

# Water Conservation and Rainwater Harvesting



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# Jal Shakti Abhiyan



Water conservation and rainwater harvesting



Renovation of traditional and other water bodies/tanks



Reuse water and recharge structures



Watershed development



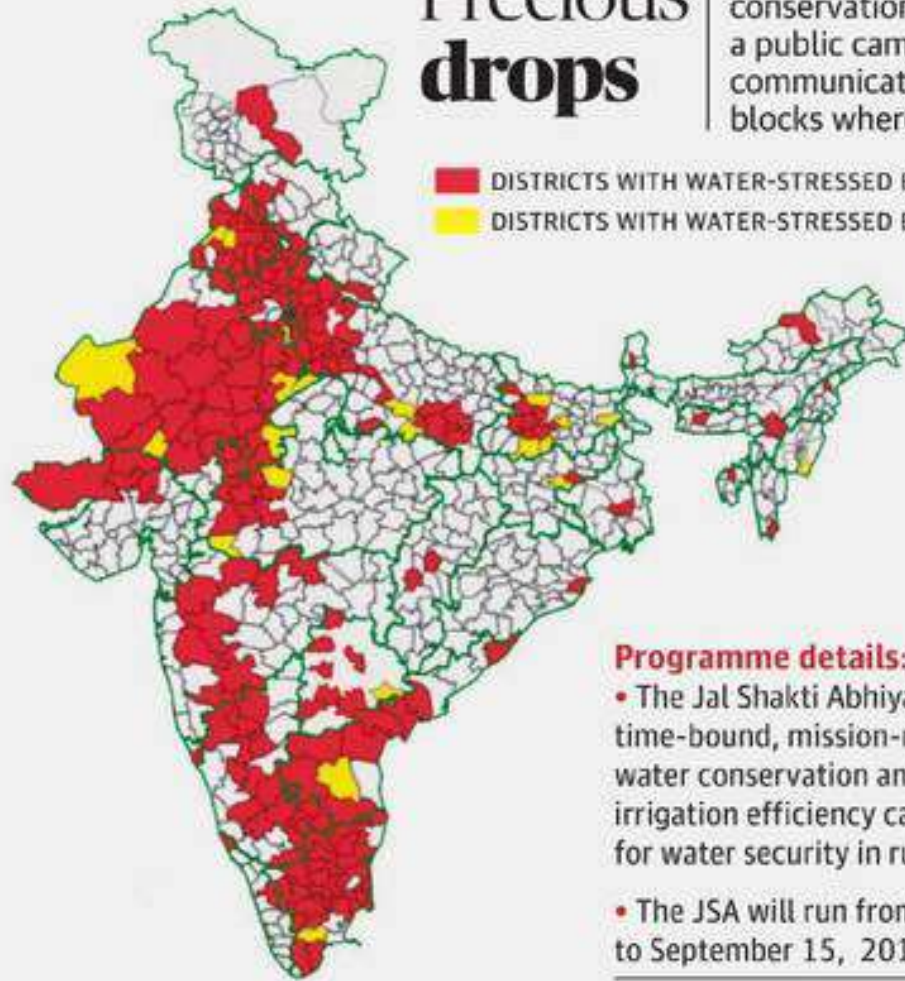
Intensive afforestation

**Focused on integrated demand and supply-side management of water at the local level, including creation of local infrastructure for source sustainability**

*Catch the rain, where it falls, when it falls*

# Precious drops

The Jal Shakti Abhiyan aims at making water conservation and promotion of irrigation efficiency a public campaign through asset creation and communication campaigns. The map shows districts/blocks where the measures will be carried out



- DISTRICTS WITH WATER-STRESSED BLOCKS (NON-ASPIRATIONAL DISTRICTS)
- DISTRICTS WITH WATER-STRESSED BLOCKS (ASPIRATIONAL DISTRICTS)

groundwater experts and scientists will work together with State and district officials in the country's water-stressed districts for water conservation, resource management and irrigation efficiency

## Programme details:

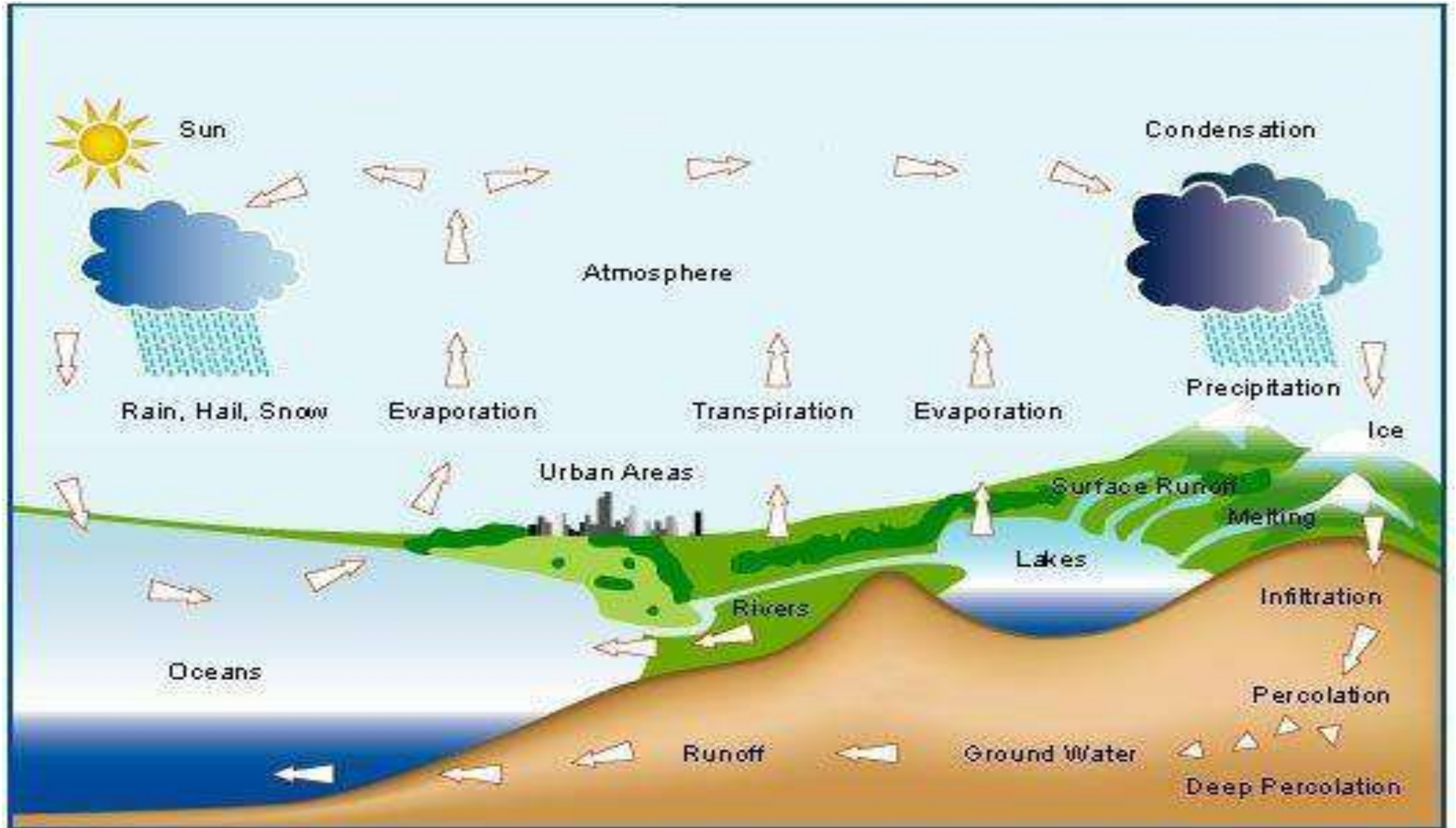
- The Jal Shakti Abhiyan is a time-bound, mission-mode water conservation and irrigation efficiency campaign for water security in rural India.
- The JSA will run from July 1 to September 15, 2019
- During this time, officers,

