval. It is called Tillari in Maharashtra and has Tillari Multipurpose Project and Tillari Hydropower Project , both in Maharashtra.

Sal which is the important river of the South Goa, rises near Verna and flows for 35 km parallel to the coast meets the sea at Betul. Talpan is the important river of Canacona. Originating in the Ambaghat in Canacona, the river runs 31 kms long course. Galjibag is also one of the important rivers in the South Goa. Two rivers of Canacona namely Mashe and Loliye are the main feeders of Galjibag. It meets the sea near Mashe.

Nature of rivers:-

- Rainfed and tidal influx (up to 40km).
- During monsoon -sweet, non monsoon –salt.
- Rivers pour water into Arabian sea.
- More than 40 estuarine ,90 river island.
- Dendritic pattern and consequent streams.

Importance of river as resource:-

- Adding beauty and romance to the land.
- Source of water.
- Irrigation.
- Transport ore/ferry.
- Environment and ecosystem.
- Tourism.

Lakes in Goa

Meaning of lake: A large area of water surrounded by land. Majority of lakes on Earth are fresh water.

1. Carambolim lake:

- Tiswadi taluka, Karmali station.
- Area-70 ha (40 ha water laden throughout year).
- Built as irrigation tank.

- Healthy lake ecosystem.
- Bird watching site.
- 117 species of birds(local and migrants birds).

2. Pilar lake:-

- Pillar village, near Panaji.
- Area: 3.34 ha.
- Used as multipurpose village tank.
- Among 3 lakes, maximum planktonic diversity(phytoplankton 26 & 35 species zooplankton).
- 400 cotton teals can be seen in migratory season.
- Home of pintail ducks and coot.

3. Santa Monica lake

- Located in industrial campus of Syngenta India ltd.
- Perfect example of harmony between economics and ecology.
- In 2 parts, metal road.
- High concentration of chlorides(seepage, Banastarim river)
- Sustainably uses water by industry(cooling).
- Home for local and migratory birds. Breeding activity.

4. Mayem

- Bicholim taluka in North Goa.
- The region around the lake is hilly, and the slopes are covered with forests and wild cashews.

Threats to lake:

- Siltation (Konkan station).
- Human interference-encroachment , solid food package dumps, washing cattles.
- Increased in nutrient –eutrophication.

Recommendation

- De-siltation.
 - Control human interference.
 - Regular maintenance.
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