

# Peninsular Rivers Systems

Complete Indian Geography Course - UPSC CSE - GS

ABOUT ME

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- 6+ YEARS TEACHING EXPERIENCE
- TAUGHT 20,000+ STUDENTS
- 100+ ASPIRING TEACHERS MENTORED



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## Peninsular Drainage:

- ❖ The Peninsular drainage system is older than the [Himalayan one](#).
- ❖ This is evident from the broad, largely-graded shallow valleys, and the maturity of the rivers
- ❖ The Western Ghats running close to the western coast act as the water divide between the major Peninsular Rivers, discharging their water in the Bay of Bengal and as small rivulets joining the Arabian Sea.
- ❖ Most of the major Peninsular rivers except Narmada and Tapi flow from west to east.
- ❖ The Chambal, the Sind, the Betwa, the Ken, the Son, originating in the northern part of the Peninsula belong to the Ganga river system.

## East Flowing Peninsular Rivers

1. • Mahanadi River
2. • Godavari River
3. • Krishna River
4. • Kaveri (Cauvery) River
5. • Pennar River
5. • Subarnarekha River

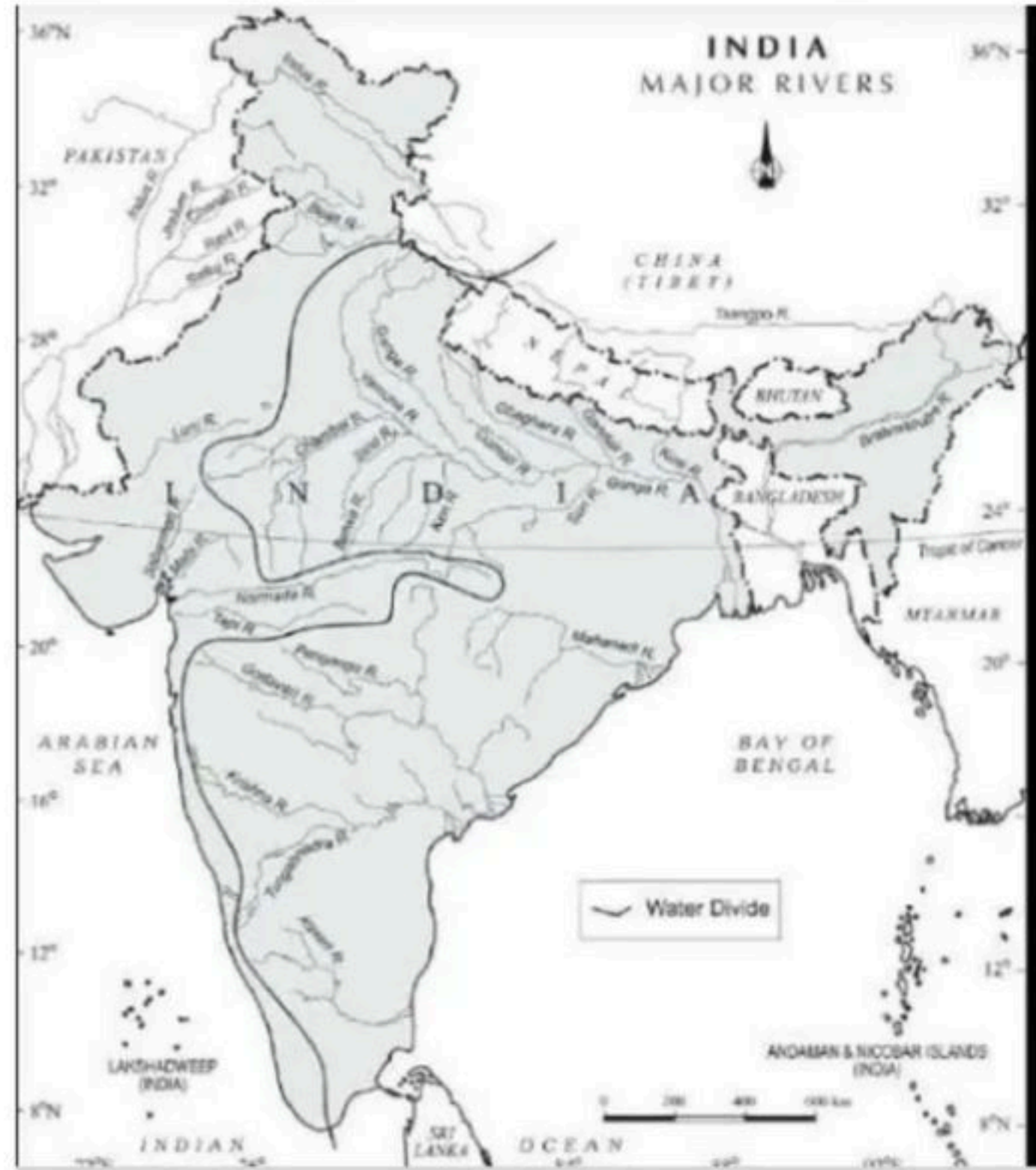
6. • Brahmani River
7. • Sarada River
8. • Ponnaiyar River
9. • Vaigai River



## The Evolution of Peninsular Drainage System:

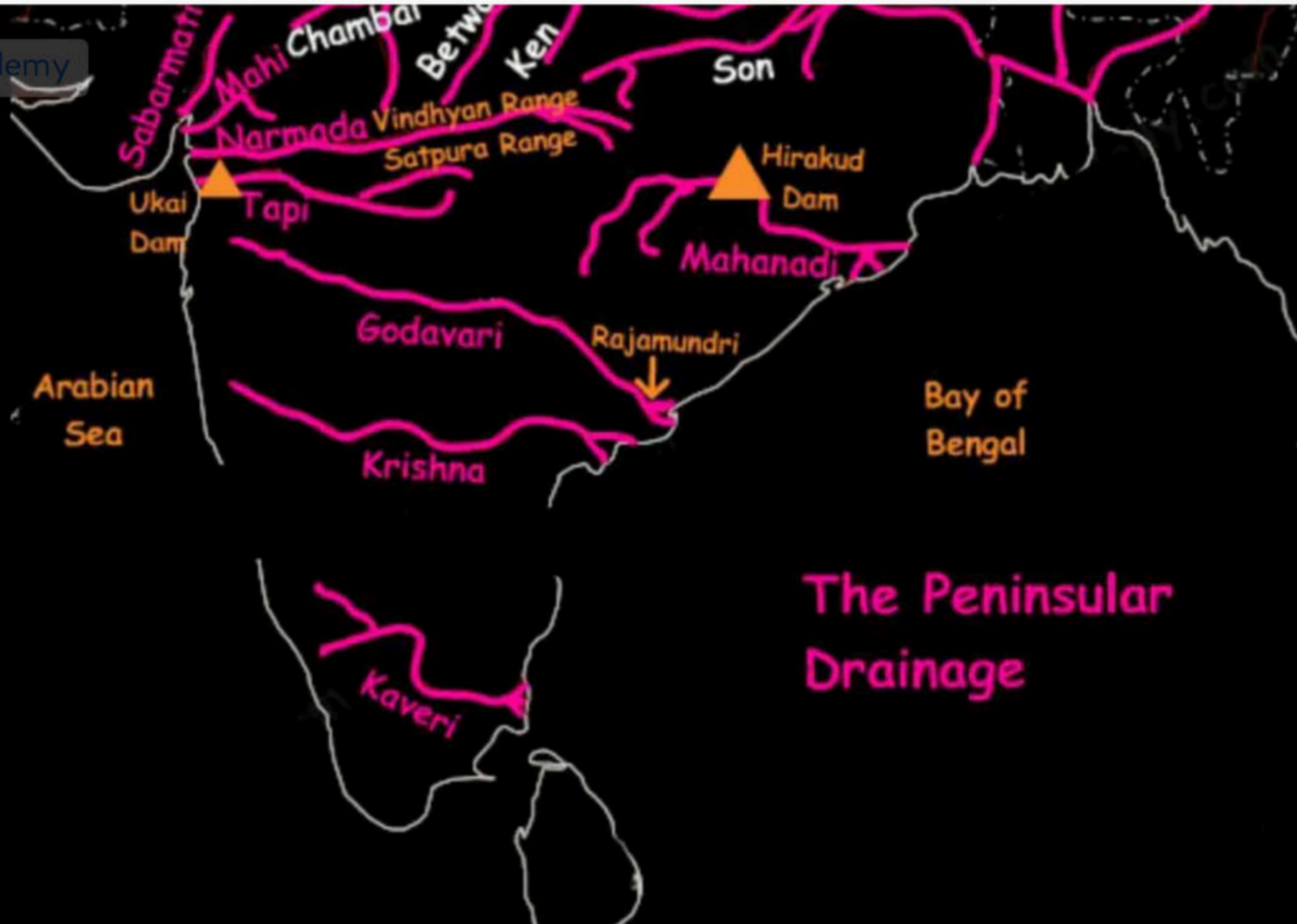
**Three major geological events in the distant past have shaped the present drainage systems of Peninsular India:**

(i) Subsidence of the western flank of the Peninsula leading to its submergence below the sea during the early tertiary period. Generally, it has disturbed the symmetrical plan of the river on either side of the original watershed.