## Intervention areas:

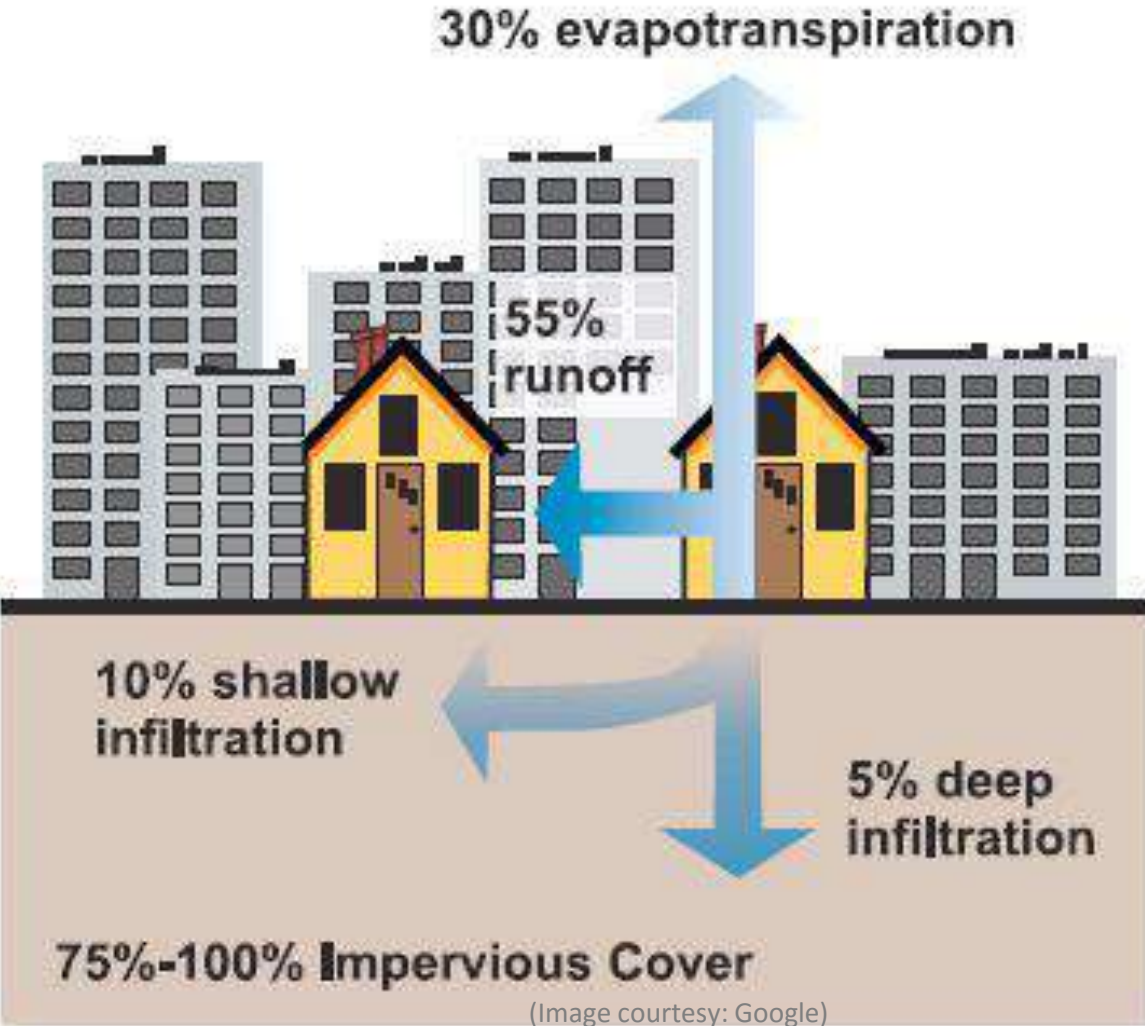
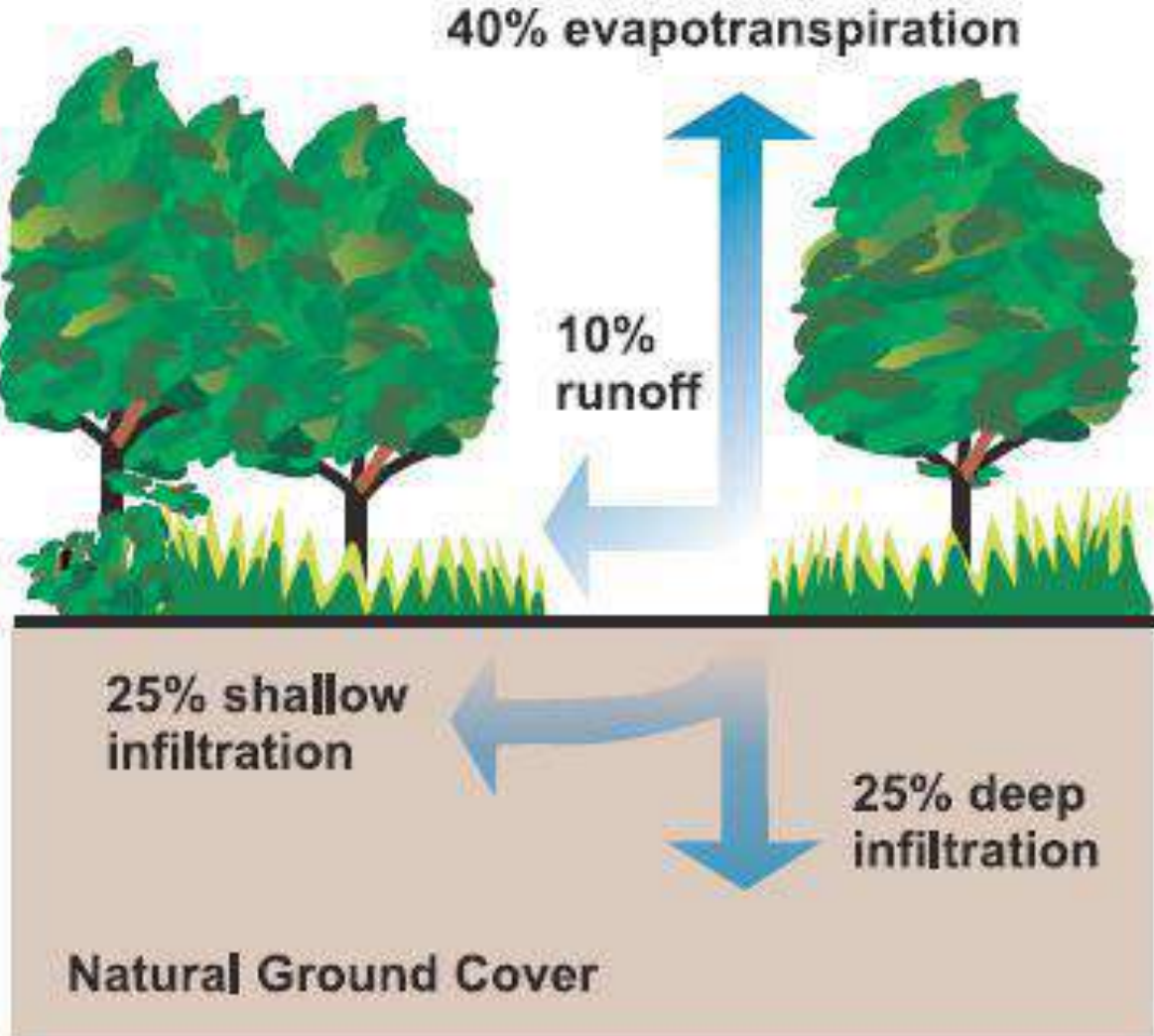
- Water conservation and rain water harvesting
- Renovation of water bodies
- Renovation of borewell recharge structures
- Watershed development
- Intensive afforestation

SOURCE: JAL SHAKTI ABHIYAN

# The Water (Hydrologic) Cycle



# Green and Blue Spaces (Recreate/Rejuvenate)





**The Problem:**  
Why water  
conservation?

**Table - 1 Per capita water availability in India**

Year	Population (Million)	Per capita water availability (m <sup>3</sup> /year)	Remarks
1951	361	5178	
1955	395	4732	
1991	846	2210	
2001	1027	1820	
2011	1211	1651	water stressed#
2015	1326*	1508 <sup>s</sup>	water stressed#
2021	1345 <sup>a</sup>	1486 <sup>s</sup>	water stressed#
2031	1463 <sup>a</sup>	1367 <sup>s</sup>	water stressed#
2041	1560 <sup>a</sup>	1282 <sup>s</sup>	water stressed#
2051	1628 <sup>a</sup>	1228 <sup>s</sup>	water stressed#

Source: Government of India, 2009 (NCIWRD Report, 1999), \*projected from 2011 census

