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

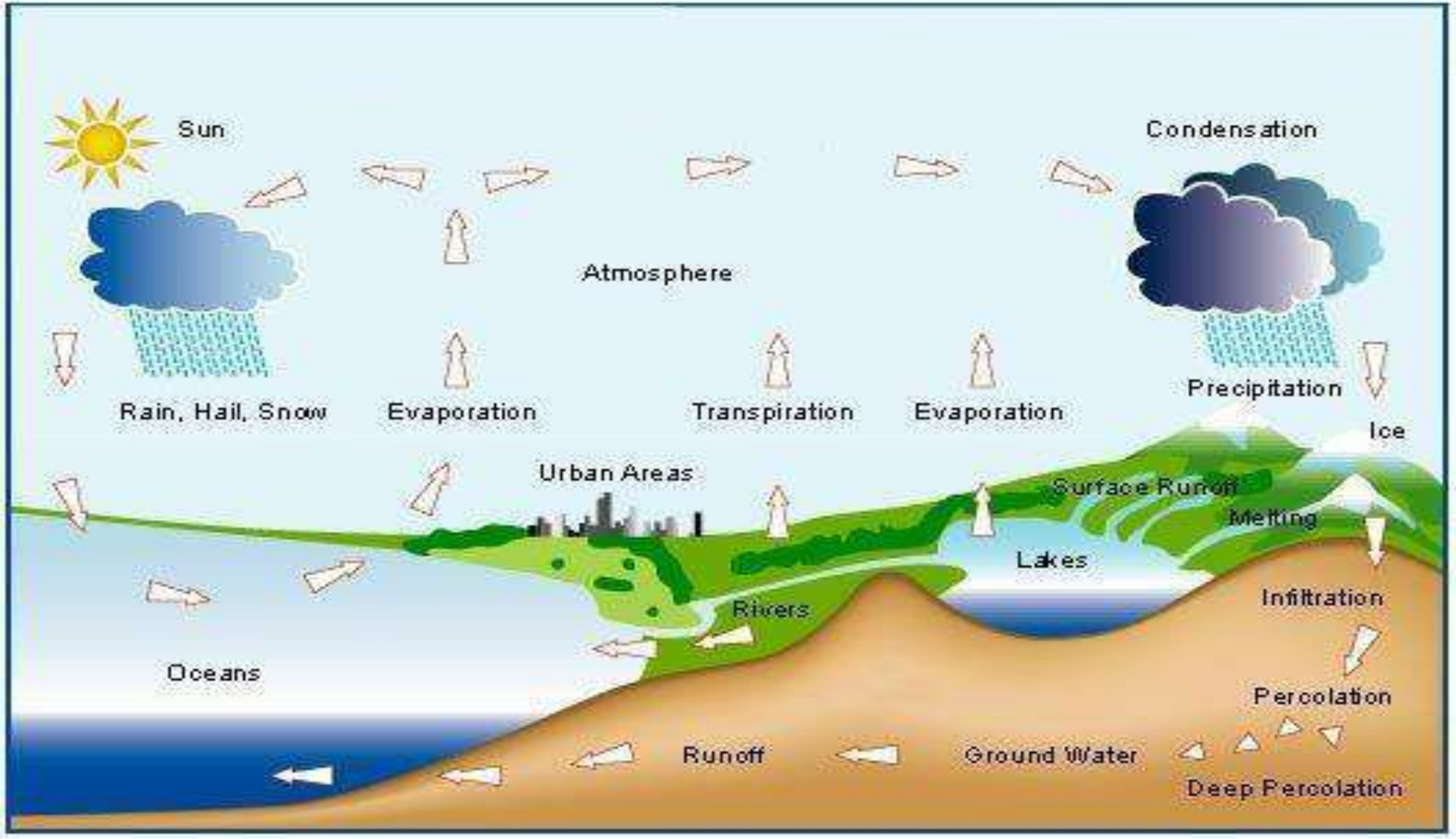
Watershed development

Intensive afforestation

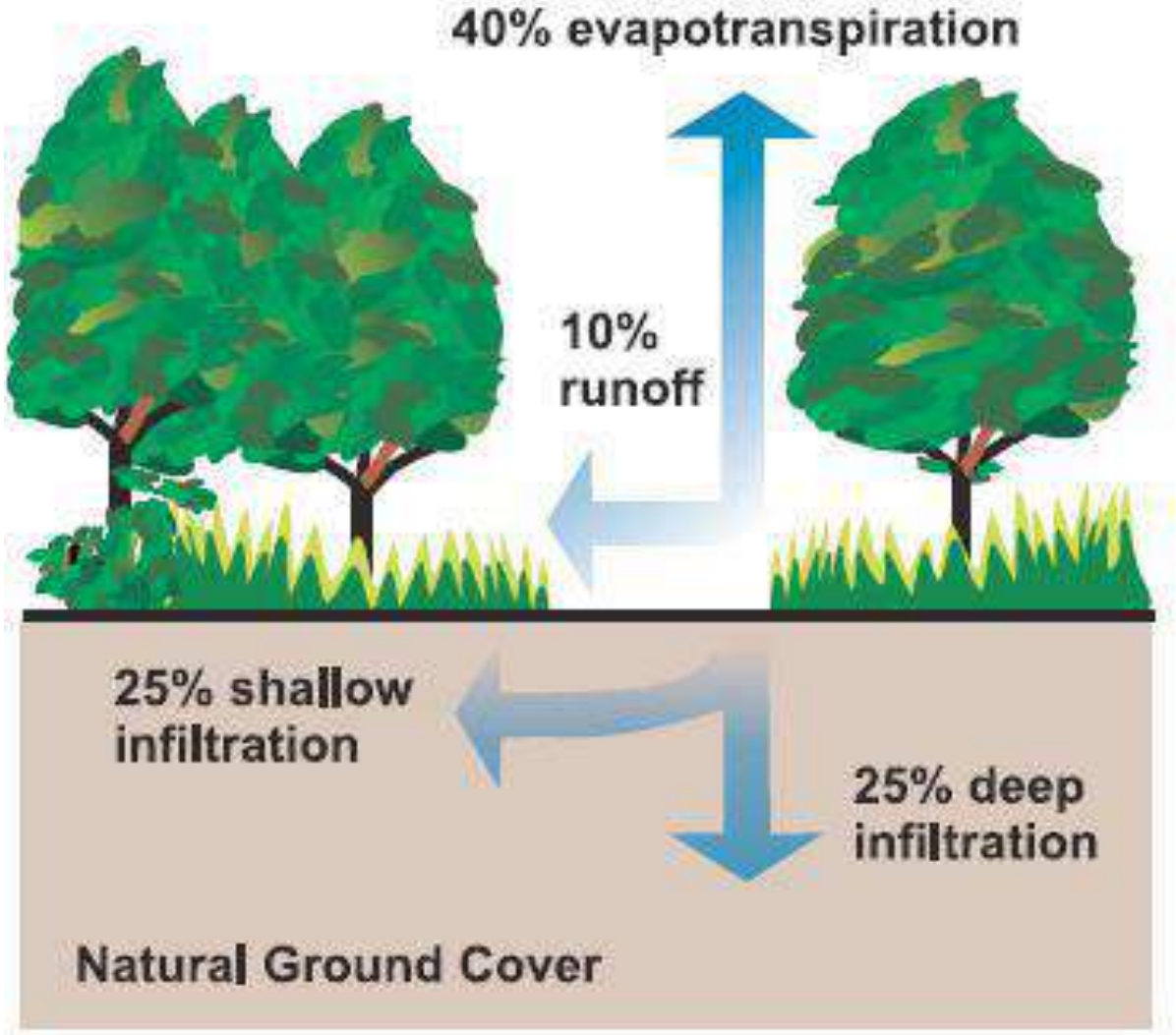
Focused on integrated demand and supply-side management of water at the local level, including creation of local infrastructure for source sustainability

