

UPDAAN

2025

Water Resources

Geography

Lecture - 04

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Topics

to be covered

① Rainwater Harvesting

② Map Work

③

④



Kuch nahi hua bro...



*Meri Dress Pe Mat Ja Bhai .. Mai
Ek Number Nalayak Hu.. Kuch
Nahi Revise Kiya Aj Bhi ..*

*Sara Din Bolo Hui..Hui.. Padhai
Kro Chui Mui ..*

Hanji Good Evening! Good Udaanian



**Mai Douglas Apka Class Monitor –Mai Shaitan Gali
Se Belong Karta Hu**

Question



Which of the following are the major objections raised against Dams or Multi-Purpose Projects ?

- A** They have caused floods
- B** Some dams have triggered earthquakes
- C** Multi-Purpose projects or Dams have also contributed to land degradation
- D** All of the above



Rainwater Harvesting



It has both
the benefits

Socio
-Economic

Environmental

① Due to the disadvantages
and rising resistance against
the multipurpose projects

Rainwater ↓ harvesting is a good option



↓
Kuls or Guls
(Himalayan Regions)



↳ Bengal → ↳ Inundation Channel / Canal



→ Johads / Khads
(Rajasthan)

RAINWATER HARVESTING –TRADITIONAL METHODS



1. In hill and mountainous regions, people built diversion channels like the 'guls' or 'kuls' of the Western Himalayas for agriculture.

2. Rooftop rainwater harvesting – commonly practised –
To store water for drinking – particularly Rajasthan

3. In the flood plains of Bengal, people developed inundation channels to irrigate their fields.
(divert the flood water)

4. In arid and semi arid regions- agricultural fields converted into rain fed storage → allowed water to stand and moisten the soil . Ex : Khadins (Jaisalmer) ; Johads (other parts- Rajasthan)

Question



Inundation Channels are commonly found in

A Semi arid areas of Rajasthan

B Floodplains of Bengal

C Both a and b

D Western Himalayas

TANKAS OF RAJASTHAN



➤ In the semi-arid and arid regions of Rajasthan, particularly in **Bikaner, Phalodi and Barmer**, almost all the houses traditionally had **underground tanks or tankas** for storing drinking water

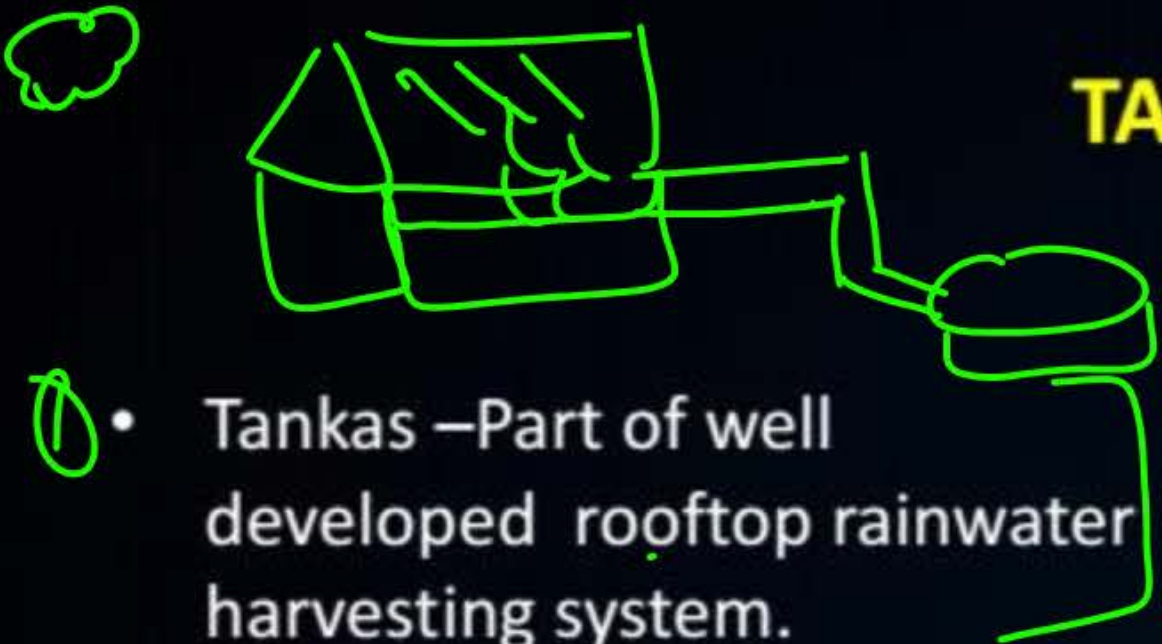


- The tanks could be as large as a big room; one household in Phalodi had a tank that was 6.1 metres deep, 4.27 metres long and 2.44 metres wide