# Population Vs Water Needs

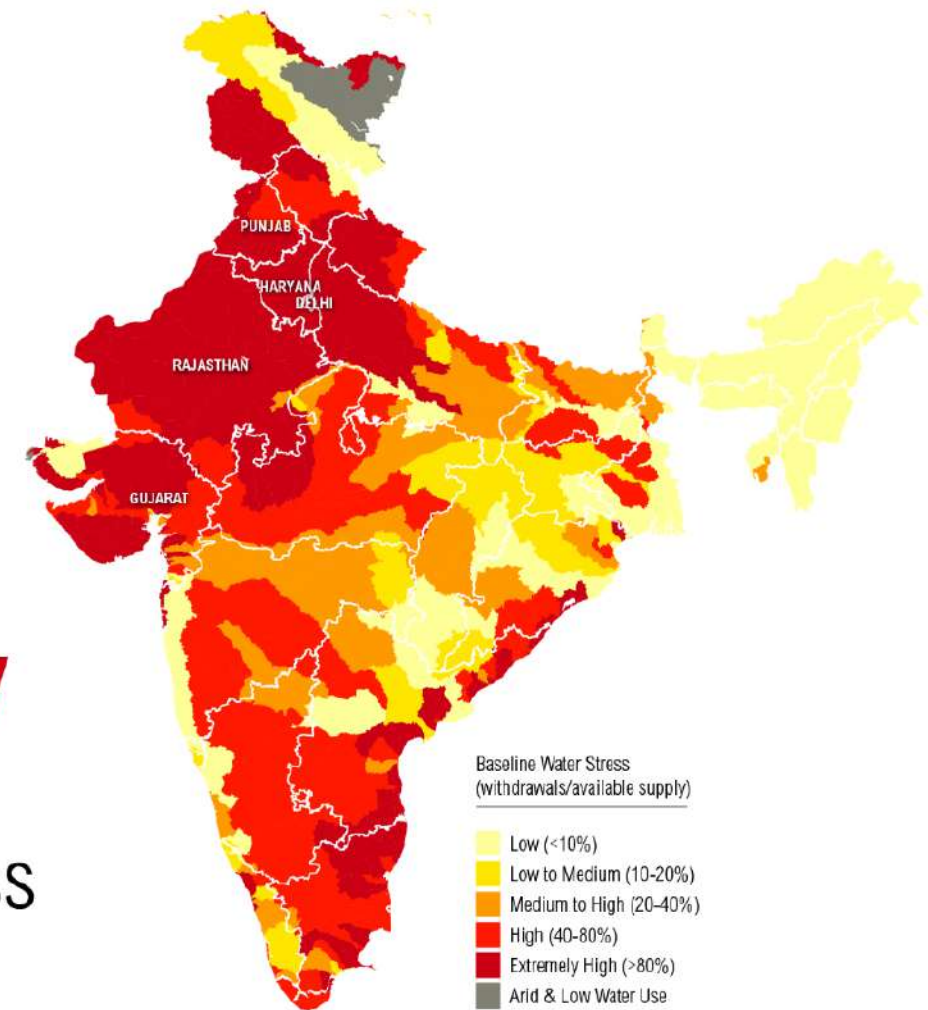


# Water Stress

Area of the country as % of world area	2.4%
Population as % of world population (Census, 2011)	17.1%
Water as % of world water	4%
Average annual rainfall (India Meteorological Dept.)	1160 mm ( world average 1110 mm)
Range of distribution	150-11690 mm
Range Rainy days	5-150 days

Source: Water Resources Information System of India

**54%**  
of India  
Faces  
**High to  
Extremely  
High**  
Water Stress



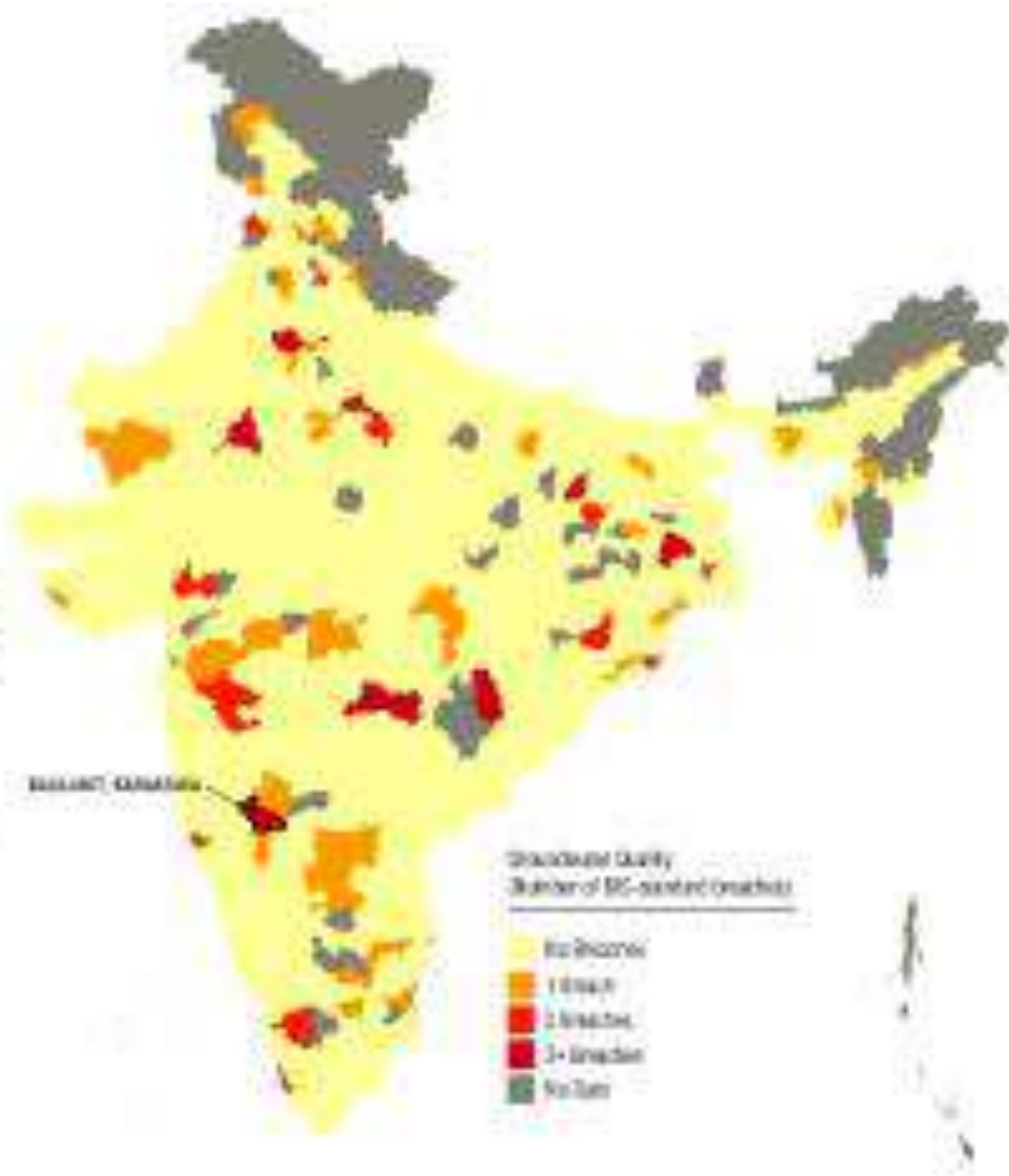
[www.indiawatertool.in](http://www.indiawatertool.in)

 WORLD RESOURCES INSTITUTE

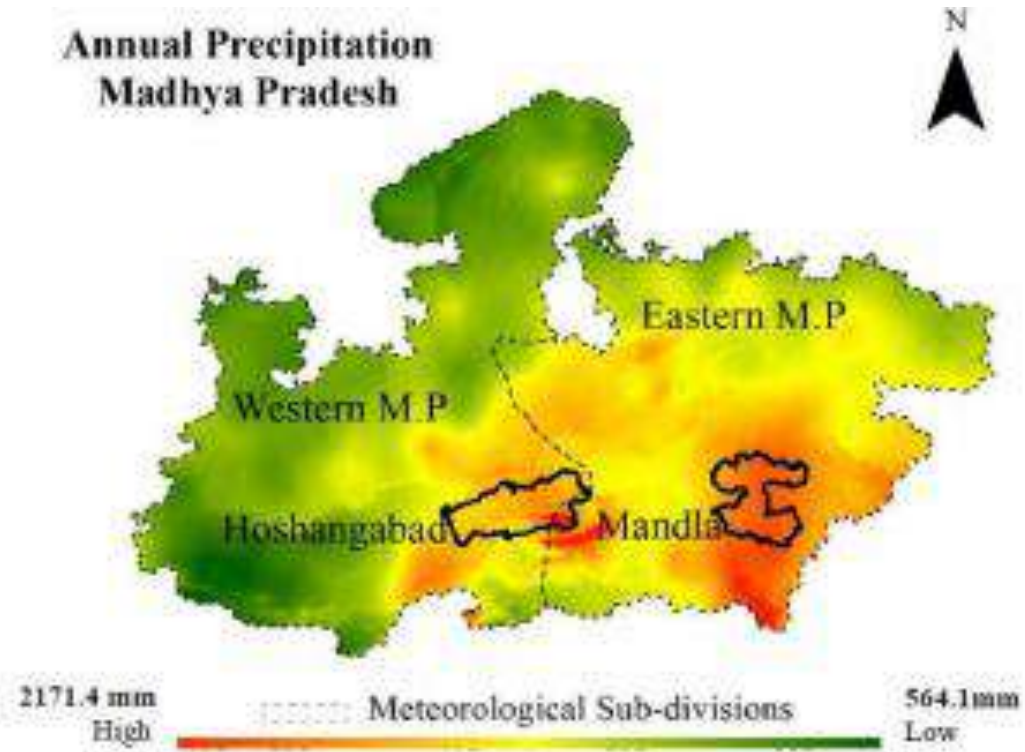
Source: World Resources Institute, 2016



More than  
**100**  
**MILLION**  
People Live  
in Areas of  
Poor Water  
Quality