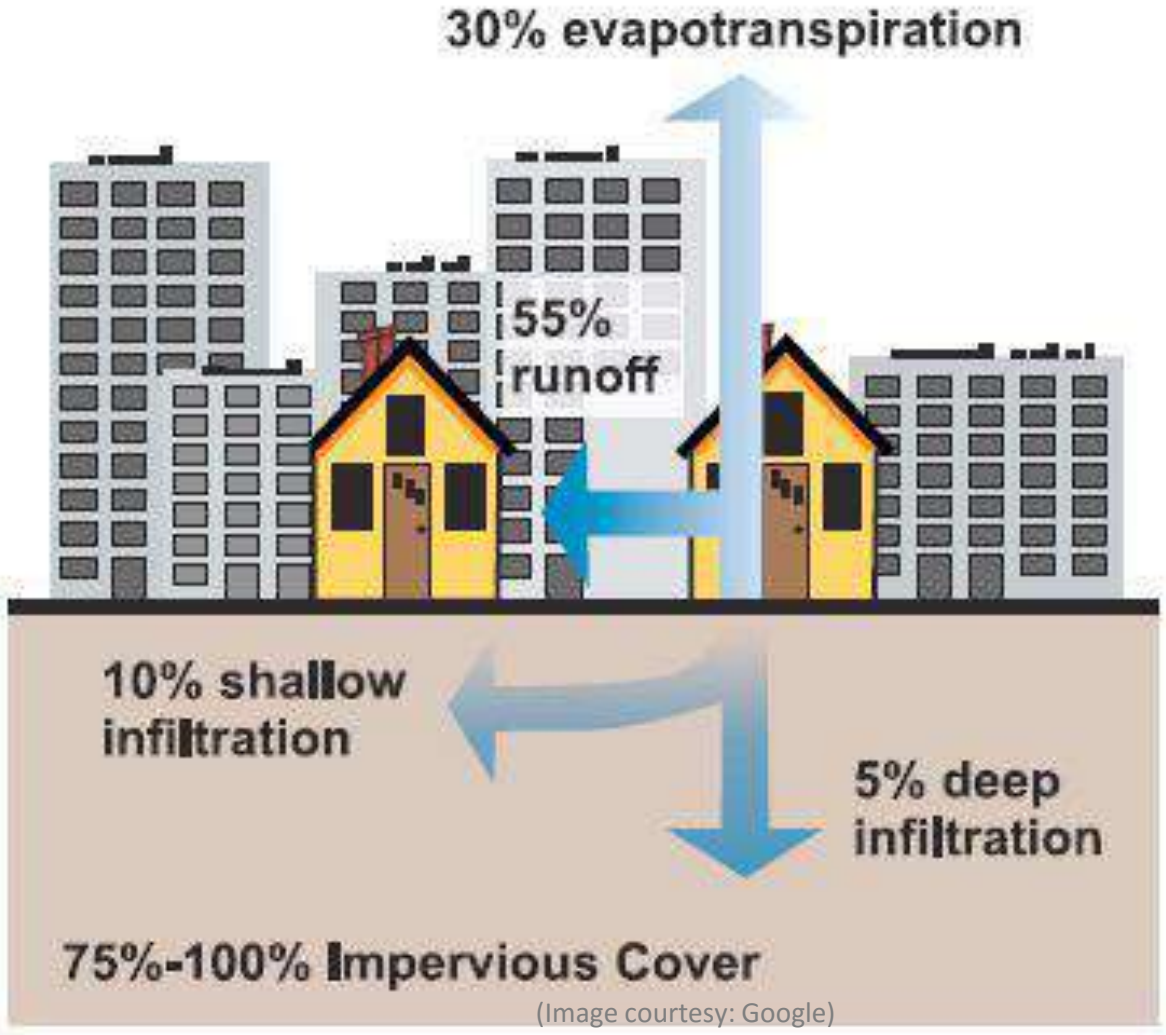
Catch the rain, where it falls, when it falls

The Water (Hydrologic) Cycle



Green and Blue Spaces (Recreate/Rejuvenate)





(Image courtesy: Google)

The Problem:

Why water conservation?