(ii) The upheaval of the Himalayas when the northern flank of the peninsular block was subjected to subsidence and the consequent trough faulting. The Narmada and The Tapi flow in trough faults and fill the original cracks with their detritus materials. Hence, there is a lack of alluvial and deltaic deposits in these rivers.

(iii) Slight tilting of the Peninsular block from northwest to the southeastern direction gave orientation to the entire drainage system towards the Bay of Bengal during the same period.



# The Peninsular Drainage

**It has three broad divisions:**

### **1. East Flowing rivers:**

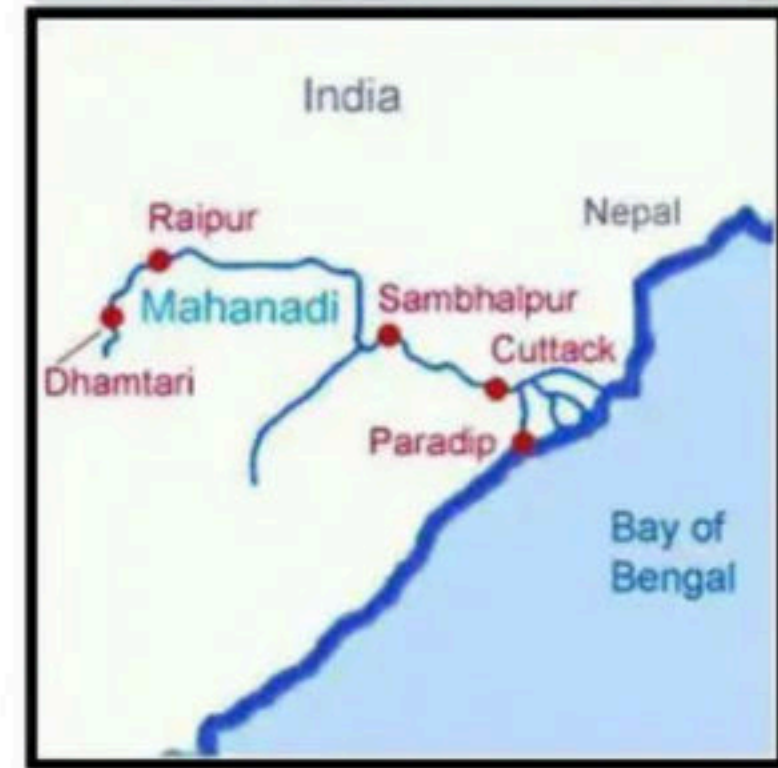
❖ Mahanadi, Subarnarekha, Godavari, Krishna, Cauvery are major Rivers of Peninsular India.

❖ While Godavari, Krishna, Cauvery originate from the Western Ghats, While Subarnarekha emerges from Ranchi plateau.

❖ They drain into the Bay of Bengal. All except Subarnarekha form Delta.

# Mahanadi River

- ⇒ The Mahanadi basin extends over states of **Chhattisgarh** and Odisha and comparatively smaller portions of **Jharkhand, Maharashtra** and Madhya Pradesh, draining an area of **1.4 lakh Sq.km.**
- ⇒ Its upper course lies in the saucer-shaped basin called the **Chhattisgarh Plain.**
- ⇒ It is bounded by the Central India hills on the north, by the Eastern Ghats on the south and east and by the **Maikal range** on the west.



## Mahanadi River:

- ❖ The Mahanadi rises near Sihawa in Raipur district of Chhattisgarh and runs through Odisha to discharge its water into the Bay of Bengal.
- ❖ It is 851 km long and its catchment area spreads over 1.42 lakh sq. km. Some inland navigation is carried on in the lower course of this river.
- ❖ Fifty-three per cent of the drainage basin of this river lies in Madhya Pradesh and Chhattisgarh, while 47 per cent lies in Odisha.



- ⇒ *The Mahanadi (Great River) has its source in the northern foothills of Dandakaranya in Raipur District of Chhattisgarh at an elevation of 442 m.*
- ⇒ *The Mahanadi is one of the major rivers of the peninsular rivers, in water potential and flood-producing capacity, it ranks second to the Godavari.*
- ⇒ *Other small streams draining directly into the Chilka Lake also forms the part of the Mahanadi basin.*
- ⇒ *The major part of the basin is covered with agricultural land.*
- ⇒ *It is one of the most-active silt-depositing streams in the Indian subcontinent.*

- ⇒ After receiving the **Seonath River**, it turns east and enters Odisha state.
- ⇒ At Sambalpur, the **Hirakud Dam** (one of the largest dams in India) on the river has formed a human-made lake 35 miles (55 km) long.
- ⇒ It enters the Odisha plains near Cuttack and enters the Bay of Bengal at False Point by **several channels**.
- ⇒ **Puri, at one of its mouths**, is a famous pilgrimage site.

## Tributaries of Mahanadi River

- *Left bank Tributaries: The Seonath, the Hasdeo, the Mand and the Ib.*

- *Right bank Tributaries: The Ong, the Tel and the Jonk.*



*Tributaries of Mahanadi River*





1.

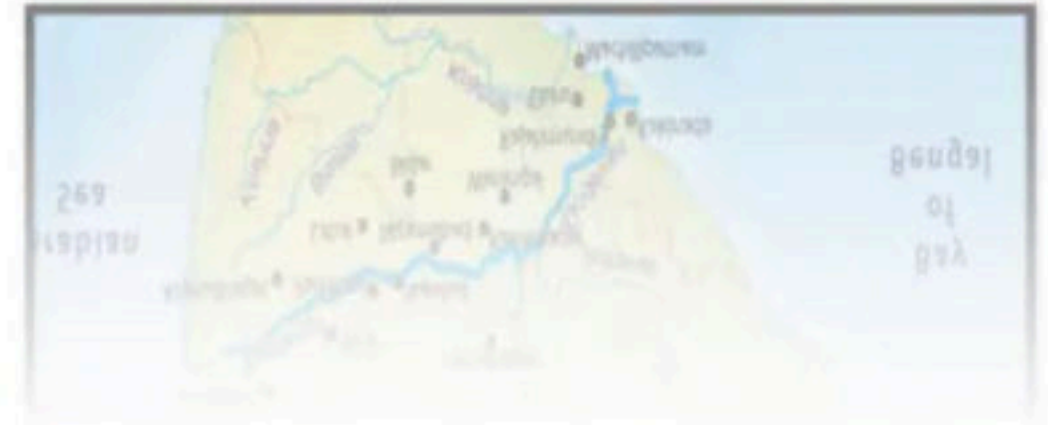
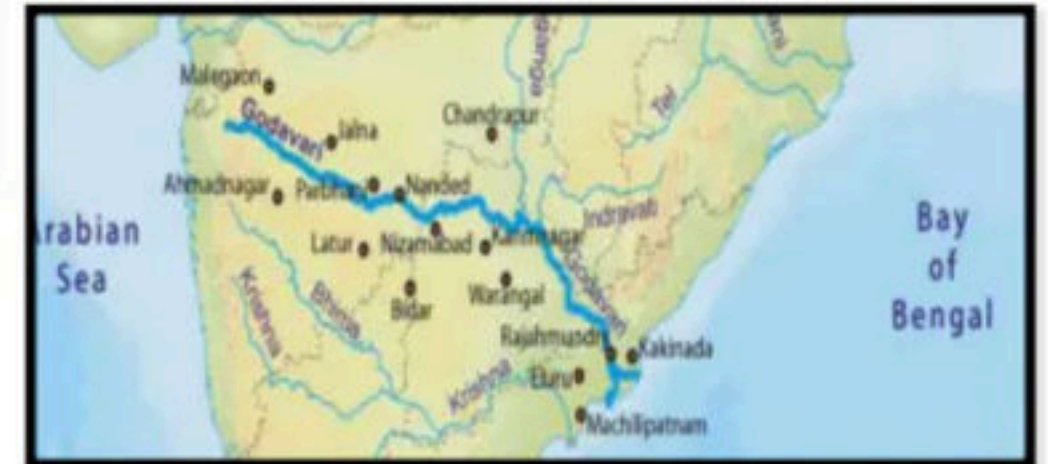
- The Godavari is the **largest river system of Peninsular India and is revered as Dakshin Ganga.**

2.