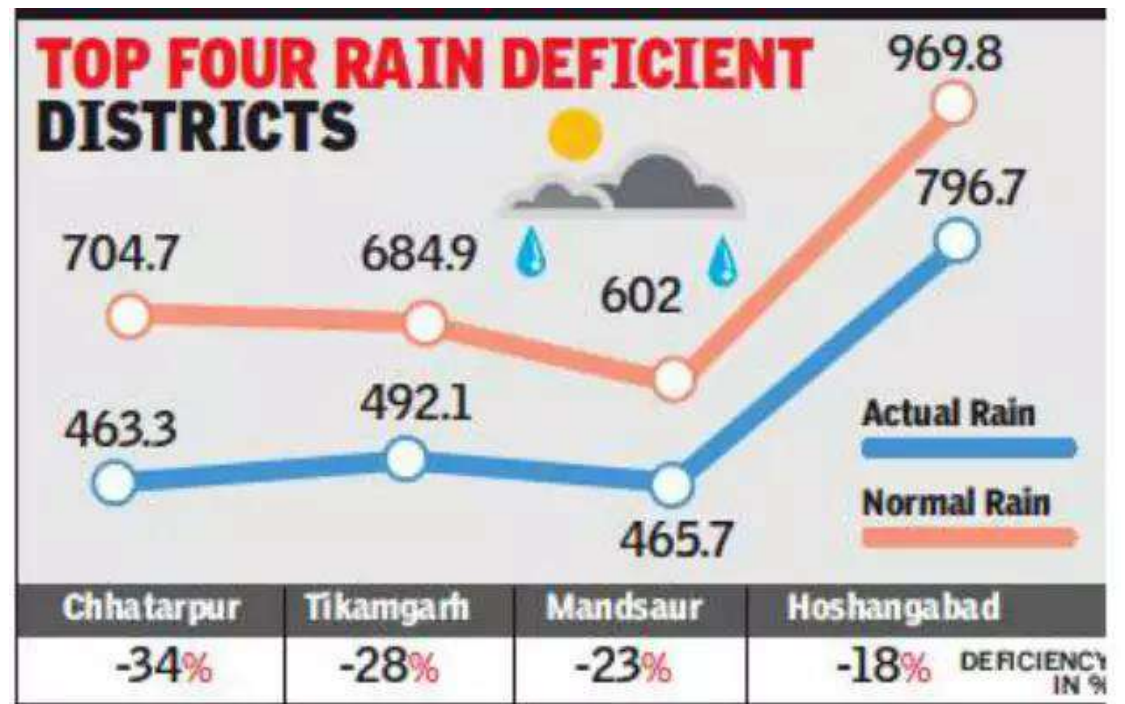
## Annual Precipitation Madhya Pradesh



## Need for more: Madhya Pradesh still short of 250mm rain quota this year

Ankur Sirothia | TNN | Aug 27, 2020, 08:20 IST

✉️ 🖨️ A- A+



<https://timesofindia.indiatimes.com/city/bhopal/need-for-more-madhya-pradesh-still-short-of-250mm-rain-quota-this-year/articleshow/77775406.cms>

# Moving out to find work

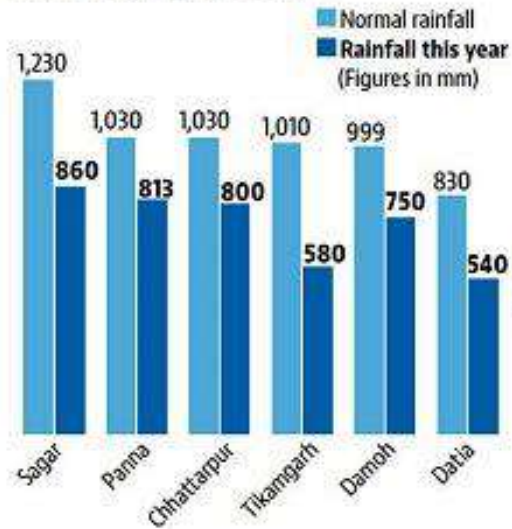
2017

People from parched Bundelkhand are forced to migrate to find ways to make ends meet

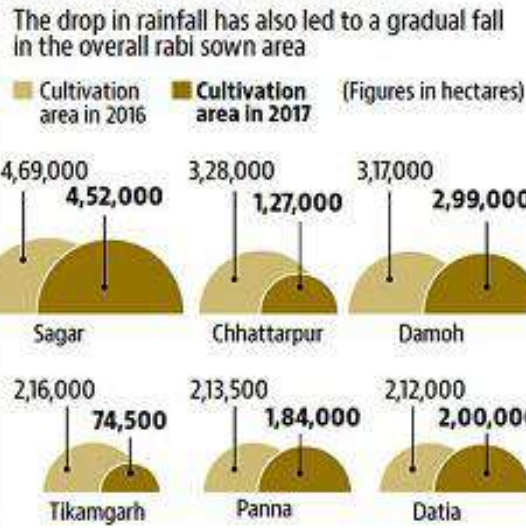


The impact of the drought on locals can be measured through migration visible at railway stations. HT

## DEFICIENT RAINFALL

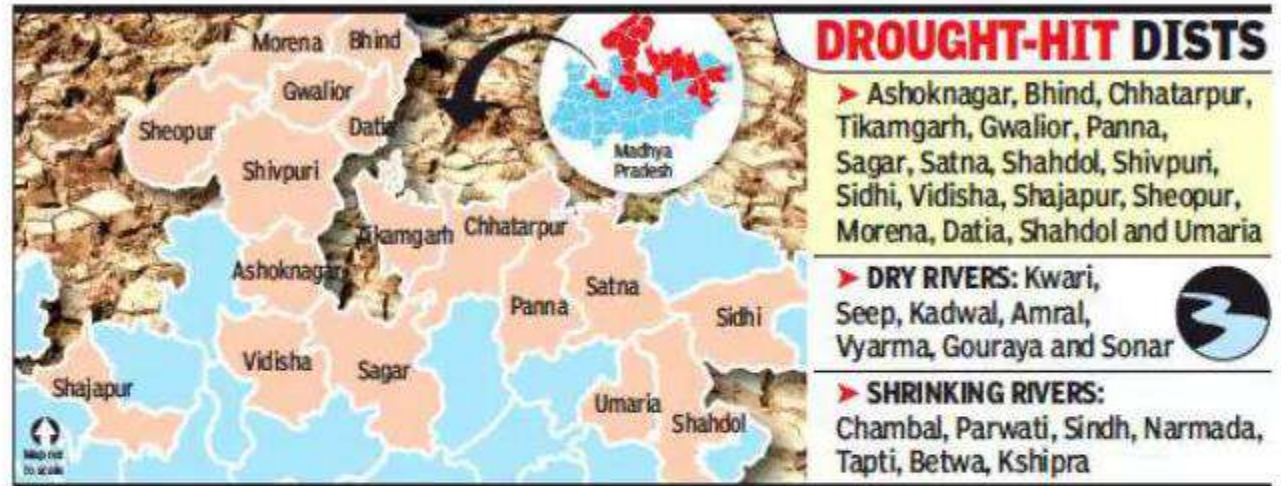
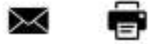