Table - 1 Per capita water availability in India

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

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

Population Vs Water Needs

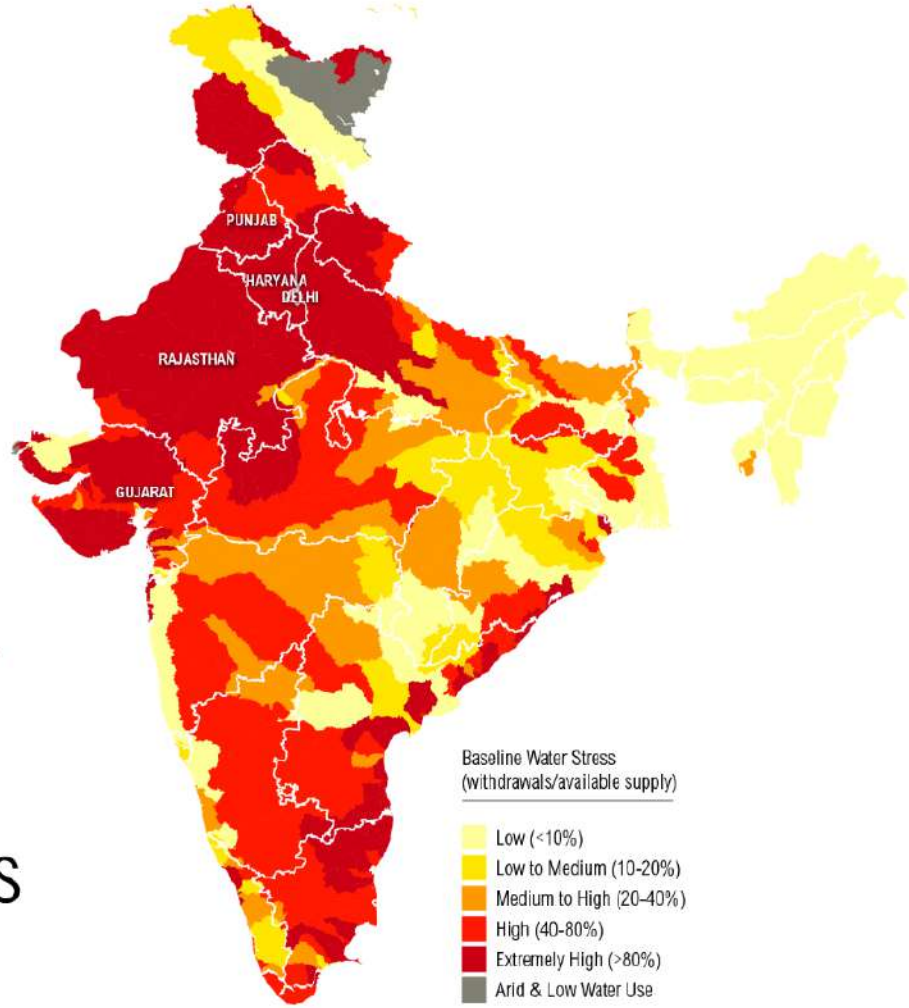
Source: http://www.cwc.gov.in/sites/default/files/main-report.pdf