- The Godavari basin extends over states of **Maharashtra, Telangana, Andhra Pradesh, Chhattisgarh and Odisha** in addition to smaller parts in Madhya Pradesh, Karnataka and Union territory of Puducherry (Yanam) having a total area of ~ 3 lakh Sq.km.

3.

- The basin is bounded by **Satmala hills, the Ajanta range and the Mahadeo hills on the north, by the Eastern Ghats on the south and the east and by the Western Ghats on the west.**



## Godavari River:

- ❖ The Godavari is the largest peninsular river system. It is also called the Dakshin Ganga.
- ❖ It rises in the Nasik district of Maharashtra and discharges its water into the Bay of Bengal.
- ❖ Godavari tributaries run through the states of Maharashtra, Madhya Pradesh, Chhattisgarh, Odisha and Andhra Pradesh.
- ❖ It is navigable only in the deltaic stretch. The river after Rajamundri splits into several branches forming a large delta.

6.

- The Godavari River rises from **Trimbakeshwar in the Nashik district** of Maharashtra about 80 km from the Arabian Sea at an elevation of 1,067 m.

7.

- **The total length of Godavari from its origin to outfall into the Bay of Bengal is 1,465 km.**

## Tributaries of Godavari River

- The left bank tributaries are more in number and **larger** in size than the right bank tributaries.

- The **Manjra** (724 km) is the only important right bank tributary. It joins the Godavari after passing through the **Nizam Sagar reservoir**.

- Left Bank Tributaries: **Dharna, Penganga, Wainganga, Wardha, Pranahita** (conveying the combined waters of Penganga, the Wardha and Wainganga), **Pench, Kanha, Sabari, Indravati etc.**

- Right Bank Tributaries: *Pravara, Mula, Manjra, Peddavagu, Maner etc.*

- Below Rajahmundry, the river divides itself into two main streams, the *Gautami Godavari* on the east and the *Vashishta Godavari* on the west and forms a large delta before it pours into the Bay of Bengal.

- The delta of the Godavari is of the *lobate type* with a round bulge and many distributaries.

*Tributaries of Godavari River*



# Industry in Godavari Basin

1.

- The major urban centres in the basin are **Nagpur, Aurangabad, Nashik, Rajahmundry.**

2.

- **Nashik and Aurangabad** have a large number of industries especially the **automobiles.**

3.

- Other than this, the industries in the basin are mostly based on **agricultural products** such as rice milling, cotton spinning and weaving, **sugar and oil extraction.**

4.

- **Cement and some small engineering industries** also **exist in the basin.**



## Floods and Droughts in Godavari Basin

1.

• Godavari basin faces flooding problem in its lower reaches.

2.

• The coastal areas are cyclone-prone.

3.

• The delta areas face drainage congestion due to flat topography.

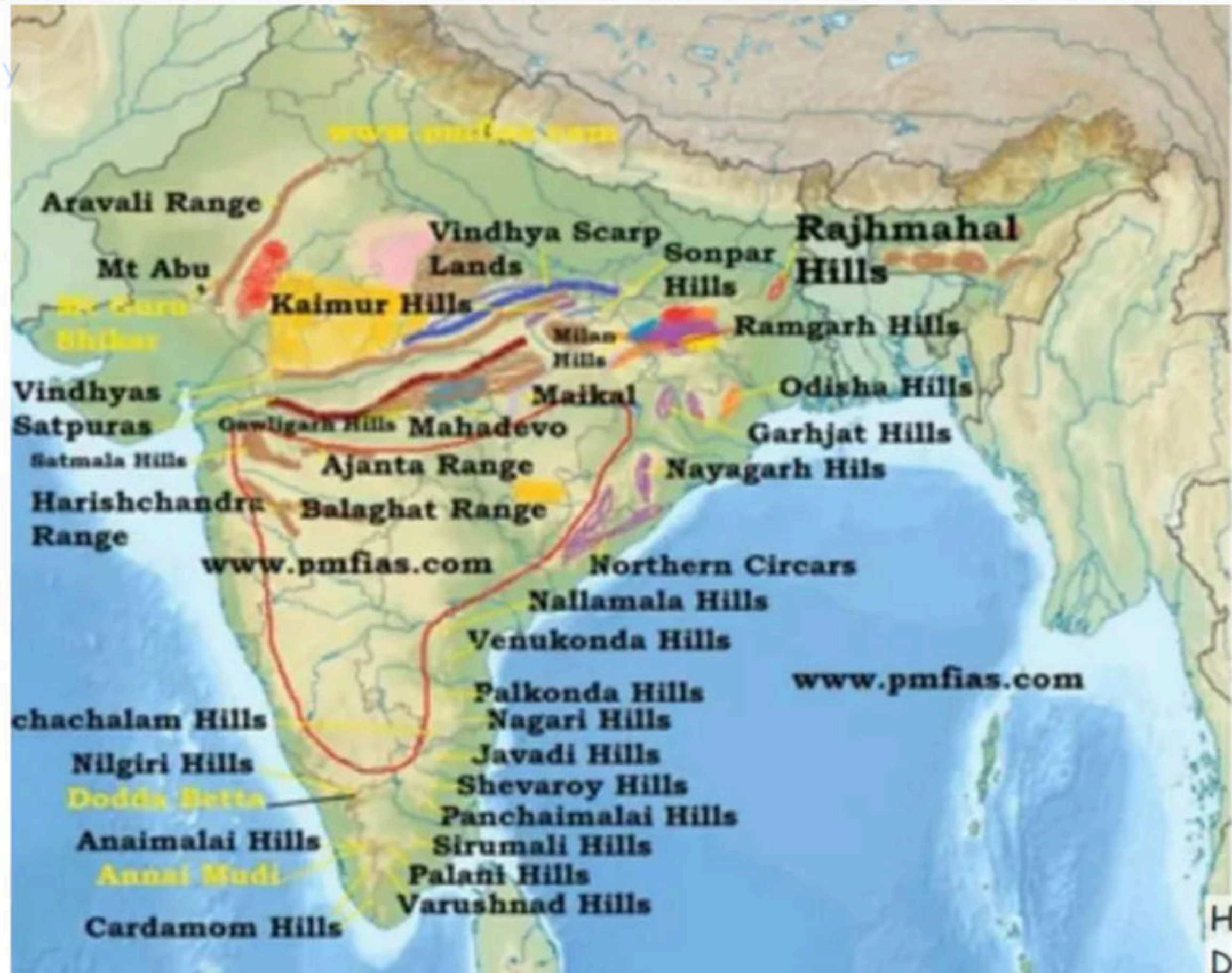
4.

• A large portion of Maharashtra falling (Marathwada) in the basin is drought prone.

## Godavari River:

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- ❖ It is 1,465 km long with a catchment area spreading over 3.13 lakh sq km 49 per cent of this, lies in Maharashtra, 20 per cent in Madhya Pradesh and Chhattisgarh, and the rest in Andhra Pradesh.
- ❖ The Penganga, the Indravati, the Pranhita, and the Manjra are its principal tributaries.
- ❖ The Godavari is subjected to heavy floods in its lower reaches to the south of Polavaram, where it forms a picturesque gorge.

- ⇒ The Krishna is the second largest east flowing river of **the Peninsula**.
- ⇒ The Krishna Basin extends over Maharashtra, Telangana, Andhra Pradesh, and Karnataka having a total **area of ~2.6 lakh km<sup>2</sup>**.
- ⇒ It is bounded by **Balaghat range** on the north, by the Eastern Ghats on the south and the east and by the Western Ghats on the west.