## CULTIVATION LAND SHRINKS

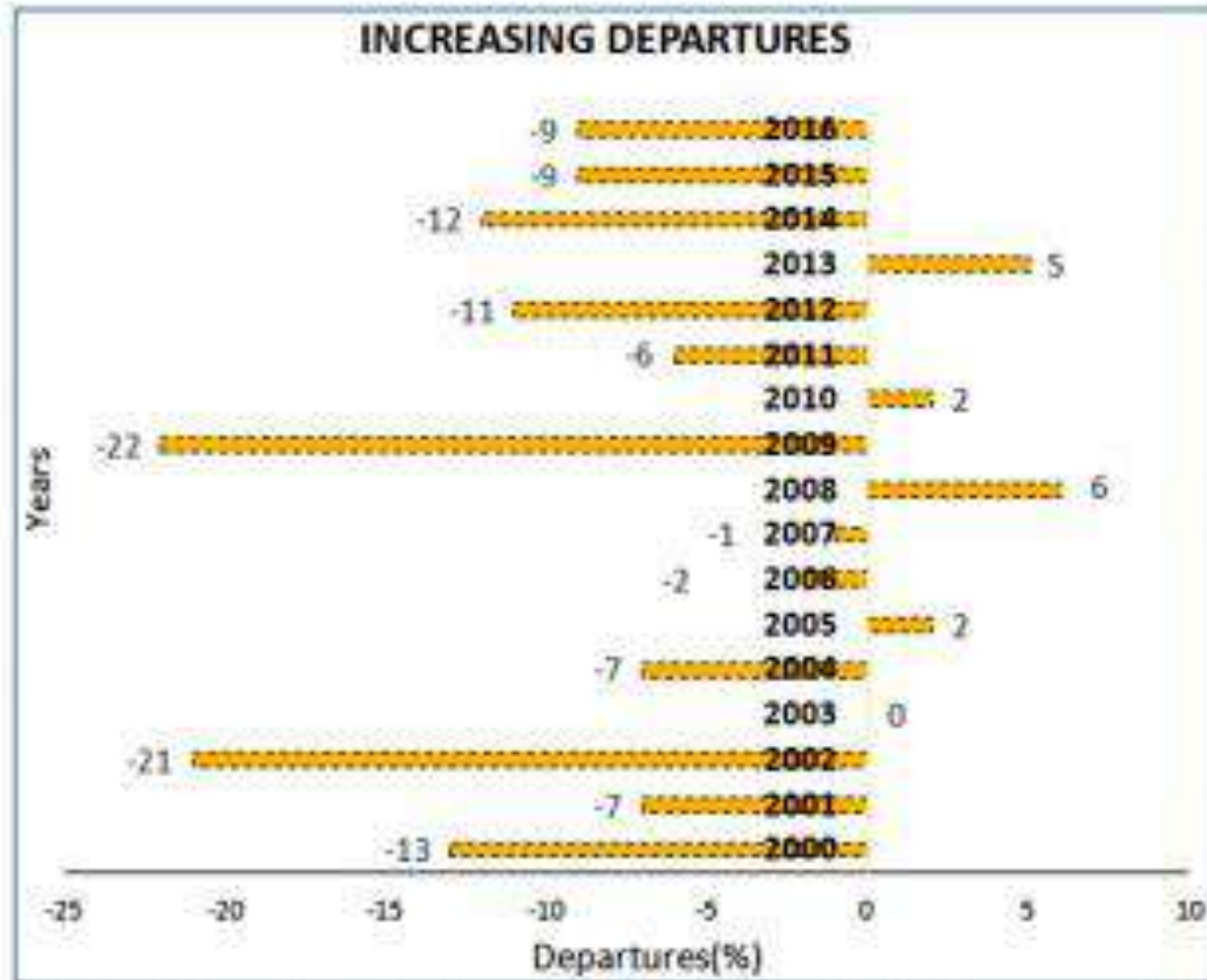


# Madhya Pradesh stares at water crisis as rivers go dry

Deshdeep Saxena | TNN | Apr 18, 2018, 10:49 IST



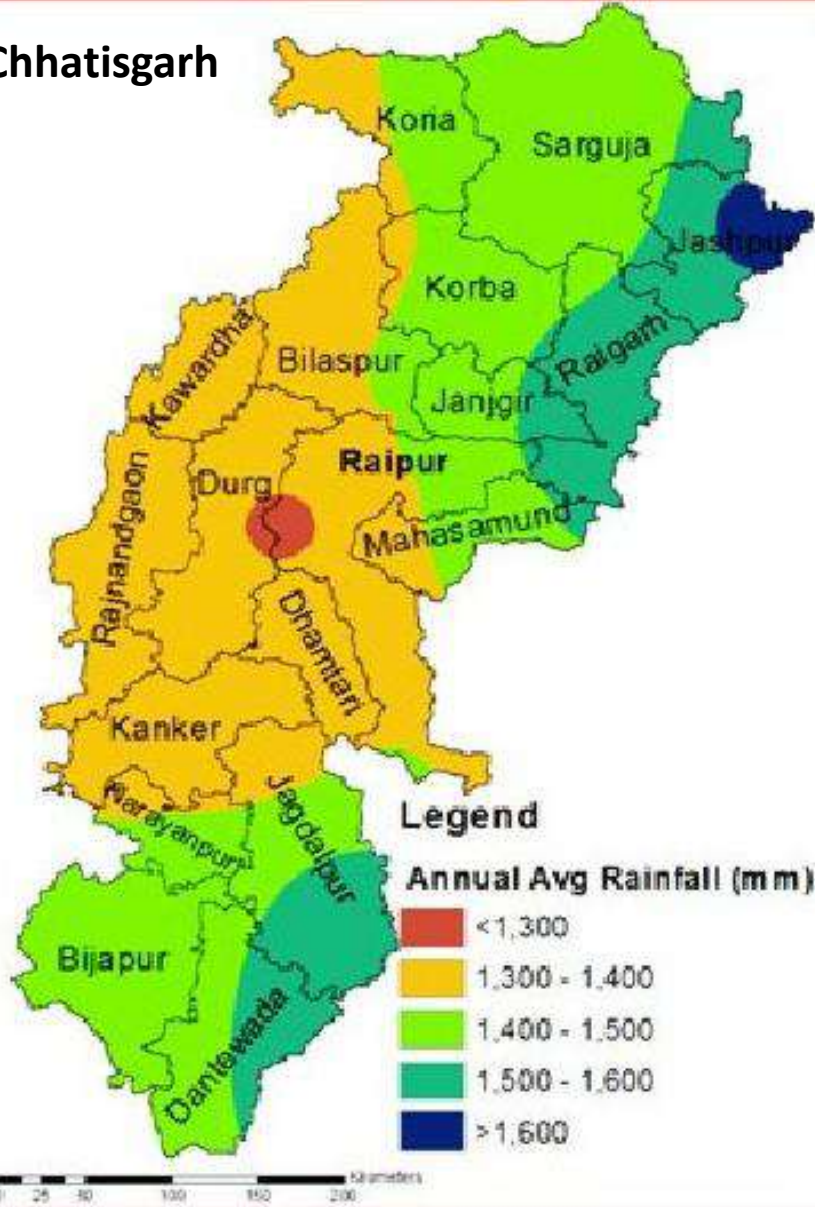
Water supply sources in 10 out of 16 municipal corporations have almost dried up. The situation is so grim that in 117 municipal bodies of the state, water is supplied once in two days and in 11 municipal bodies water is barely supplied twice a week.



[https://www.researchgate.net/publication/335542689\\_Analysing\\_long\\_term\\_seasonal\\_and\\_annual\\_trends\\_for\\_precipitation\\_and\\_temperature\\_in\\_Central\\_India/figures?lo=1](https://www.researchgate.net/publication/335542689_Analysing_long_term_seasonal_and_annual_trends_for_precipitation_and_temperature_in_Central_India/figures?lo=1)