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

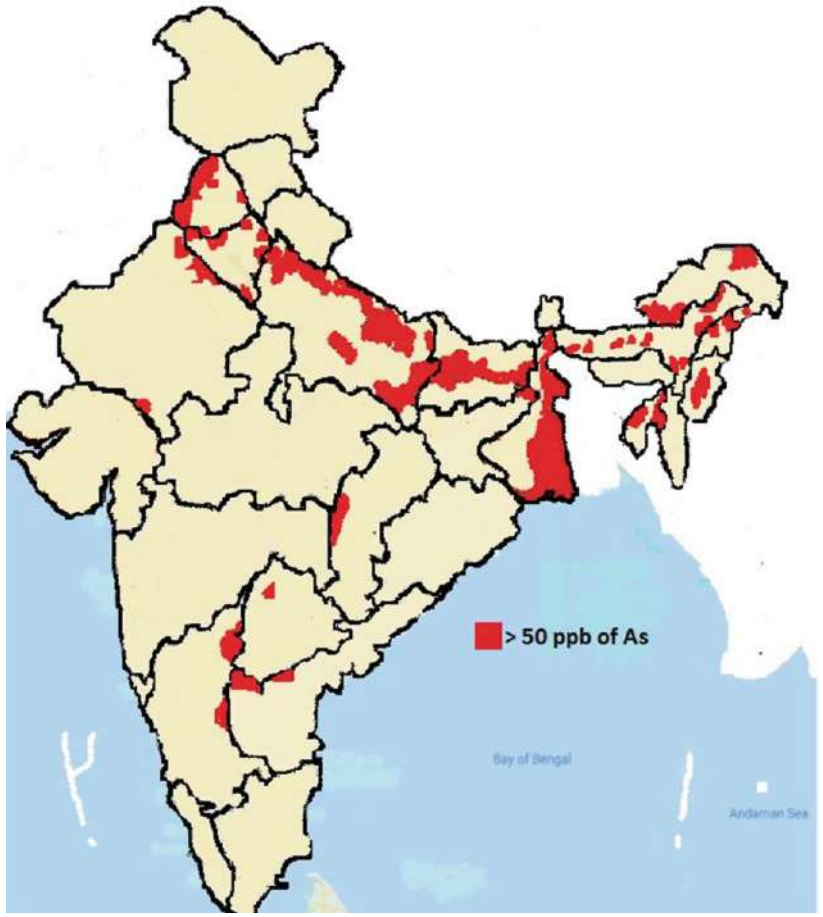


www.indiawatertool.in

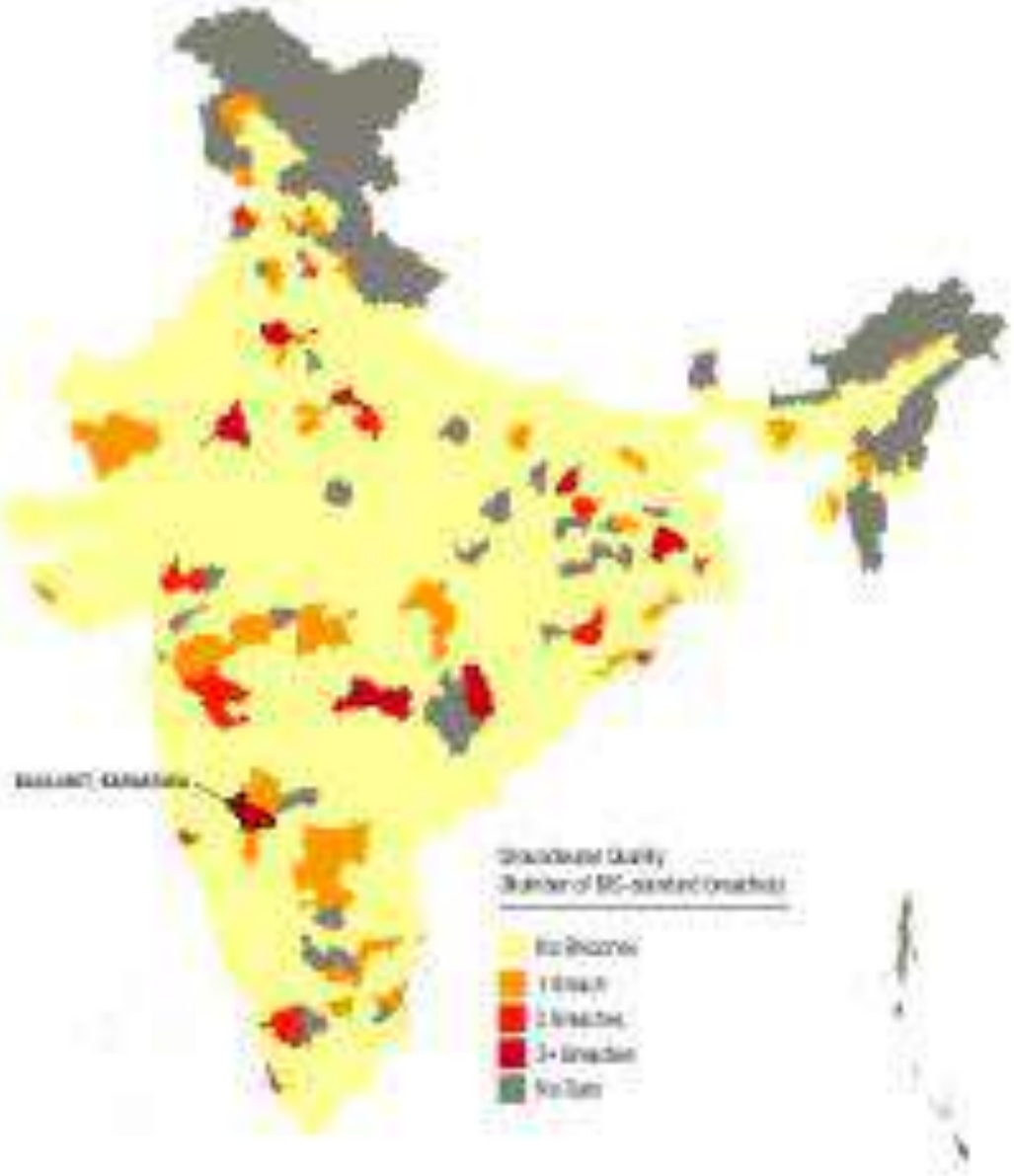
WORLD RESOURCES INSTITUTE

Source: World Resources Institute, 2016

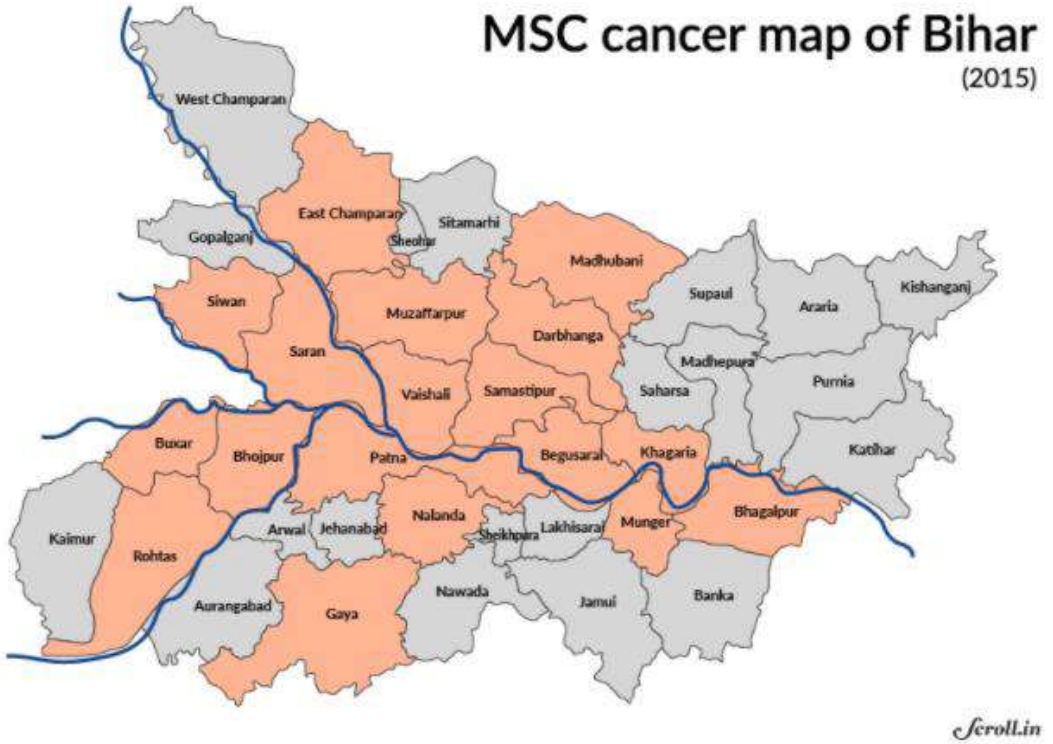
The Status of Arsenic Contamination in India



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



Source: Mahavir Cancer Sansthan



Source: Mahavir Cancer Sansthan

A total of 23,3173.8 hectares of crop land in the nine districts -- Baragarh, **Bolangir,** Deogarh, Jharsuguda, **Kalahandi,** Nabarangpur, Nuapada, Sambalpur, Sundargarh -- have been declared drought-affected.

The nine districts which have been affected by the current floods are – **Kalahandi, Bolangir,** Kandhamal and Sambalpur in western Odisha and Gajapati, Koraput, Malkangiri, Nowrangpur and Rayagara in the south.