## unacademy Krishna River:

- ❖ The Krishna is the second-largest east-flowing Peninsular River which rises near Mahabaleshwar in Sahyadri. Its total length is 1,401 km.
- ❖ The Koyna, the Tungabhadra and the Bhima are its major tributaries.
- ❖ Of the total catchment area of the Krishna, 27 per cent lies in Maharashtra, 44 per cent in Karnataka and 29 per cent in Andhra Pradesh.

- ⇒ The *Krishna River* rises from the *Western Ghats* near *Jor village of Satara district of Maharashtra* at an altitude of *1,337 m* just north of *Mahabaleshwar*.
- ⇒ The total length of the river from origin to its outfall into the *Bay of Bengal* is *1,400 km*.
- ⇒ The *Krishna* forms a large delta with a shoreline of about *120 km*.
- ⇒ The *Krishna* delta appears to merge with that formed by the *Godavari* and extends about *35 km* into the sea.


## Tributaries of Krishna River



- Right bank: *the Ghatprabha, the Malprabha and the Tungabhadra.*



- Left Bank: *the Bhima, the Musi and the Munneru.*



- The *Koyna* is a small tributary but is known for *Koyna Dam*. This dam was perhaps the main cause of the devastating *earthquake* (6.4 on the richter scale) in 1967 that killed 150 people.

## unacademy Projects on Krishna River

- ✓ Important ones are the **Tungabhadra, Ghataprabha, Nagarjunasagar, Malaprabha, Bhima, Bhadra and Telugu Ganga.**
- ✓ The major Hydro Power stations in the basin are **Koyna, Tungabhadara, Sri Sailam, Nagarjuna Sagar, Almatti, Naryanpur, Bhadra.**
- ✓ Tungabhadra is a major inter-States project in the basin.





# India

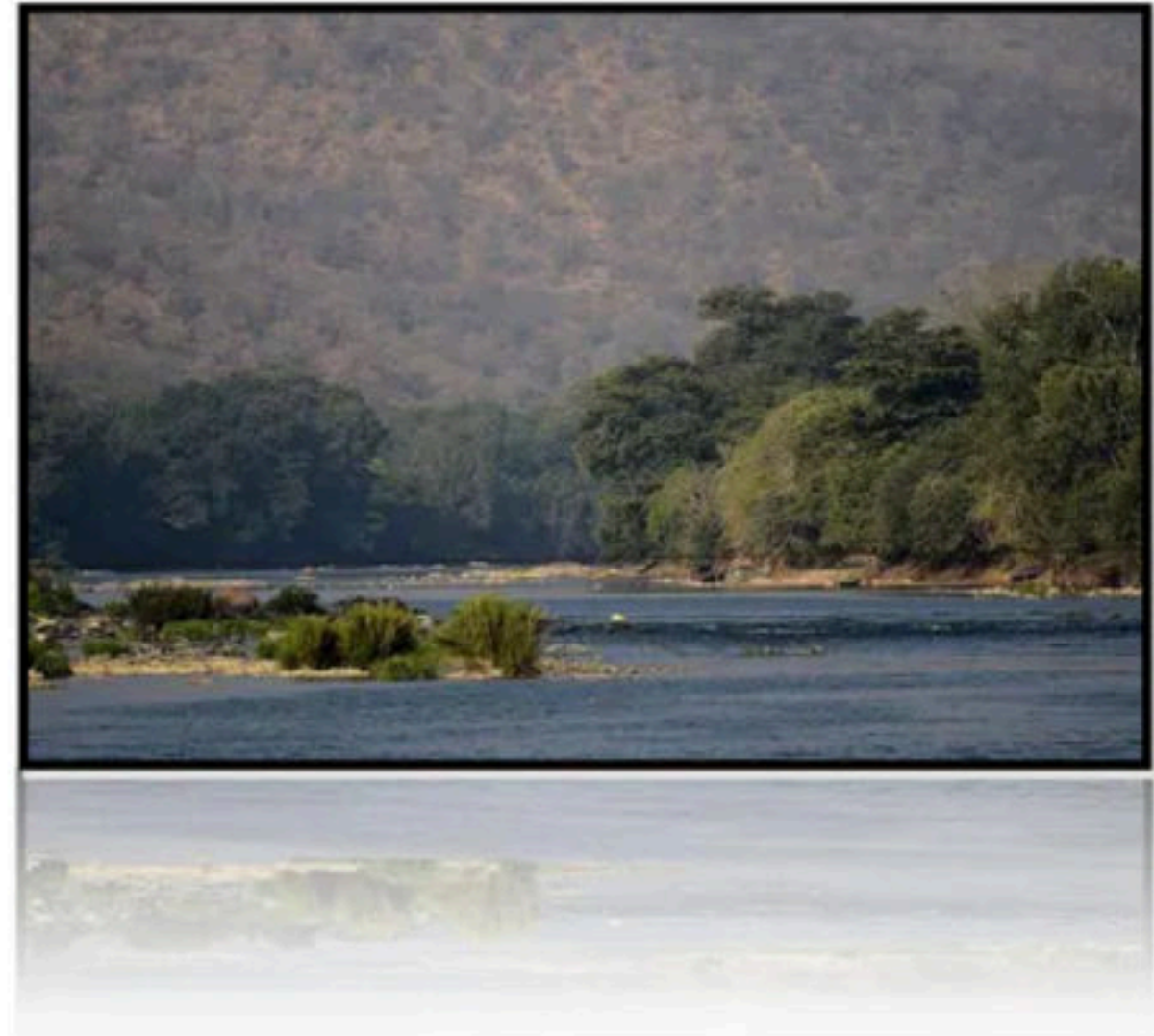


## unacademy Kaveri River:

- ❖ The Kaveri rises in Brahmagiri hills (1,341m) of Kogadu district in Karnataka.
- ❖ Its length is 800 km and it drains an area of 81,155 sq. km.
- ❖ Since the upper catchment area receives rainfall during the southwest monsoon season (summer) and the lower part during the northeast monsoon season (winter), the river carries water throughout the year with comparatively less fluctuation than the other peninsular rivers.
- ❖ About 3 per cent of the Kaveri basin falls in Kerala, 41 per cent in Karnataka and 56 per cent in Tamil Nadu.
- ❖ Its important tributaries are the Kabini, the Bhavani and the Amravati.
- ❖ The Baitarni, the Brahmani, the Vamsadhara, the Penner, the Palar and the Vaigai are other east flowing important rivers.

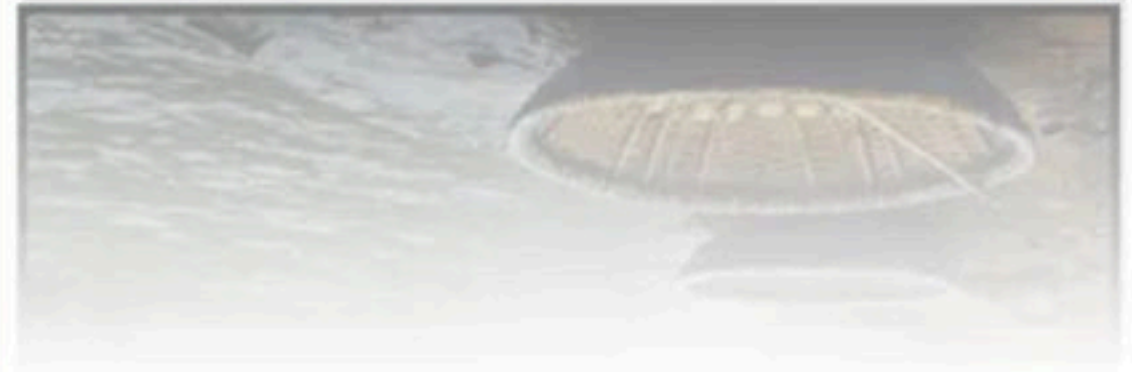
## Cauvery River

- ✓ The Kaveri (Cauvery) is designated as the Dakshin Ganga or the Ganga of the South.
- ✓ **The** Godavari is known as Dakshin Ganga for its size and Kaveri is also sometimes referred to as Dakshin Ganga because of its spiritual significance. But if you have to choose only one among these then Godavari is **the Dakshin Ganga or the Ganga of the South.**



- ✓ *The Cauvery River rises at an elevation of 1,341 m at **Talakaveri** on the **Brahmagiri range, Kodagu (Coorg) district of Karnataka.***
- ✓ *The Cauvery basin extends over states of **Tamil Nadu, Karnataka, Kerala and Union Territory of Puducherry** draining an area of 81 thousand km<sup>2</sup>.*
- ✓ *It is bounded by the Western Ghats on the west, by the Eastern Ghats on the east and the south and by the ridges separating it from Krishna basin and Pennar basin on the north.*

- ✓ The **Nilgiris**, an offshoot of Western Ghats, extend Eastwards to the Eastern Ghats and divide the basin into two natural regions, i.e., Karnataka plateau in the North and the **Tamil Nadu plateau in the South**.
- ✓ Physiographically, the basin can be divided into three parts – the **Western Ghats, the Plateau of Mysore and the Delta**.