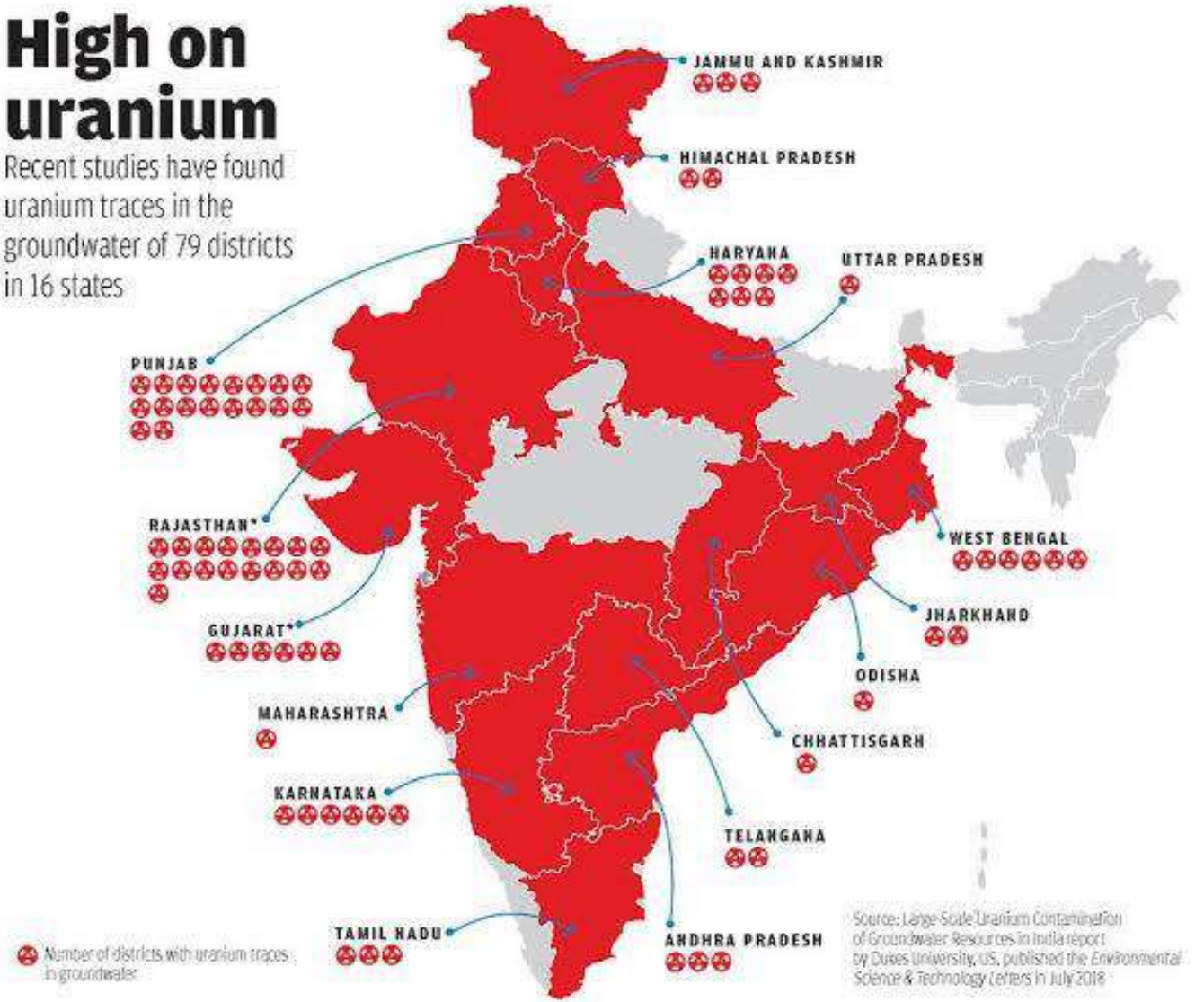
# Annual Rainfall

## Chhatisgarh



# High on uranium

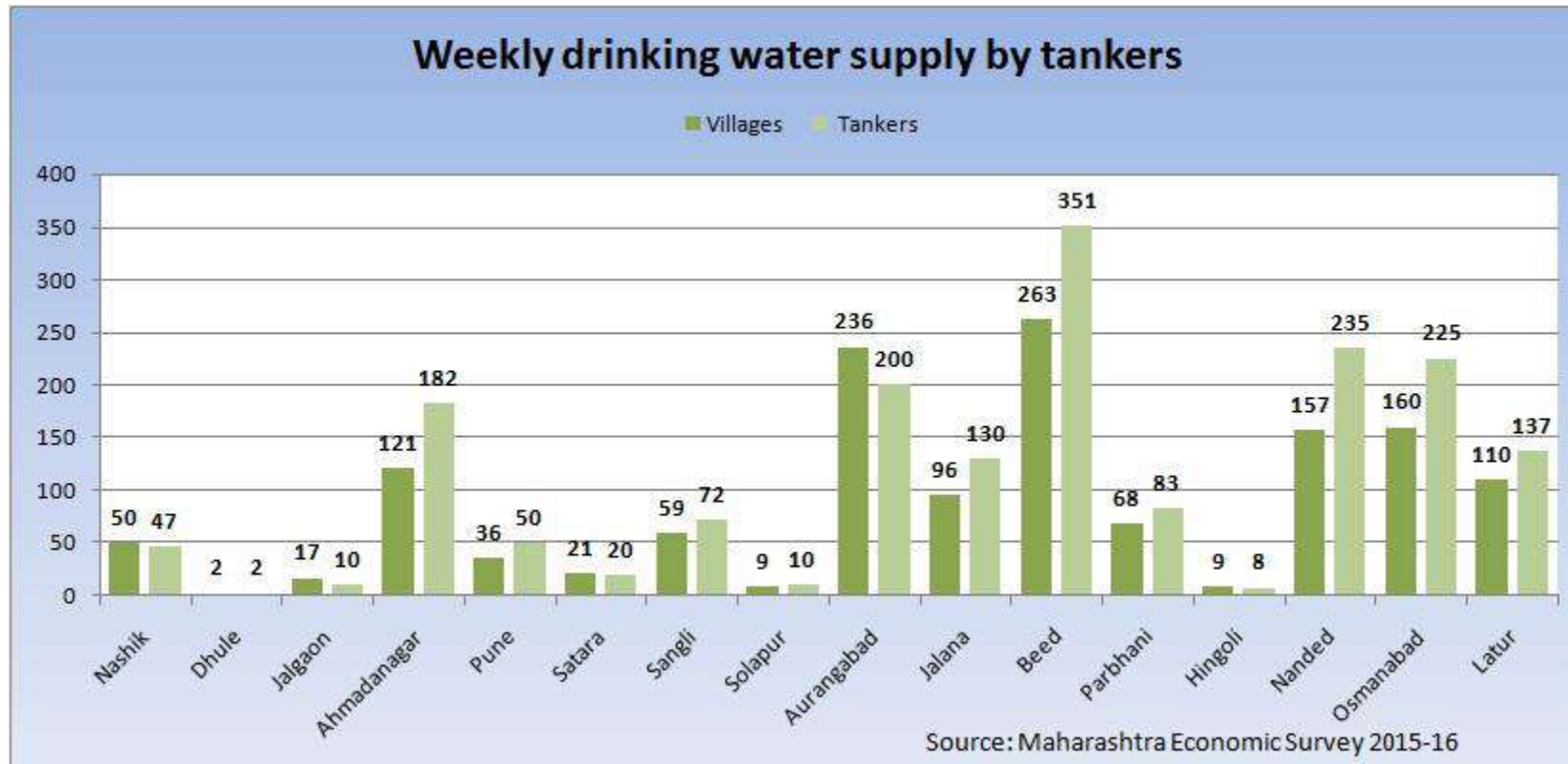
Recent studies have found uranium traces in the groundwater of 79 districts in 16 states



[https://www.youtube.com/watch?v=cuoytemd5Pk&feature=emb\\_imp\\_woyt](https://www.youtube.com/watch?v=cuoytemd5Pk&feature=emb_imp_woyt)

# Tanker Mafia: Case of Latur

- The cost of pumping 6,000 litres of water from a borewell in a rural area is around **Rs 50**, as the agricultural meters are subsidised.
- The borewell owners sell the water to a supplier for **Rs 400**, making a profit of **800 percent**.
- The cost of a water tanker triples to **Rs 1,200** by the time it is sold in Latur town.
- Around 600 tankers of different capacities operate in Latur town. A rough calculation suggests that if **each tanker makes five trips a day and charges Rs 800 per trip then the turnover of the “water economy” is Rs 24 lakh per day**.



# A health crisis

- Forty-five per cent of India's children are stunted and 600,000 children under the age of five die each year, largely because of inadequate water supply and poor sanitation. (UNICEF, FAO)



# An economic crisis

Loss of productivity to water and sanitation related diseases costs many countries up to 5% of GDP (WHO 2012)



# A women's crisis

Women spend 150 million workdays every year for fetching water (UN Water)



# An education crisis

Children are often responsible for collecting water to help their families.





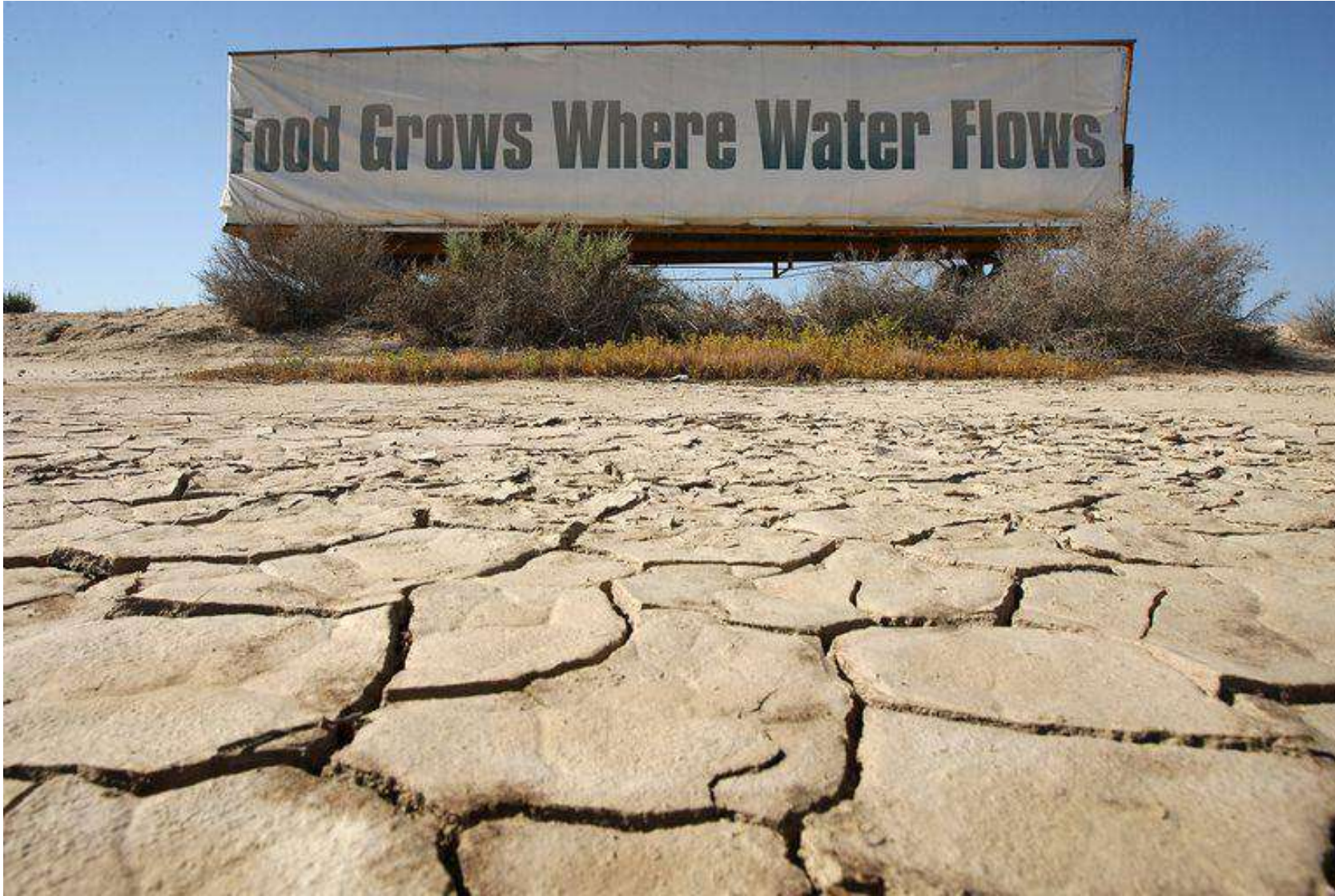
# Sea Level Rise - Saline Water Ingress and Loss of Fresh Water Aquifers

In many coastal areas there has been heavy intrusion of sea water, making fertile agricultural lands unfit for cultivation



# A hunger crisis

The Global hunger index 2020 report has placed India at 94<sup>th</sup> position among 107 countries