2018- too little water

Farmers have suffered crop loss of 33 per cent and above due to moisture stress in Odisha. (File)

Drought Declared In 9 Districts Of Odisha

2019- Too much Water

1.77 lakh people affected by Odisha floods

A health crisis

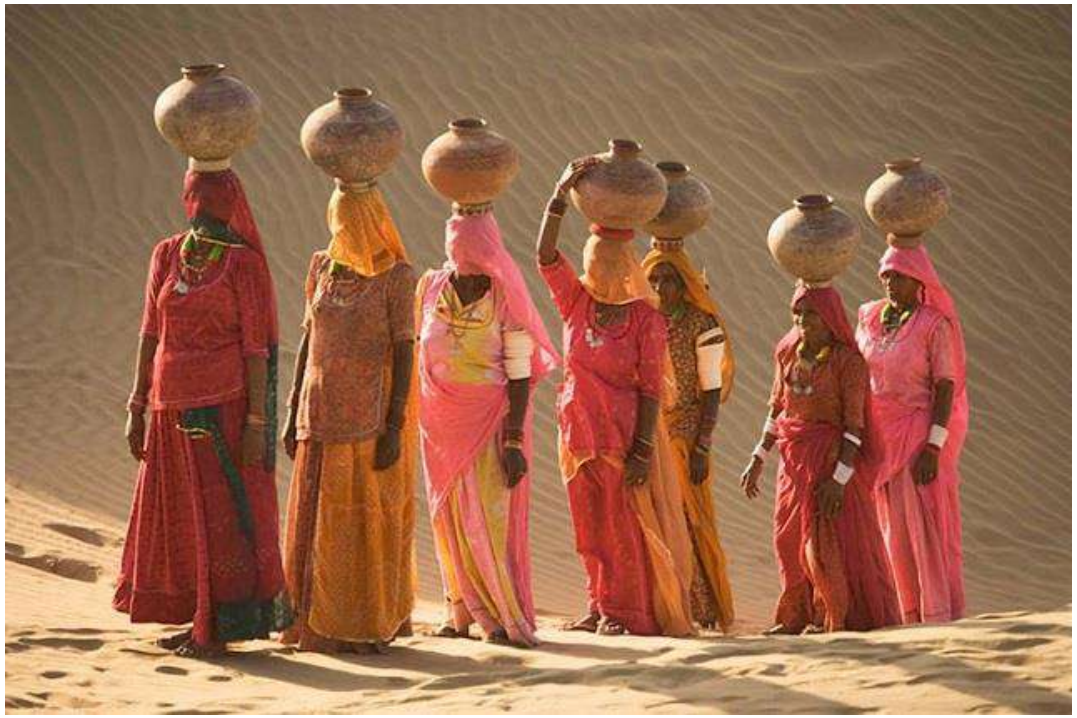
- Forty-five per cent of India's children are stunted and 600,000 children under the age of five die each year, largely because of inadequate water supply and poor sanitation. (UNICEF, FAO)

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

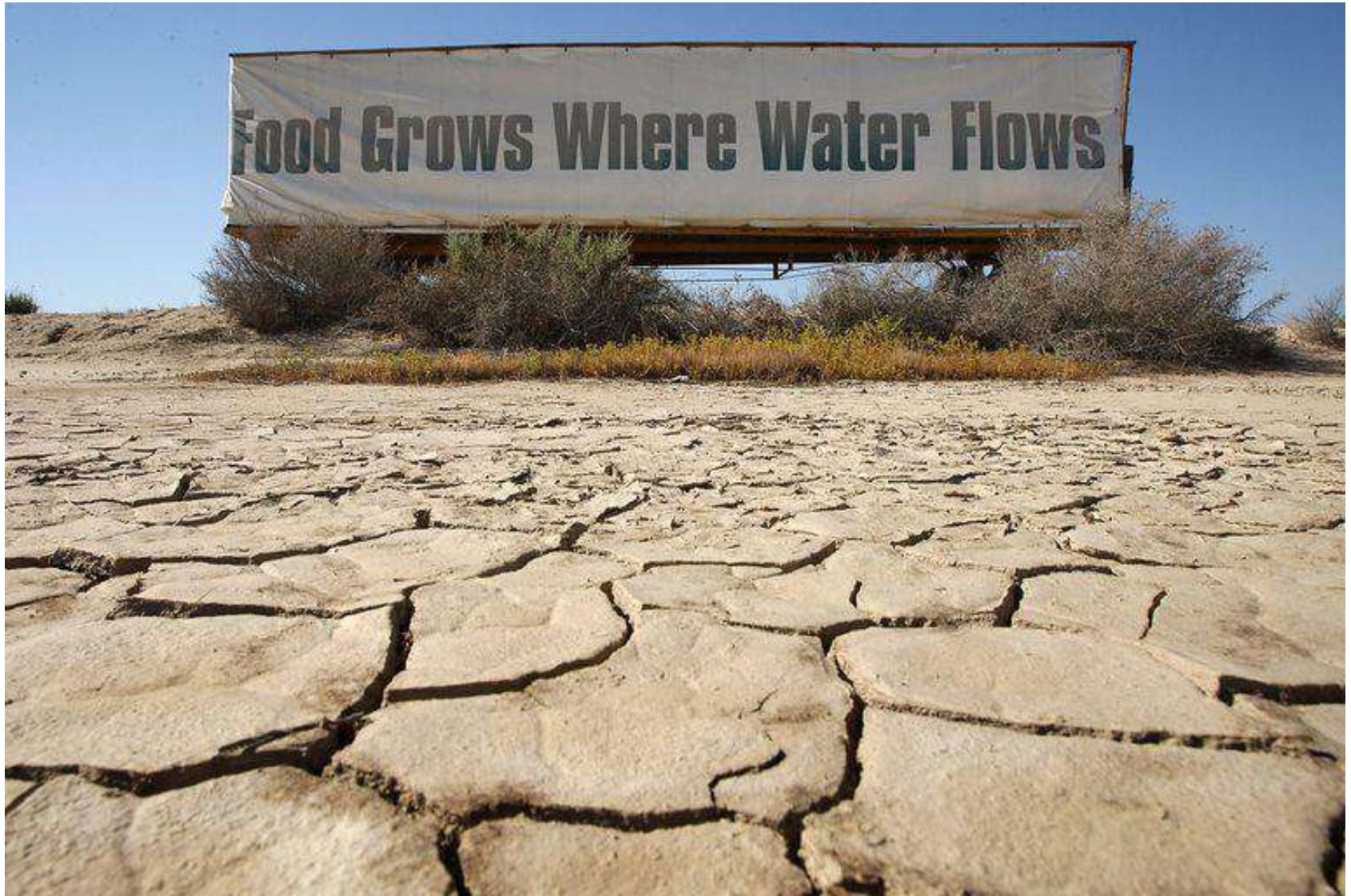
Children are often responsible for collecting water to help their families.