- The delta area is the most fertile tract in the basin. The principal soil types found in the basin are black soils, red **soils**, **laterites**, **alluvial soils**, **forest soils** and **mixed soils**.
- **Red soils** occupy large areas in the basin. Alluvial soils are found in the delta areas.
- The basin in Karnataka receives rainfall mainly from the S-W Monsoon and partially from **N-E Monsoon**.
- The basin in Tamil Nadu receives good flows from the **North-East Monsoon**.

- Its upper **catchment area receives** rainfall during summer by the south-west monsoon and the lower catchment area during the winter season by the retreating north-east monsoon.
- It is, therefore, **almost a perennial river** with comparatively fewer fluctuations in flow and is **very useful for irrigation** and hydroelectric power generation.
- Thus, the Cauvery is **one of the best-regulated rivers**, and most of its irrigation and power production potential already stands harnessed.

## Tributaries of the Cauvery River

- ✓ Left Bank: the **Harangi**, the **Hemavati**, the **Shimsha** and the **Arkavati**.
- ✓ Right Bank: **Lakshmantirtha**, the **Kabbani**, the **Suvarnavati**, the **Bhavani**, the **Noyil** and the **Amaravati** joins from the right.
- ✓ The river descends from the South Karnataka Plateau to the Tamil Nadu Plains through the **Shivanasamudram waterfalls** (101 m high).



Tributaries of the Cauvery River

- ✓ *At Shivanasamudram, the river branches off into two parts and falls through a series of falls and rapids.*
- ✓ *The falls at this point is utilised for power generation by the power station at Shivanasamudram.*
- ✓ *The two branches of the river join after the fall and flow through a wide gorge which is known as Mekedatu (Goats leap) (Mekedatu falls is here).*
- ✓ *At Hogennekkal Falls, it takes Southerly direction and enters the Mettur Reservoir.*

## Industry in Cauvery Basin

1.

- The city of Bangalore is situated just outside this basin.

2.

- Important industries in the basin include the **cotton textile industry in Coimbatore and Mysore**, cemen factories in Coimbatore and Trichinapally and industries based on mineral and metals.

3.

- The Salem steel plant and many engineering industries in Coimbatore and Trichinapally are also situated in this basin.

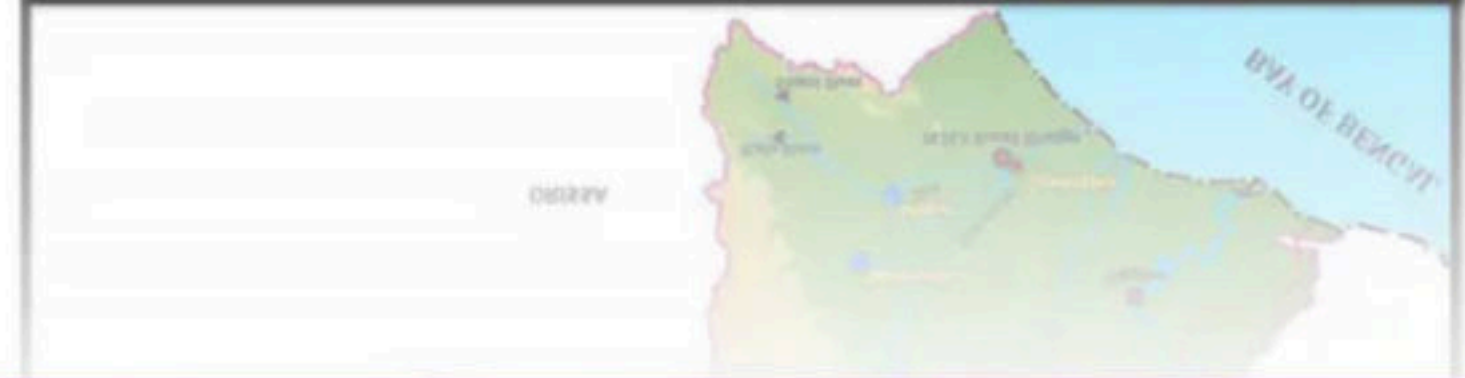
# CAUVERY BASIN





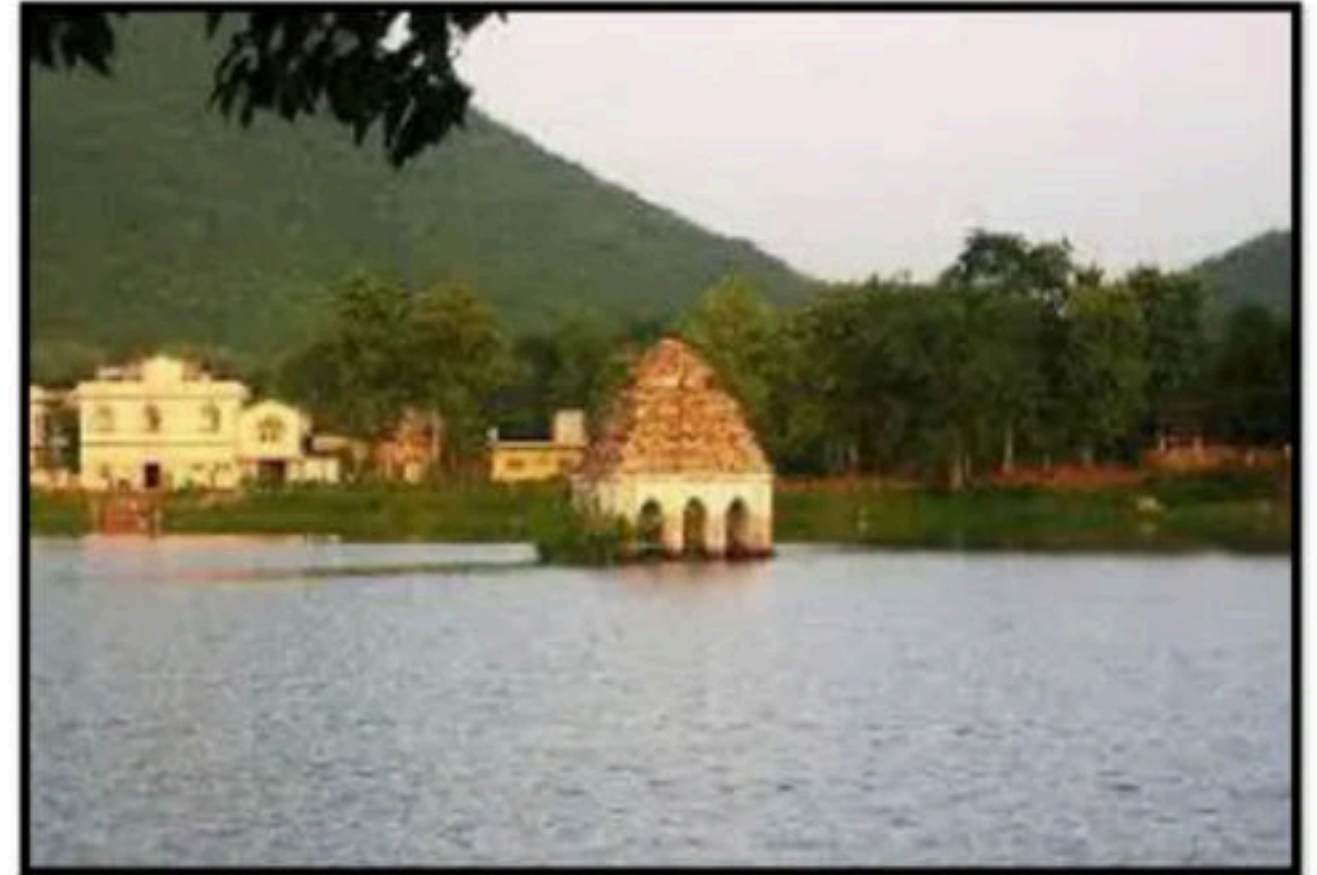
## Subarnarekha

- The Subarnarekha originates from the **Ranchi Plateau in Jharkhand** forming the boundary between West Bengal and Odisha in its lower course.
- It joins the Bay of Bengal forming an **estuary between the Ganga and Mahanadi deltas.**
- Its total length is **395 km.**



## Brahmani River

- ⇒ The Brahmani river comes into existence by the confluence of **the Koel** and the **Sankh rivers** near **Rourkela**. It has a total length of 800 km.
- ⇒ The basin is bounded in the North by Chhotanagpur plateau, in the West and South by the Mahanadi basin and in the **East by the Bay of Bengal**.
- ⇒ The basin flows through Jharkhand, Chhattisgarh and Orissa States and drains into the **Bay of Bengal**.



