

Quadrant II – Notes

Programme: Bachelor of Arts (Third year)

Subject: Geography

Paper Code: GED102

Paper Title: The Physical Geography of India

Unit: II

Module Name: The Peninsular River System; West Flowing Rivers: Narmada

Module No: 15

Name of the Presenter: Irfan Khwaja

Narmada river

- Narmada river is the largest west flowing river of the peninsula India. It rises from Narmada Kund, located at Amarkantak, in the Anuppur district of Madhya Pradesh, at an elevation of about 1057 m in the Maikala range. It forms the traditional boundary between North and South India.
- The river flows through Madhya Pradesh, Maharashtra and Gujarat between Vindhya and Satpura hill ranges before falling into the Gulf of Cambay in the Arabian Sea about 10 km north of Bharuch, Gujarat. The total length of the river from the head to its outfall into the Arabian Sea is 1,333 km.
- For the first 1085 km, it runs in Madhya Pradesh and thereafter forms the common boundary between Madhya Pradesh and Maharashtra for 39 km, and Maharashtra and Gujarat for 43 km. It has the longest stretch in Gujarat of 166 km.
- There are total 41 tributaries of Narmada river. Out of these, 8 important tributaries join the river from right bank and 11 important tributaries join from the left bank.
- The first major tributary, the Burhanpur, joins Narmada from left. Further downstream, it receives the Banjar from the left. As Narmada enters the upper fertile plains, it receives the Hiran on the right bank. In continuation, the river receives several tributaries - the Sher, the

Shakkar, the Dudhi, the Tawa, the Ganjal from the left and the Tendon, the Barna, the Kolar from the right.

- During its journey through the middle plains, it receives tributaries - the *Chhota Tawa*, the *Kundi* from the left and the *Man* from the right. In the lower hilly regions, Narmada receives the *Goi* from the left and the *Uri*, the *Hatni* from the right. The *Karjan* from the left and the *Orsang* from the right are important tributaries joining the river in the lower plains. Finally, the river drains into the Gulf of Khambhat (Arabian Sea).

Narmada Basin

Salient features

- Narmada basin extends over an area of 98,796 sq. km. which is nearly 3% of the total geographical area of the country.
- The basin is bounded on the north by the Vindhya, on the east by the Maikala range, on the south by the Satpuras, and on the west by the Arabian Sea.
- Lying in the northern extremity of the Deccan plateau, the basin covers large areas in the States of Madhya Pradesh, Gujarat and a comparatively smaller area in Maharashtra and Chhattisgarh.
- The basin spans over broadly 27 districts and 20 parliamentary constituencies (India- WRIS 2009) comprising 15 of Madhya Pradesh, 3 of Gujarat, and 1 each of Chhattisgarh and Maharashtra.
- The hilly regions are in the upper part of the basin, and lower middle reaches are broad and fertile areas well suited for cultivation. The average annual water potential of the basin is 45.64 Billion Cubic Meter (BCM). The utilizable surface water in the basin accounts to 34.50 BCM.

Climate

The climate of the basin is humid tropical ranging from sub-humid in the east to semi-arid in the west with pockets of humid or per humid climates around higher hill reaches.

The Tropic of Cancer crosses the Narmada basin in the upper plains area and a major part of the basin lies just below this line. The climate of the basin is

humid and tropical, although at places extremes of heat and cold are often encountered. In a year, four distinct seasons occur in the basin. They are:

- cold weather
- hot weather
- south-west monsoon and
- post-monsoon.

The normal annual rainfall for the basin works out to 1,178 mm. South-west monsoon (June to October) is the principal rainy season accounting for nearly 94% of the annual rainfall. About 60% of the annual rainfall is received during July and August months.

Major Projects in Narmada Basin

1. **Bargi Project** : Rani Avanti Bai Sagar Dam (Bargi) was completed in June, 1988. A composite 69.8 mtr. high concrete dam and earthen flanks on main Narmada river near Bargi Village of Jabalpur district. The culturable command area (CCA) of this projects is 2.198 lakh ha. in Jabalpur and Narsinghpur district. This project generates 90 MW (2x45 MW) hydro power from River Bed Power House and 10 MW (2x5 MW) from Canal Bed Power House. The total cost of this project is Rs. 1514.89 crores.
2. **Tawa Project** : Tawa irrigation project was completed in 1992-93. A composite masonry dam with earthen flanks constructed across the river Tawa (a major tributary on left bank of Narmada) near Ranipur Village in Hoshangabad distt. The culturable Command Area (CCA) of this project is 2.468 lakh hectare in Hoshangabad & Harda district respectively. This project generates 13 MW (2x6.75 MW) hydro - power from Canal Bed Power House, which was constructed in year 1995. The cost of the project was 113 Crores.
3. **Indira Sagar Project** : The Dam is constructed across the river Narmada near village Punasha of Khandwa district. After completion of Canal Network, project will irrigate 123000 hectare of land in Khargone, Barwani & Khandwa district. The estimated cost of the project is 3182.77 crores.
4. **Omkareshwar Project** : The Omkareshwar Project is situated near Omkareshwar jyotirling in the downstream of Indira Sagar Project. The work on Omkareshwar dam & River bed power house 520 MW (8x65 MW) was completed in November 2007. After completion of canal network, the project will irrigate 1.47 lakhs hactare of land in Khargone,

Dhar & Khandwa Distt. The estimated cost of the project is 2921.54 crores.

5. **Maheshwar Project** : The Maheshwar Hydel Project 400 MW located about 40 km downstream of Omkareshwar multi-purpose project on main Narmada river near Mandleshwar town in Khargone district of Madhya Pradesh. Maheshwar is last dam on river Narmada within the boundary of Madhya Pradesh. 8.12 MAF of water will be released to Gujarat. The work is being carried out by Sri Maheshwar Hydel Power Corporation Limited. .
6. **Sardar Sarovar Project** : Sardar Sarovar Dam is situated in Kevadia of Narmada district of Gujarat. The Main dam has been constructed up to Full Reservoir level 138.68 m. This project generates 1200 MW (6x200 MW), Hydro Power from River Bed Power House and 250 MW (5x50 MW) from Canal Head Power House. Total power being generated from Sardar Sarovar Project (1450 MW), has been distributed to three states, i.e 57% to Madhya Pradesh, 27% to Maharashtra & 16% to Gujarat, as per Narmada Water Disputes Tribunal award. The estimated approved cost of the project on price level 2008-09 is 39240.45 Crores.