TANKAS OF RAJASTHAN

(5 marks)



- ① • Tankas –Part of well developed rooftop rainwater harvesting system.
- ② • Built inside the main house or the courtyard – connected to the sloping roofs through a pipe.
- ③ • Rain falling on rooftop –travels through pipe and gets stored in underground tankas
- ④ • First rain shower- not collected as this would clean roof and pipes – Rainwater from next showers was collected.



TANKAS OF RAJASTHAN

- ⑤ • Rainwater can be stored in the tankas – till the next rainfall – making it the most reliable source when all other sources are dried up (in summers).



- ⑥ • Rainwater – also called **Palar Pani** – considered purest form of natural water.
- ⑦ • Many houses construct underground rooms adjoining tankas- to escape the summer heat

Question



Rainwater in Rajasthan is locally known as _____

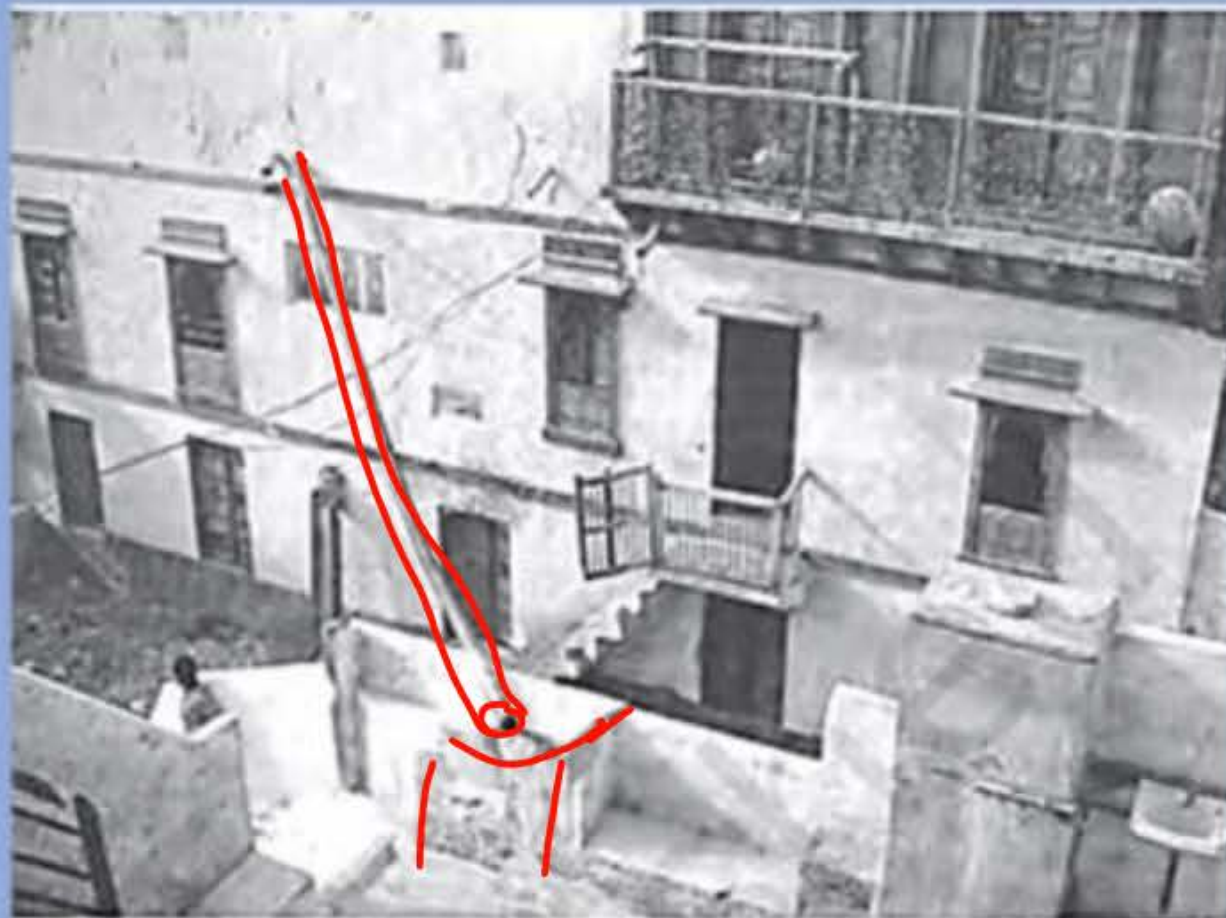
known

A Colour Pani

B Palar Pani

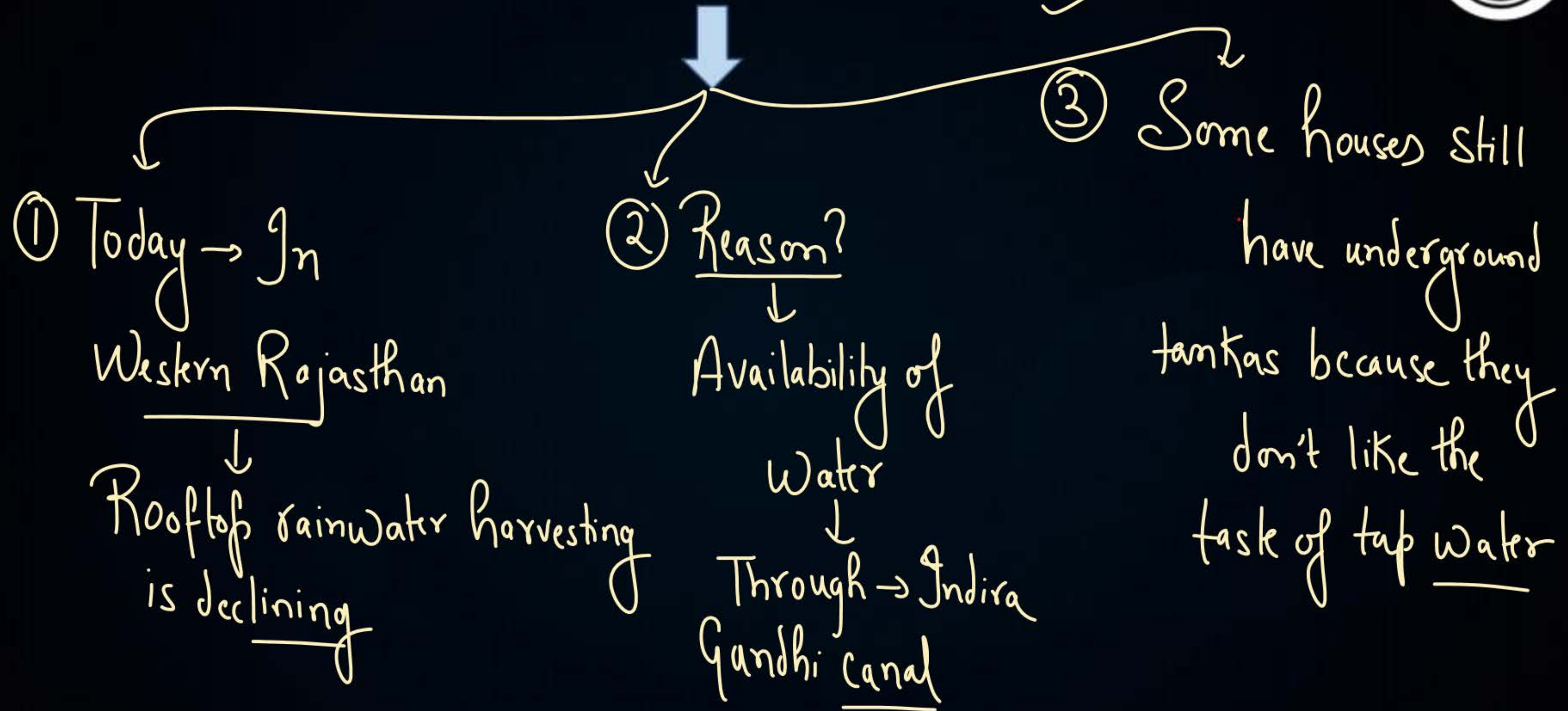
C Palam Pani

D Salar Pani



Rooftop harvesting was common across the towns and villages of the Thar. Rainwater that falls on the sloping roofs of houses is taken through a pipe into an underground *tanka* (circular holes in the ground). built in the main house or in the courtyard. The picture above shows water being taken from a neighbour's roof through a long pipe. Here the neighbour's rooftop has been used for collection of rainwater. The picture shows a hole through which rainwater flows down into an underground *tanka*.

Decline in Rainwater Harvesting - Rajasthan (2 marks)



Question



___are rain fed storage found in Jaisalmer

A Johads

B Khadins

C Tankas

D Gul or Kuls