1.

- South of the Cauvery delta, there are several streams, of which the Vaigai is the longest.

2.

- The Vaigai basin is an important basin among the 12 basins lying between the Cauvery and Kanyakumari.

3.

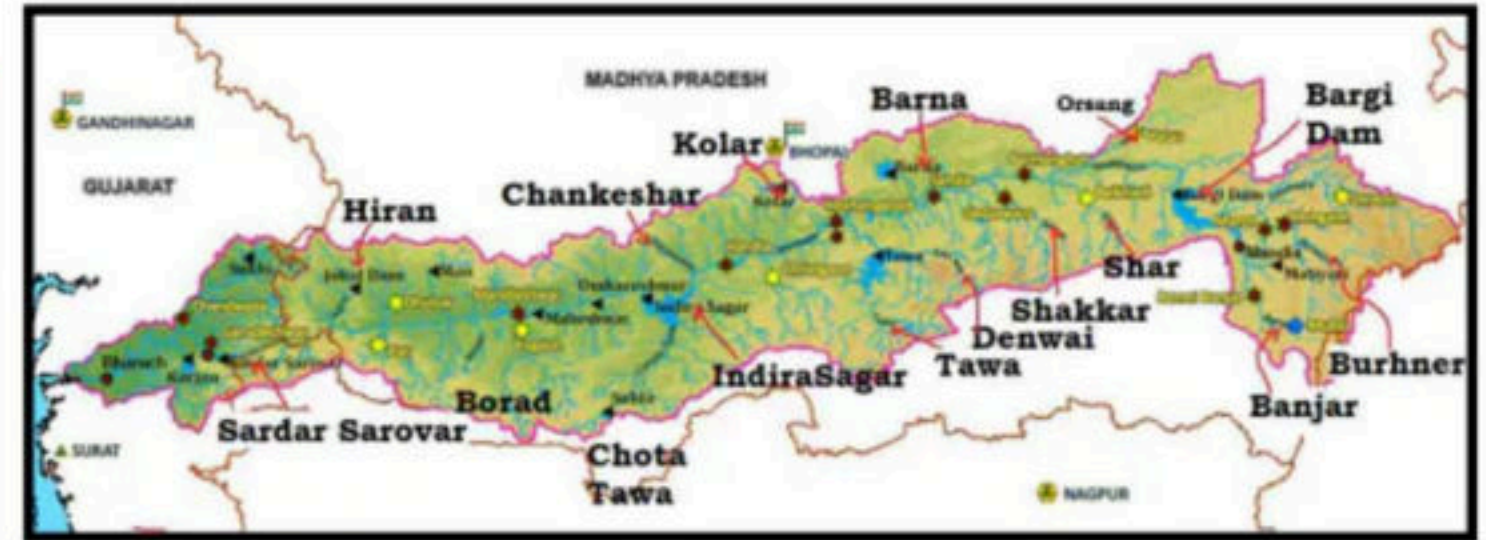
- This basin is bounded by the Varushanadu hills, the Andipatti hills, the Cardaman hills and the Palani hills on the West and by the Palk Strait and Palk Bay on the East.



**Minor  
East  
flowing  
rivers in  
Peninsu  
lar India**

## West Flowing Rivers of Peninsular India

- ⇒ The west flowing rivers of Peninsular India are fewer and smaller as compared to their **east flowing counterparts**.
- ⇒ The two major west flowing rivers are the **Narmada** and the **Tapti**.
- ⇒ This exceptional behaviour is because **these rivers didn't form valleys** and **instead, they flow through faults** (linear rift, rift valley, trough) created due to the bending of the northern peninsula during the formation process of Himalayas.



- ⇒ *These faults run parallel to the **Vindhyas and the Satpuras**.*
- ⇒ *The Sabarmati, Mahi and Luni are other rivers of Peninsular India which flow westwards.*
- ⇒ *Hundreds of small streams originating in the Western Ghats flow swiftly westwards and join the **Arabian Sea**.*
- ⇒ *Peninsular rivers which fall into the Arabian Sea **do not form deltas, but only estuaries**.*

- ⇒ This is due to the fact that the west flowing rivers, especially the Narmada and the Tapi **flow through hard rocks** and hence do not carry any good amount of silt.
- ⇒ Moreover, the **tributaries of these rivers are very small**, and hence they don't contribute any silt.
- ⇒ Hence these rivers are not able to form distributaries or a delta before they enter the **sea**.

- ⇒ *An estuary is a partially enclosed body of water along the coast where freshwater from rivers and streams meets and mixes with salt water from the ocean.*
- ⇒ *Estuaries and the lands surrounding them are places of transition from land to sea and fresh water to salt water.*



- ⇒ *Primary productivity in estuaries* is very high. Fishing is a dominant occupation around estuaries. Most of the estuaries are good *bird sanctuaries*.
- ⇒ *Although influenced by the tides, they are protected from the full force of ocean waves, winds, and storms by such landforms as barrier islands or peninsulas. (estuaries make good ports. E.g. New York Harbour is at the mouth of the Hudson River; Mormugao port in Goa at the mouth of the Zuari river and Mondovi river)*

## 2. West flowing rivers:

❖ Narmada, Tapi, Sabarmati, Mahi Rivers are major west-flowing rivers which empty into the Arabian Sea and form estuaries.


### Narmada River:

- ❖ The Narmada originates on the western flank of the Amarkantak plateau at a height of about 1,057 m.
- ❖ While flowing in a rift valley between the Satpura in the south and the Vindhyan range in the north, it forms a picturesque gorge in marble rocks and Dhuandhar waterfall near Jabalpur.
- ❖ After flowing a distance of about 1,312 km, it meets the Arabian Sea south of Bharuch, forming a broad 27 km long estuary. Its catchment area is about 98,796 sq. km.
- ❖ The Sardar Sarovar Project along with other dams has been constructed on this river under Narmada Multipurpose project.

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**Narmada River**



- The Narmada is the **largest west flowing river** of peninsular India.



- The Narmada flows westwards through a **rift valley between the Vindhyan Range on the north and the Satpura Range on the south.**



- It rises from **Maikala range near Amarkantak in Madhya Pradesh**, at an elevation of about 1057 m.



**River Narmada**

A photograph of the Narmada River at sunset or sunrise. The sun is low on the horizon, creating a bright reflection on the water's surface. The sky is a mix of blue and orange. The text 'River Narmada' is overlaid in green on the top part of the image.


# Narmada River



Source: International Rivers Network




- Narmada basin extends over states *of Madhya Pradesh, Gujarat, Maharashtra and Chhattisgarh.*




- It is bounded by the Vindhyas on the north, *Maikala range on the east*, Satpuras on the south and by the Arabian Sea on the west.




- Its total length from its source in *Amarkantak to its estuary in the Gulf of Khambhat is 1,310 km.*




- The hilly regions are in the upper part of the basin, and lower middle reaches are broad and fertile area well suited for cultivation.




- **Jabalpur** is the only important urban centre in the basin.




- The river slopes down near Jabalpur where it cascades (a small waterfall, especially one in a series) 15 m into a gorge to form the **Dhuan Dhar (Cloud of Mist) Falls**.



- Since the gorge is composed of marble, it is popularly known as the Marble Rocks.