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 94th 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 Binar

Tanka from Rajasthan

A Johad in Rajasthan

Tank System in Tamilnadu

http://jalshakti-dowr.gov.in/sites/default/files/eBook/eBook-Stepwell/mobile/index.html

Source: https://www.thebetterindia.com/61757/traditional-water-conservation-systems-india/

AHAR PYNE- BIHAR

- Ahar - rectangular embankment type water harvesting structure - embanked on three sides & fourth side being the natural gradient of land
- Pyne are the irrigation channels

https://www.youtube.com/watch?v=Hd8v1HUJfX8&feature=youtu.be

What is rainwater harvesting?

Collecting rainwater from roof tops, in gardens, in ponds


Rain Garden
Drawing provided by
Emmons & Olivier Resources, Inc.

Gabion Check Dam

Action:
How can NYK Youth fellows contribute?

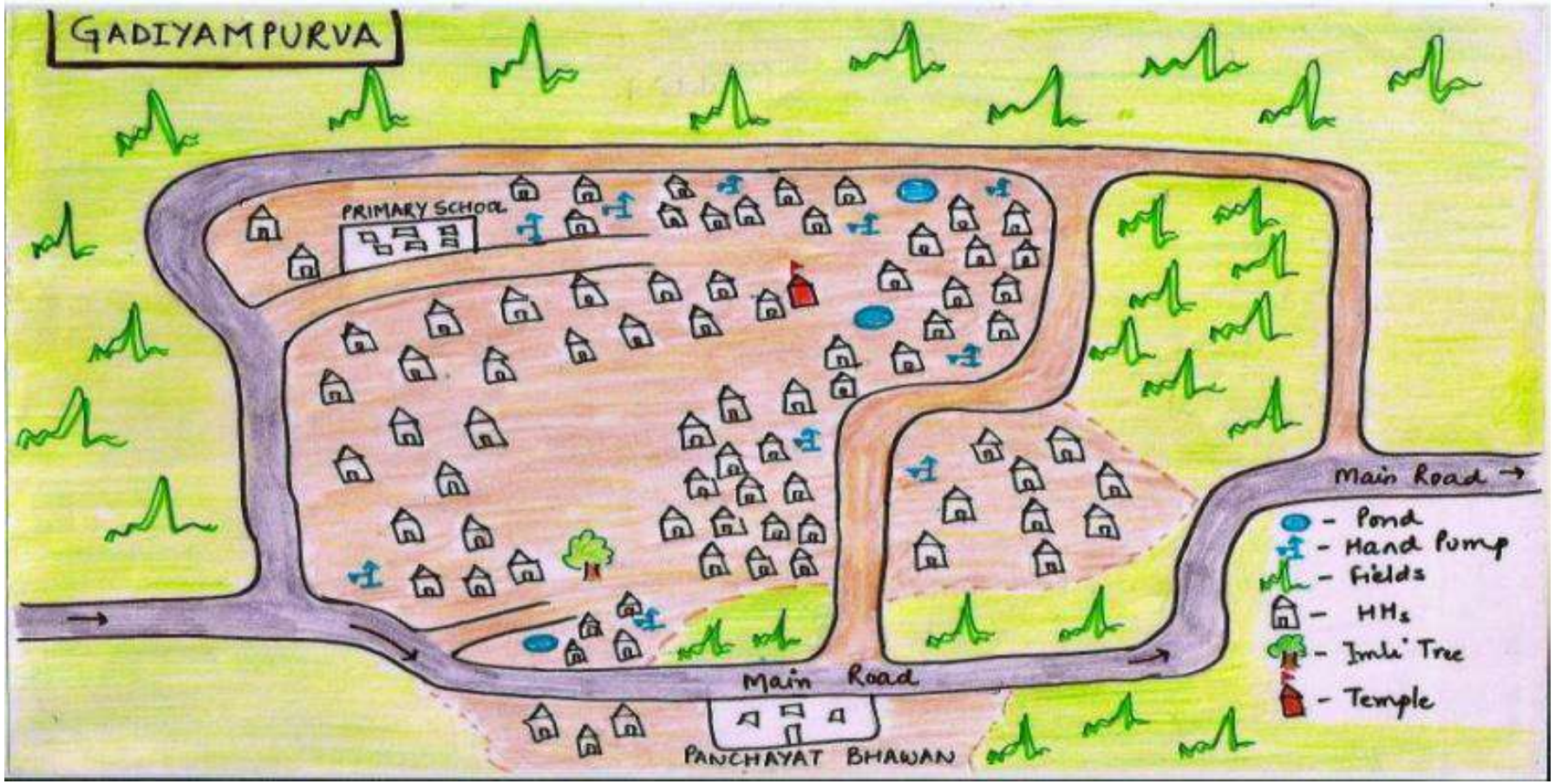
- **Public awareness and sensitization**
  - Posters, banners and other publicity material
  - Street plays, songs and Slogans
  - Awareness on Traditional Water Wisdom using Folk Performers Bahurupiya, Acrobats