* India → Lot of places → Adopting Rainwater
Harvesting Technique
↓
To Conserve and use Rainwater



(b) Recharge through Abandoned Dugwell

- Rooftop rainwater is collected using a PVC pipe
- Filtered using sand and bricks
- Underground pipe takes water to sump for immediate usage
- Excess water from the sump is taken to the well
- Water from the well recharges the underground
- Take water from the well (later)

Fig 3.3: Rooftop Rainwater Harvesting



Read the given passage and answer the questions given:

In Gendathur, a remote backward village in Mysuru, Karnataka, villagers have installed, in their household's rooftop, rainwater harvesting system to meet their water needs. Nearly 200 households have installed this system and the village has earned the rare distinction of being rich in rainwater. Gendathur receives an annual precipitation of 1,000 mm, and with 80 per cent of collection efficiency and of about 10 fillings, every house can collect and use about 50,000 litres of water annually. From the 200 houses, the net amount of rainwater harvested annually amounts to 1,00,000 litres.

QUESTION



What distinction has the village of Gendathur won ?

- A** Adarsh Gram
- B** Rich in Rainwater
- C** Viksit Bhujal Gram
- D** Sustainable Village

QUESTION



How many households in Gendathur have rooftop rainwater harvesting system installed ?

A 150

B 450

C 250

D 200

QUESTION



Which of the following values do the example of Gendathur present ?

- A** Sustainable Management of Water Resources
- B** Channeling The Flood Water for a better future
- C** Over water utilization of water resources
- D** Both b and c

Some Amazing Facts

Interesting Fact