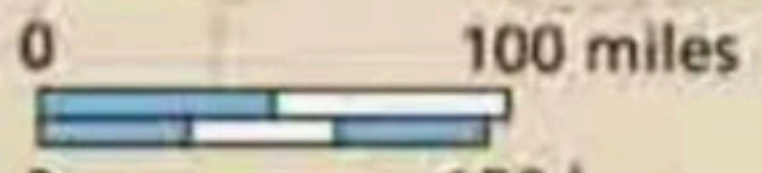
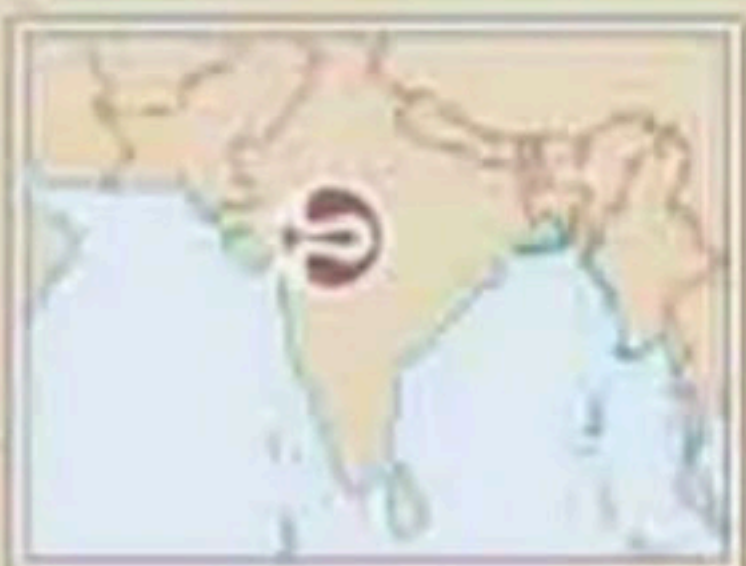


- Near Maheshwar, the river again descends from another small fall of 8 m, known as the **Sahasradhara Falls**.



- There are several islands in the estuary of the Narmada of which Aliabet is the largest.

# Narmada River



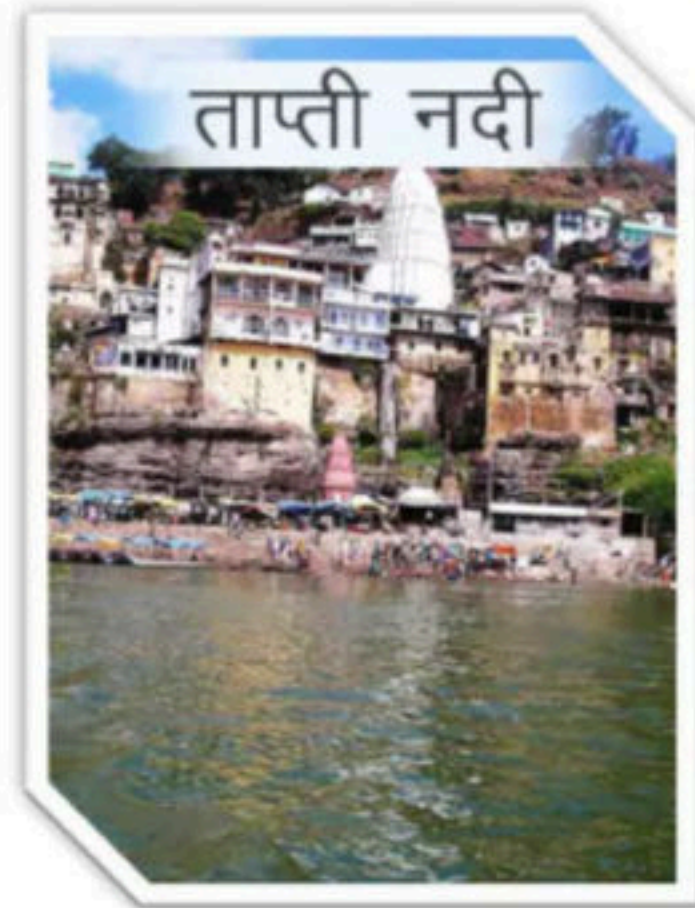
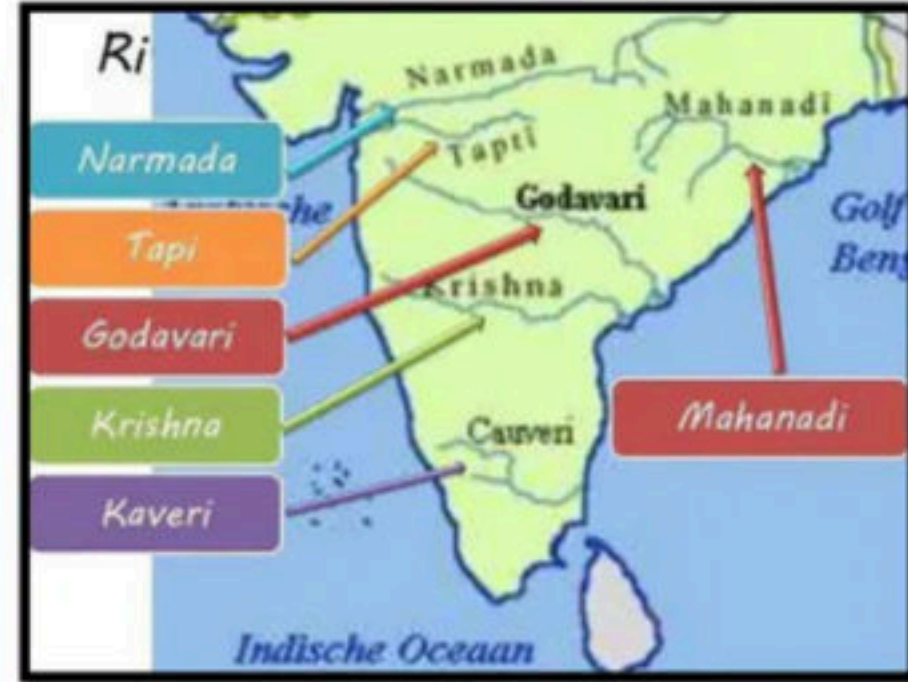
Source: International Rivers Network



- ❖ The Tapi is an important westward flowing river. It originates from Multai in the Betul district of Madhya Pradesh.
- ❖ Just like the Narmada, it flows in rift valley south of Satpura range. It is 724 km long and drains an area of 65,145 sq. km.
- ❖ Nearly 79 per cent of its basin is in Maharashtra, 15 per cent in Madhya Pradesh and the remaining 6 per cent in Gujarat.
- ❖ Sabarmati and Mahi are the two famous rivers of Gujarat. They emerge from Aravali range and flows into the Gulf of Khambhat into the Arabian Sea.

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**Tapti River**

- ⇒ The Tapti (also known as the Tapi) is the **second largest west flowing river** of Peninsular India and is known as 'the twin' or 'the handmaid' of the Narmada.
- ⇒ It originates near **Multai reserve forest in Madhya Pradesh** at an elevation of 752 m.



- ⇒ Flows for about 724 km before entering into the Arabian Sea through **the Gulf of Cambay (Gulf of Khambhat)**.
- ⇒ The Tapti River along with its tributaries flows over the plains of **Vidharbha, Khandesh** and Gujarat and large areas in the state of Maharashtra and a small area in Madhya Pradesh and Gujarat.
- ⇒ Situated in the Deccan plateau, the basin is bounded by the **Satpura range** on the north, **Mahadev hills** on the east, **Ajanta Range** and the **Satmala hills** on the south and by the Arabian Sea on the west.



- ⇒ *The hilly region of the basin is well forested while the plains are broad and **fertile areas suitable for cultivation.***
- ⇒ *There are two well defined physical regions, in the basin, viz hilly region and plains; the hilly regions comprising Satpura, **Satmalas, Mahadeo, Ajanta and Gawilgarh hills are well forested.***
- ⇒ *The plain covers the **Khandesh areas** (Khandesh is a region of central India, which forms the northwestern portion of Maharashtra state) which are broad and fertile suitable for cultivation primarily.*



Rajasthan

Uttar Pradesh

Bihar

Jharkhand

Gujarat

Madhya Pradesh

Vindhya range

Amarkantak

Satpura range

Multai

Maikal Hills

Chh.