# What we have? – A rich traditional water management knowledge

A Baoli in Ferozshah Kotla, New Delhi



Jhalara, Rajasthan



Ahar Pynes of South Bihar



Tanka from Rajasthan



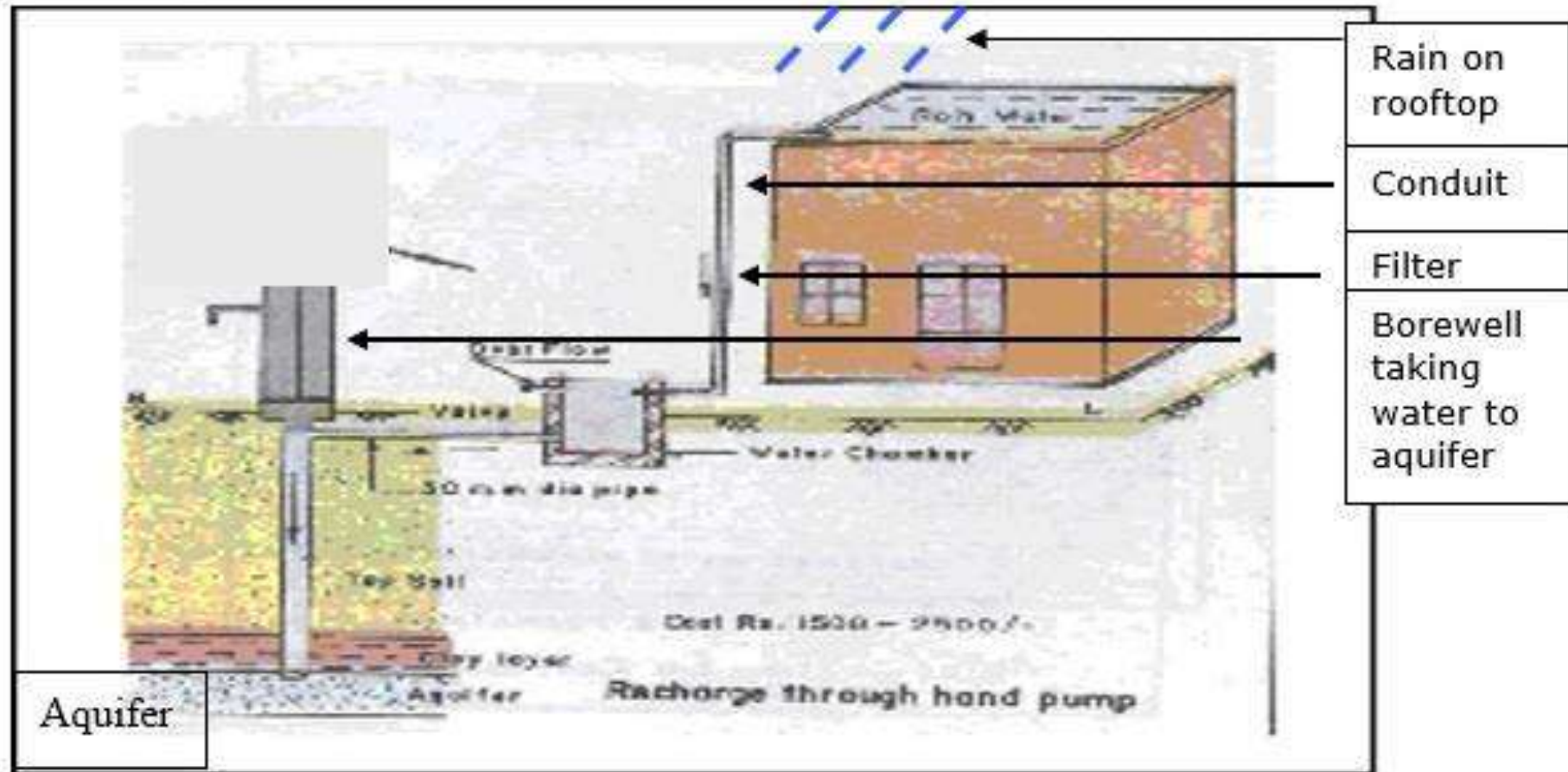
A Johad in Rajasthan



Tank System in Tamilnadu

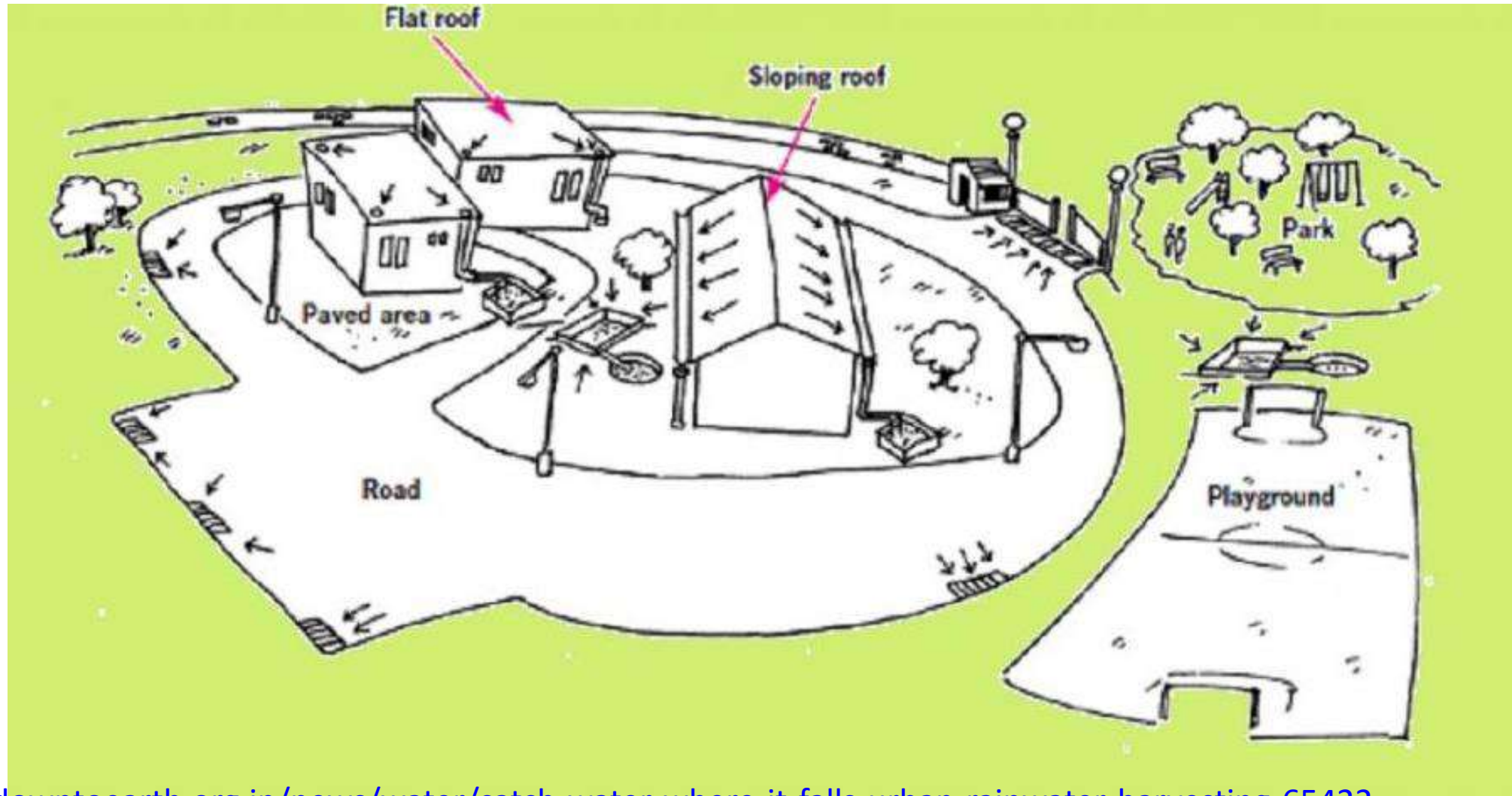


# Rainwater harvesting



# The catchments

- The catchment is a structure or land area that is used to collect rainwater and drain run-off.
- Can be either paved (roofs, courtyards, roads, etc) or unpaved (lawns, playgrounds, open spaces, etc).





Diversion Bunds



Tie Ridging



Contour Farming



Farm Ponds



Use of Abandoned dugwells



Gabion Check Dam

# Action:

## How can NYK Youth fellows contribute?

- **Public awareness and sensitization**

- Posters, banners and other publicity material
- Street plays, songs and Slogans
- Awareness on Traditional Water Wisdom using Folk Performers  
Bahurupiya, Acrobats