Rooftop rainwater harvesting is the most common practice in Shillong, Meghalaya. It is interesting because Cherapunjee and Mawsynram situated at a distance of 55 km. from Shillong receive the highest rainfall in the world, yet the state capital Shillong faces acute shortage of water. Nearly every household in the city has a rooftop rainwater harvesting structure. Nearly 15-25 per cent of the total water requirement of the household comes from rooftop water harvesting.

Interesting Fact

Tamil Nadu is the first state in India which has made rooftop rainwater harvesting structure compulsory to all the houses across the state. There are legal provisions to punish the defaulters.

BAMBOO DRIP IRRIGATION SYSTEM

In Meghalaya, a 200-year-old system of tapping stream and spring water by using bamboo pipes, is prevalent. About 18-20 litres of water enters the bamboo pipe system, gets transported over hundreds of metres, and finally reduces to 20-80 drops per minute at the site of the plant.



Picture 1: Bamboo pipes are used to divert perennial springs on the hilltops to the lower reaches by gravity.



Picture 2 and 3: The channel sections, made of bamboo, divert water to the plant site where it is distributed into branches, again made and laid out with different forms of bamboo pipes. The flow of water into the pipes is controlled by manipulating the pipe positions.



Picture 4: If the pipes pass a road, they are taken high above the land.



Picture 5 and 6
Reduced channel sections and diversion units are used at the last stage of water application. The last channel section enables water to be dropped near the roots of the plant.



Kuch nahi hua bro...