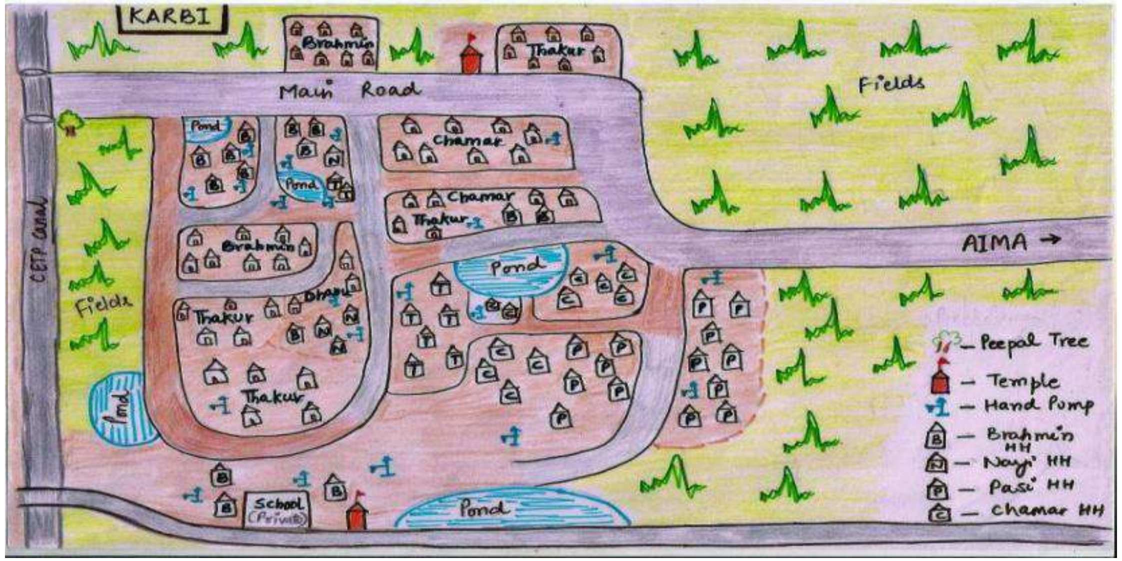
  https://www.youtube.com/watch?v=JEkPS5m8rBY
  - Walking the tight rope for water

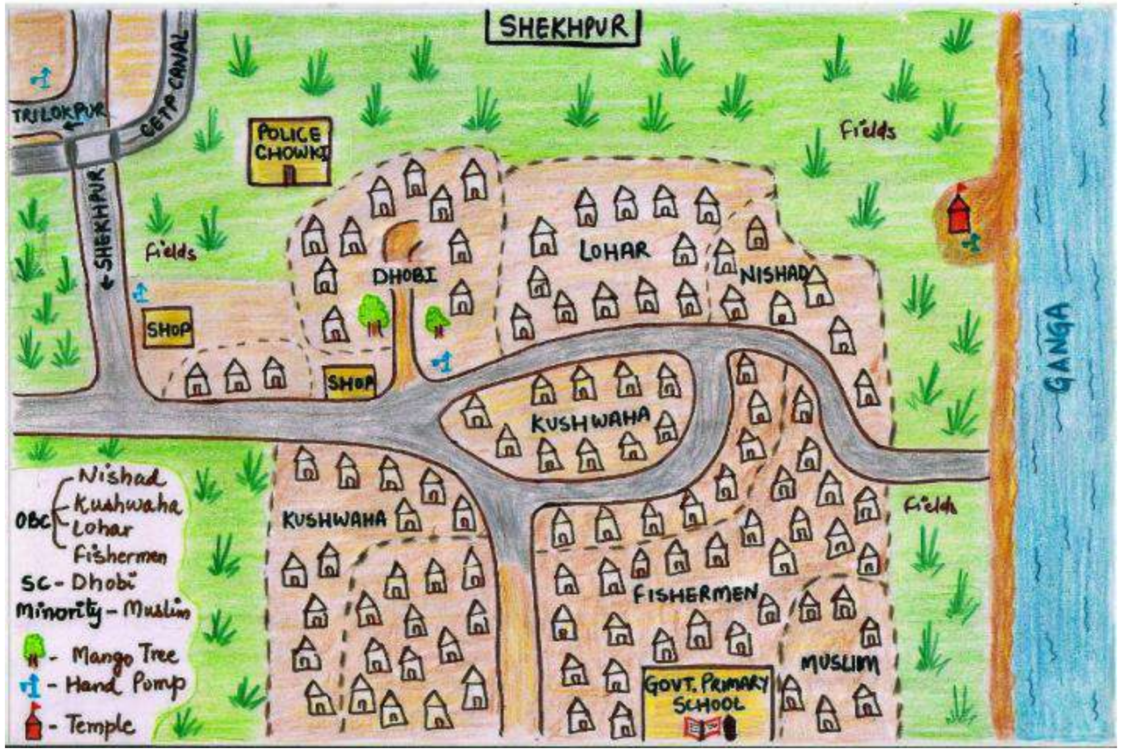
  https://www.youtube.com/watch?v=4qgbJ0vfn-Y

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

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




KARBI
Brahmin
Thakur
Main Road
Fields
Chamar
Pond
Chamar
Thakur
Brahmin
AIMA →
CETP canal
Fields
Pond
Thakur
Thakur
School (Private)
Pond
Peepal Tree
Temple
Hand Pump
Brahmin HH
Nayi HH
Pasi HH
Chamar HH


SHEKHPUR
TRILOKPUR ←
CETP CANAL
← SHEKHPUR
POLICE CHOWKI
Fields
Fields
SHOP
DHOBI
LOHAR
NISHAD
SHOP
KUSHWAHA
KUSHWAHA
Fields
GANGA
FISHERMEN
MUSLIM
GOVT. PRIMARY SCHOOL
OBC - Nishad, Kushwaha, Lohar, Fishermen
SC - Dhobi
Minority - Muslim
Mango Tree
Hand Pump
Temple