Orissa

DD

Gulf of Khambhat

Bharuch

Surat

DN


Maharashtra

Hazira Mangrove




- ✓ The basin is roughly triangular with the Sabarmati River as the base and the source of the **Vatrak River** as the apex point.
- ✓ Sabarmati originates from **Aravalli hills** at an elevation of **762 m near village Tepur, in Udaipur district of Rajasthan.**
- ✓ The total length of the river from origin to outfall into the **Arabian Sea** is **371 km.**
- ✓ **Rainfall varies** from a meagre few mm in Saurashtra to over 100 cm in the southern part.

## Industry in Sabarmati Basin



- *Gandhinagar and Ahmedabad* are the important urban centres in the basin.



- *Ahmedabad* is an industrial city situated on the banks of *Sabarmati*.



- Important industries are textiles, leather *and leather goods*, plastic, rubber goods, paper, newsprint, automobile, machine tools, drugs and pharmaceuticals etc.



- *The industrial city of Ahmedabad poses the danger of water pollution.*

## Mahi River

- ⇒ The Mahi basin extends over states of **Madhya Pradesh, Rajasthan and Gujarat.**
- ⇒ It is bounded by **Aravalli hills** on the north and the north-west, by **Malwa Plateau** on the east, by the **Vindhyas** on the south and by the Gulf of Khambhat on the west.
- ⇒ It originates from the northern slopes of Vindhyas at an altitude of 500 m in **Dhar district of Madhya Pradesh.**



- ⇒ *The total length of Mahi is 583 km.*
- ⇒ *It drains into the Arabian Sea through the **Gulf of Khambhat**.*
- ⇒ *Hydro Power stations are located in Mahi Bajaj Sagar dam and at Kadana Dam.*
- ⇒ ***Vadodara** is the only important urban centre in the basin. There are not many industries in the basin.*

# Luni River

- The Luni or the **Salt River** (Lonari in Sanskrit) is named so because its water is brackish below Balotra.
- Luni is the only river basin of any significance in Western Rajasthan, which forms the bulk of arid zone.
- Luni originates from western slopes of the **Aravalli ranges** at an elevation of 772 m near **Ajmer** flowing in South West direction and traversing a course of 511 km in Rajasthan; it finally flows into the **Rann of Kachchh** (it gets lost in the marsh).



- ⇒ *The peculiarity of this river is that it **tends to increase its width** rather than deepening the bed because the banks are of soils, which are easily erodible whereas beds are of sand.*
- ⇒ *The **floods develop and disappear so rapidly that they have no time to scour the bed.***

## West flowing Rivers of the Sahyadris (Western Ghats)

1.

- About six hundred small streams originate from the Western Ghats and flow westwards to fall into the **Arabian Sea**.

2.

- The western slopes of the Western Ghats receive heavy rainfall from the south-west monsoons and are able to feed such a large number of streams.

3.

- Although only about 3% of the areal extent flow swiftly down the steep slope and some of them **make waterfalls**.

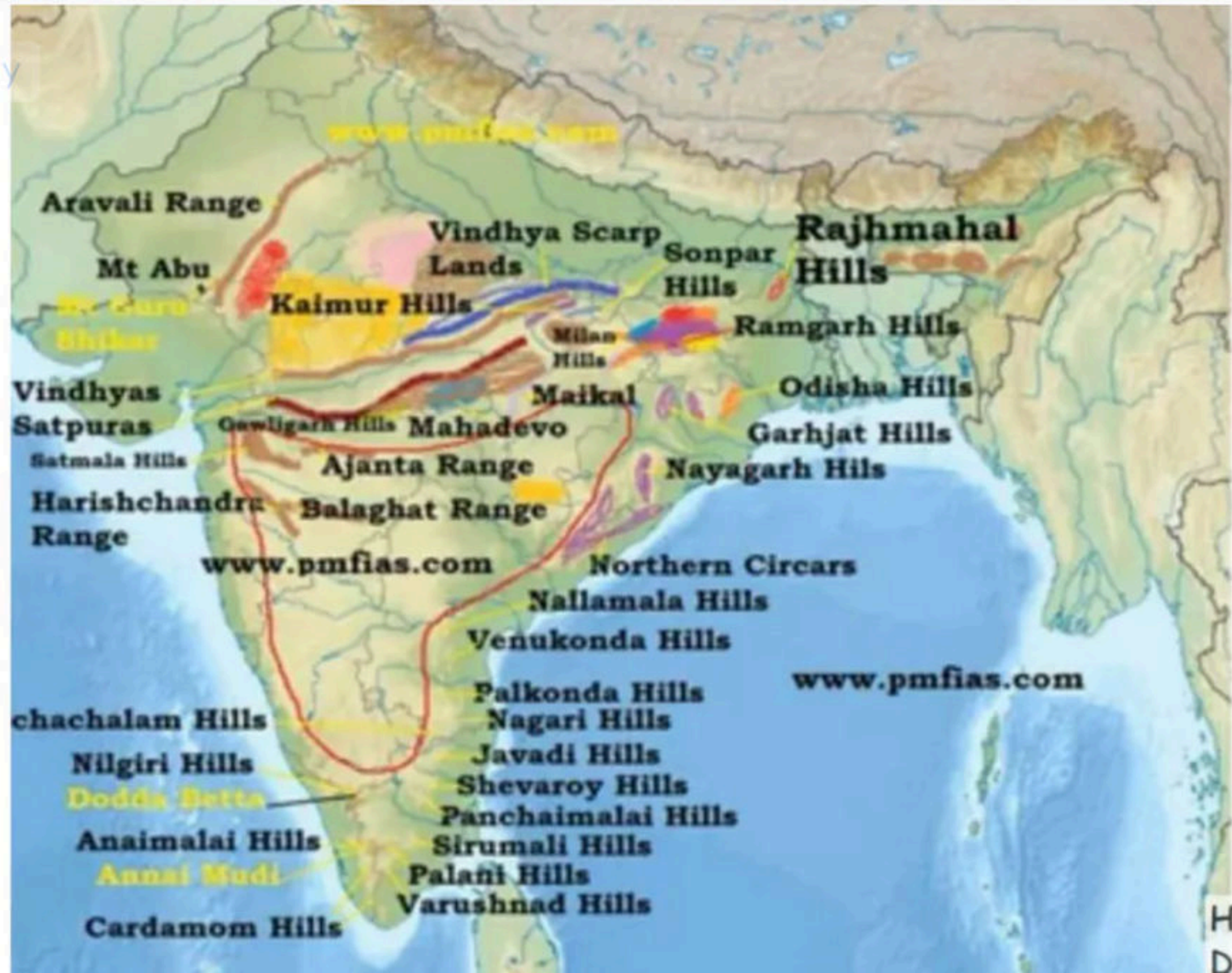
4.

- The **Jog or Gersoppa Falls** (289 m) made by the **Sharavati river** is the most famous waterfall of India.

### 3. West flowing rivers of Sahyadris:

- ❖ Hundreds of small rivers flow from the Western Ghats to Arabian sea along the west coast of India.
- ❖ They cover only a few kilometres and unable to form the Delta. These rivers are Mondovi, Zuari, Kalindi, Sharavati etc.
- ❖ Goa has two important rivers -One is Mandovi or Mahadayi and the other is Juari.
- ❖ The Shetruniji is one such river which rises near Dalkahwa in Amreli district.
- ❖ The Bhadra originates near Aniali village in Rajkot district. The Dhadhar rises near Ghantar village in Panchmahal district.

- ❖ The Vaitarna rises from the Trimbak hills in Nasik district at an elevation of 670 m.
- ❖ The Kalinadi rises from Belgaum district and falls in the Karwar Bay. The source of Bedti river lies in Hubli Dharwar and traverses a course of 161 km.
- ❖ The Sharavati is another important river in Karnataka flowing towards the west. The Sharavati originates in Shimoga district of Karnataka and drains a catchment area of 2,209 sq. km.
- ❖ Sharavati forms India's highest waterfall called Jog fall, which is used for hydroelectricity generation.



- ❖ Kerala has a narrow coastline. The longest river of Kerala, Bharathapuzha rises near Annamalai hills and flows through the Palakkad gap.
- ❖ It is also known as Ponnani. It drains an area of 5,397 sq. km.
- ❖ The Periyar is the second largest river of Kerala. Its catchment area is 5,243 sq. km. There is a marginal difference in the catchment area of the Bhartapuzha and the Periyar rivers.
- ❖ Another river in Kerala worth mentioning is the Pamba river which falls in the Vembanad lake after traversing a course of 177 km.