<https://www.youtube.com/watch?v=JEkPS5m8rBY>

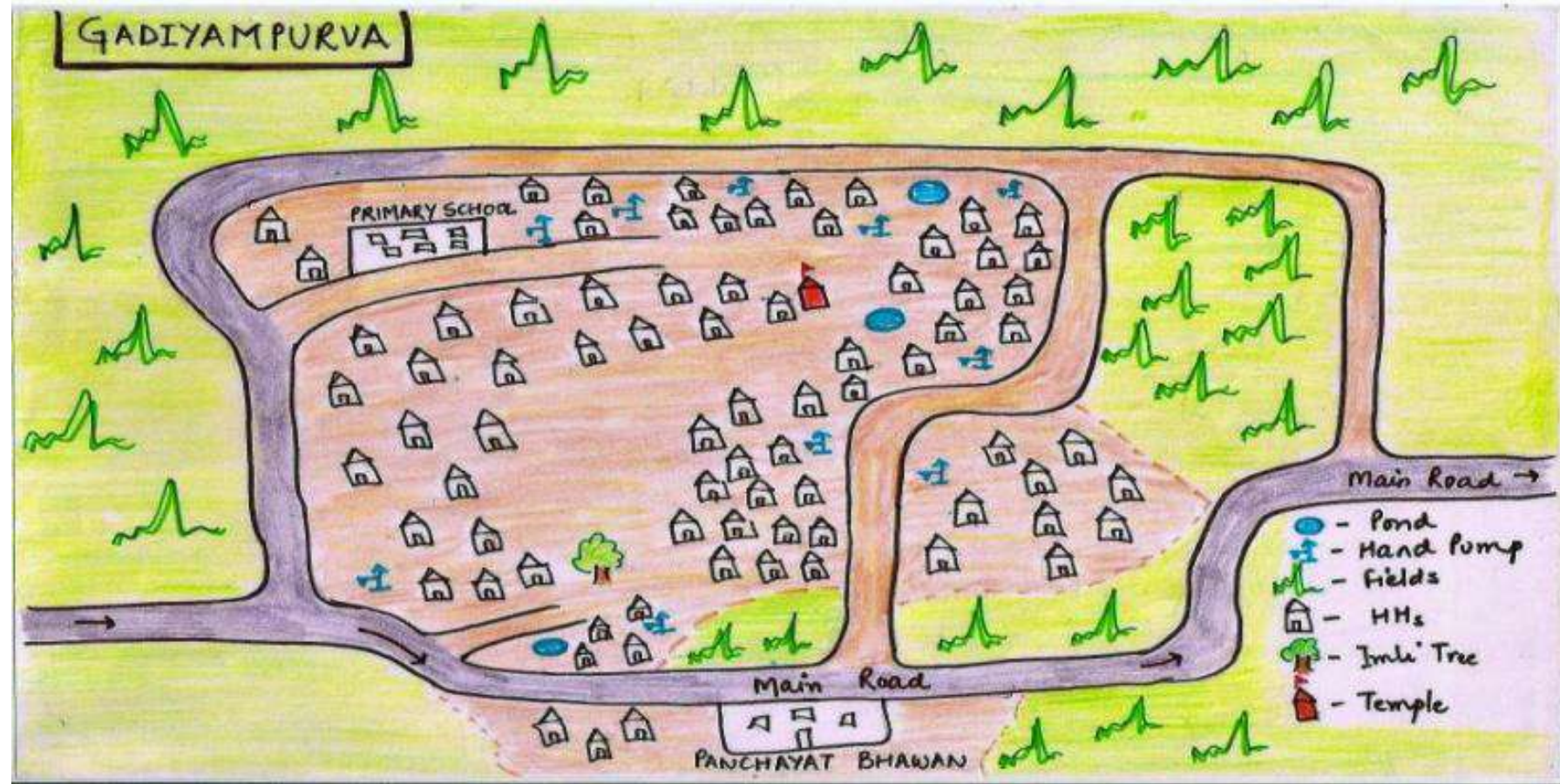
- Walking the tight rope for water

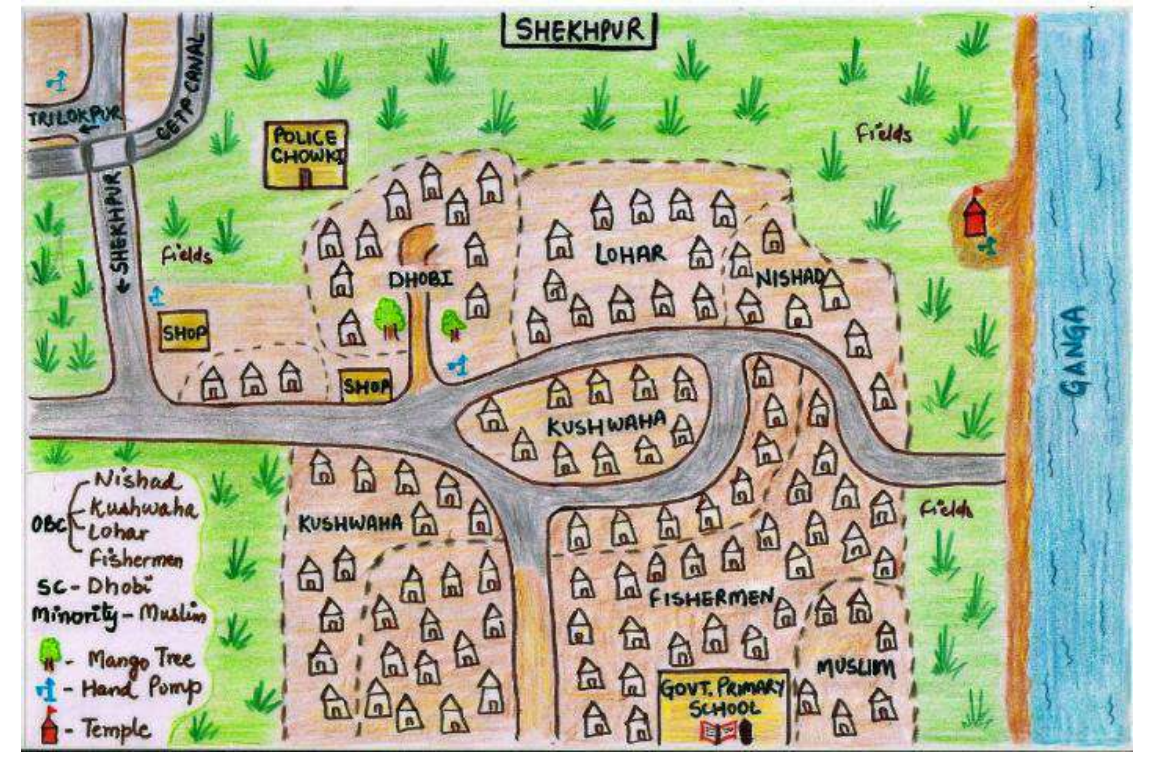
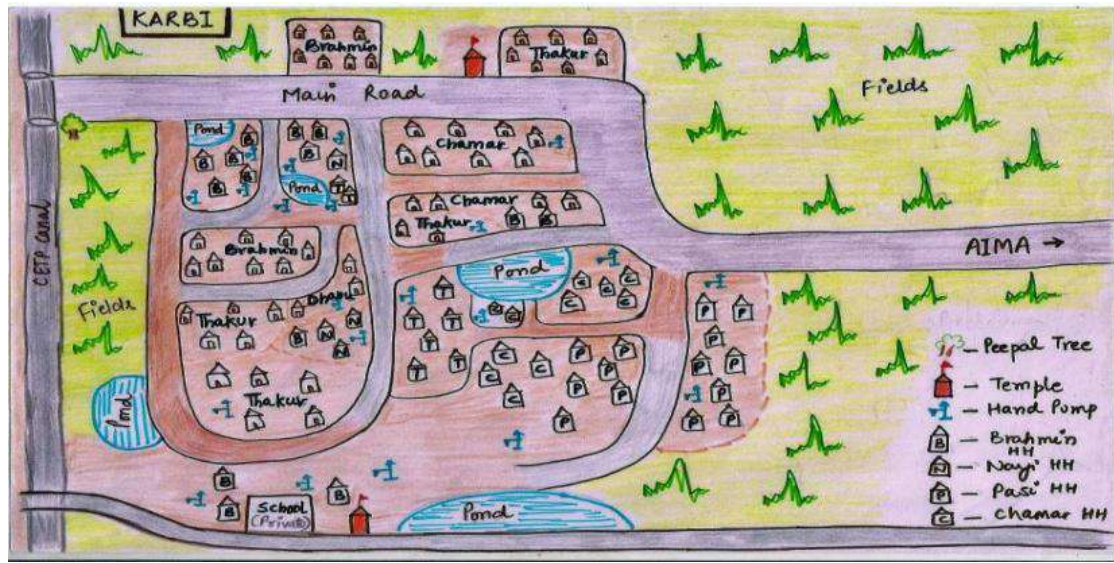
<https://www.youtube.com/watch?v=4qgbJ0vfn-Y>



# Resource Mapping - Major Water Repositories with GPS points – Geotag app

- Traditional water bodies
- Man-made reservoirs
- Lakes and rivers
- Springs
- Forests, fields
- Wetlands





# Documentation

- Government schemes to promote water conservation –RWH and revival of traditional ponds
- Basic Data on the village visited (Google forms) <https://forms.gle/HXardnSM1zGNx7Cv8>
  - Name of the state, district and village
  - Name and contact number of the youth fellow
  - Name and contact of Sarpanch
  - Number of Houses
  - Population
  - Public buildings – School, Panchayat office, Community Center, Primary health care center
  - Average rainfall
  - Soil type (Sandy, Loamy, Clayey, Mixed)
  - Topography (Plain/ Hilly)
  - Number of ponds/lakes/wetlands/well/government borewells and condition (clean, silted, filled with garbage)
  - Water User Association /Jal Samiti/Pani Panchayat/ Other groups details if present

# Establishing an Information Center



- **Jal Shakti Kendra/ Water Knowledge Center**
  - One stop information hub on water conservation (**A helpline number**)
    - Who to approach for Rainwater harvesting?
    - What will be the cost?
    - How much water can I harvest ?
    - Any support from the government?
    - Any information manual?
    - How do I maintain the structure? etc



**IDEAS**

**+ ACTION**

**= CHANGE**