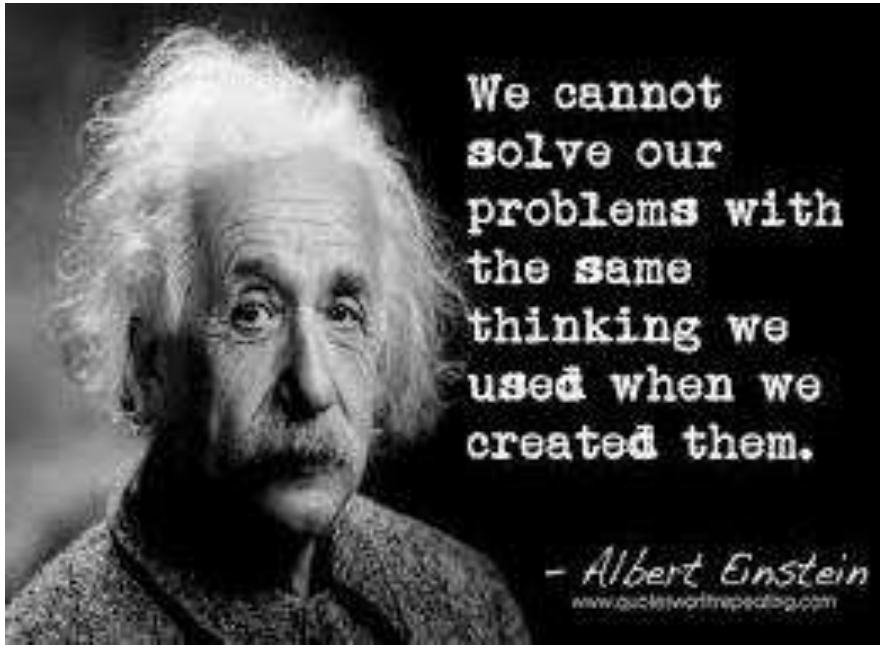
Documentation

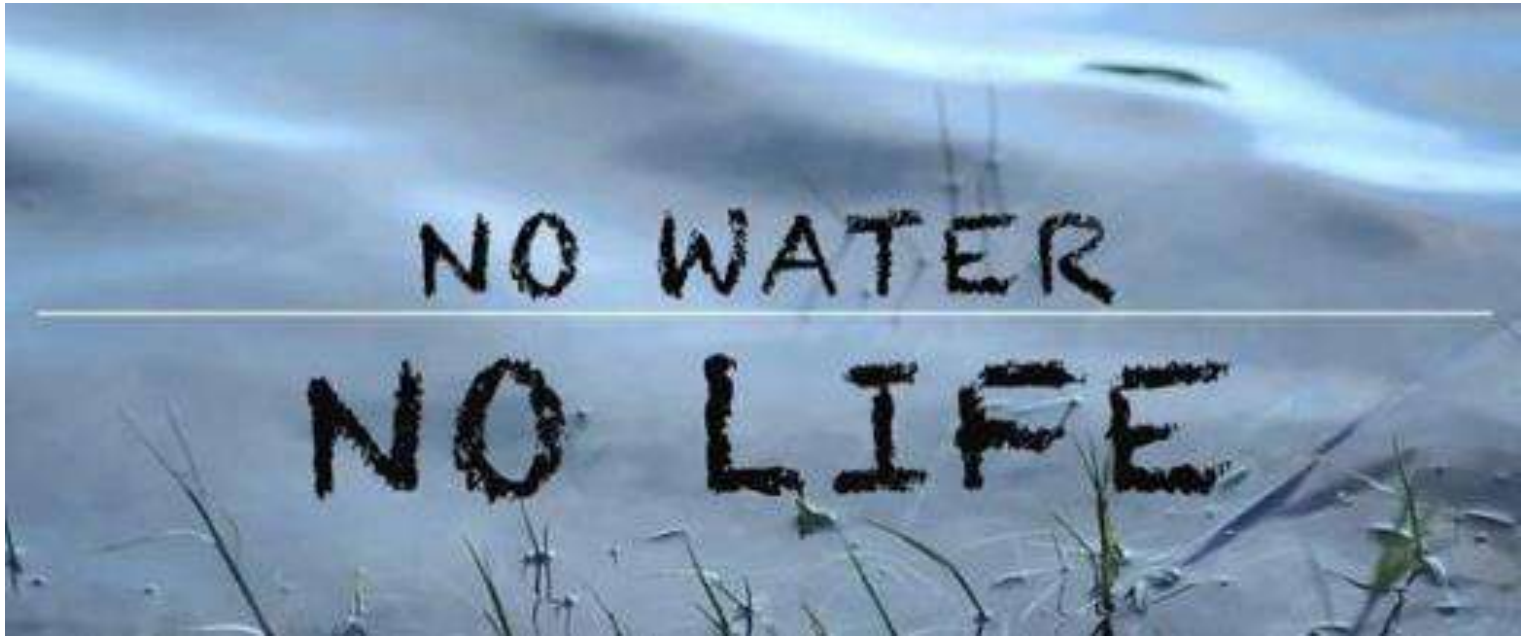
- Government schemes to promote water conservation –RWH and revival of traditional ponds
- Basic Data on the village visited (Google forms) https://forms.gle/HXardnSM1zGNx7Cv8
  - Name of the state, district and village
  - Name and contact number of the youth fellow
  - Name and contact of Sarpanch
  - 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

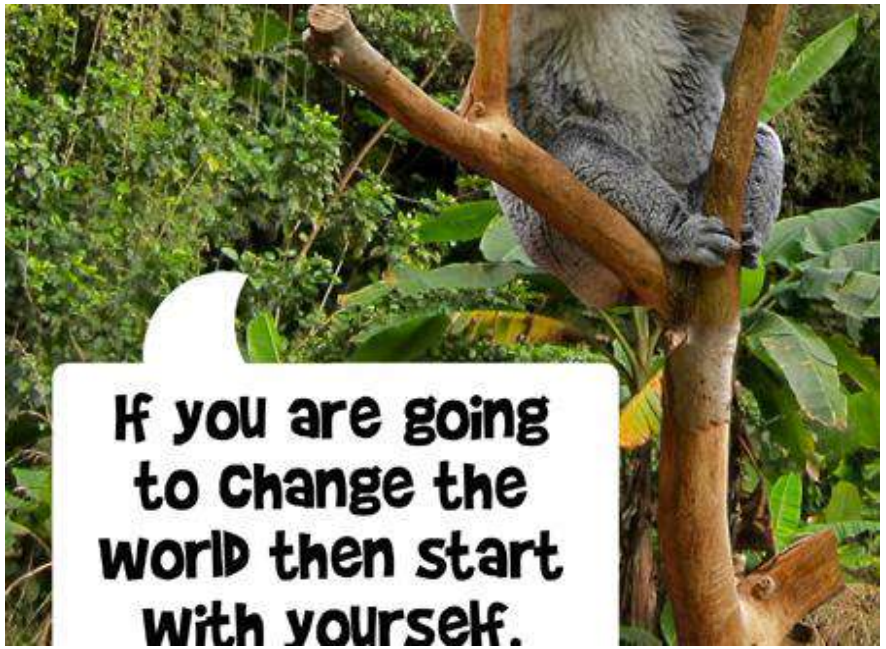
Establishing an Information Center

- **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







THANK YOU

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