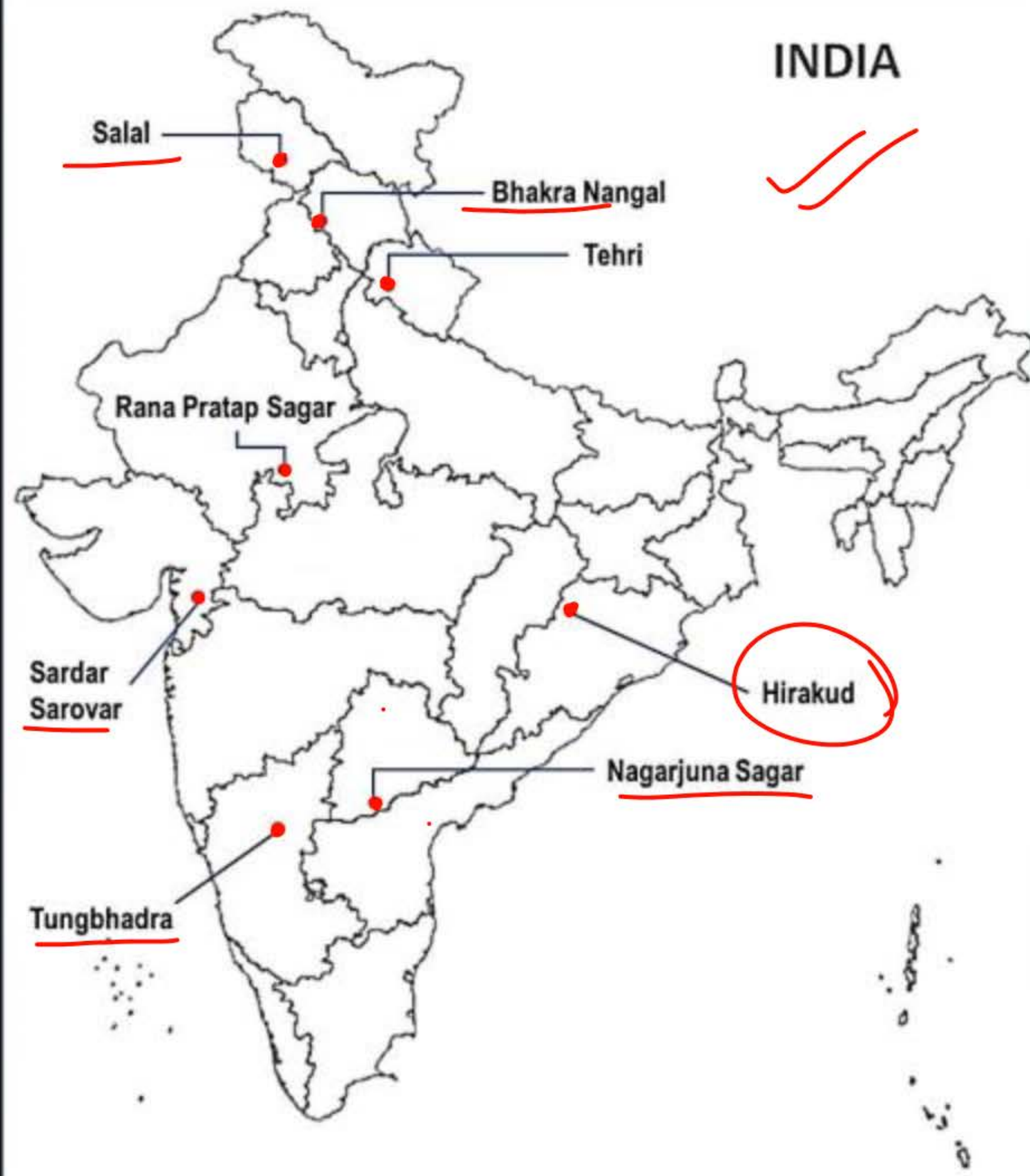
Tera Bhai Ab Map Karega

Chapter 3: Water Resources (Locating and Labelling)

Dams:

- a. Salal → J&K
- b. Bhakra Nangal
- c. Tehri
- d. Rana Pratap Sagar
- e. Sardar Sarovar ✓
- f. Hirakud ✓
- g. Nagarjuna Sagar ✓
- h. Tungabhadra ✓





An illustration of a young boy with orange hair, wearing a black graduation cap and gown, standing on a purple book. Behind him is a large green and blue globe.

Homework

↓
Practise the
map 3-4 times



THANK
YOU

