

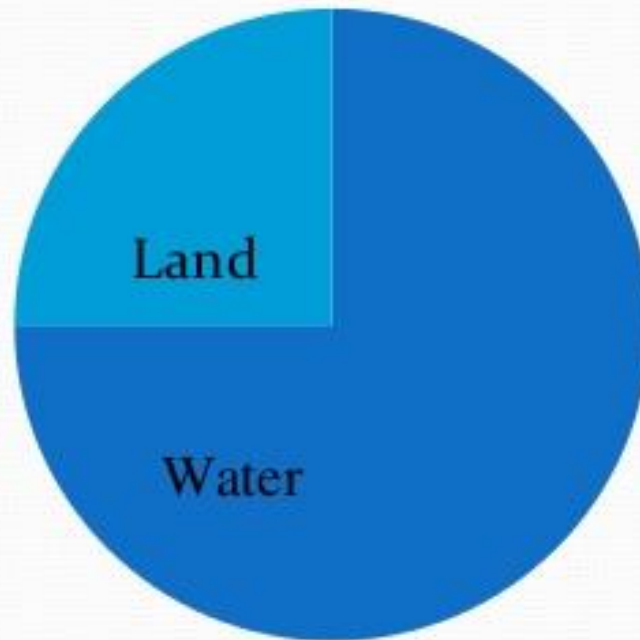
# WATER RESOURCES



## Water: some facts and figures

- ❖ Three fourth of the earth's surface is covered with water

### AREA UNDER LAND AND WATER



## Water: some facts and figures

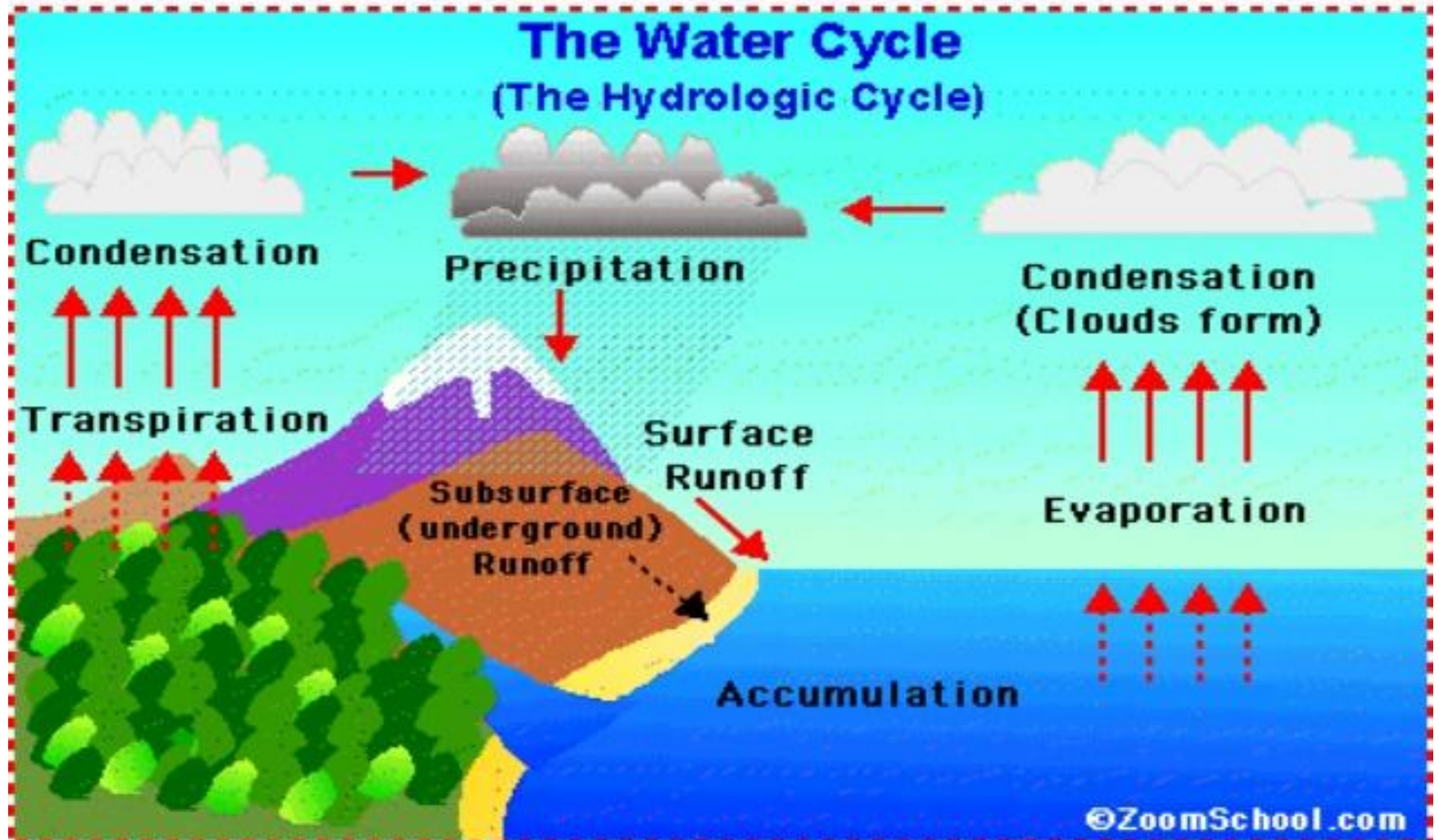
- ❖ Out of 100% of water **96.5 %** of the total volume of the world's water is **SALINE**
- ❖ **2.5 %** is **FRESHWATER**
- ❖ **70%** of freshwater occurs as **ice** sheets and **glaciers**
- ❖ **29%** as Groundwater

## Water: some facts and figures

- ❖ India gets 4% of the global precipitation
- ❖ Land area of India is 2.4% of the world
- ❖ India hold 17% of the world's population



❖ Hydrological cycle ensuring that water is a renewable resource.



# Is water renewable resource?





# Is water renewable resource?



## If the following conditions are Being continued....

- ❖ Industrial waste disposal to water
- ❖ Excessive use of chemical fertilizers
- ❖ Uses of chemical pesticides
- ❖ Rapid Urbanization
- ❖ Over population
- ❖ Global warming -- Drought



## ➤ India – A Monsoon Country

➤ 100 – 120 days experience monsoon

- ❖ Still facing water scarcity – Why?
- ❖ Growing Population
- ❖ Expanded irrigation
- ❖ Intensive Industrialisation and Urbanisation
- ❖ Hydroelectric Power generation

- India has 10360 small and big rivers
- Mawsinram is the wettest place in the world
- Water is sufficiently available - but the quality.... ?

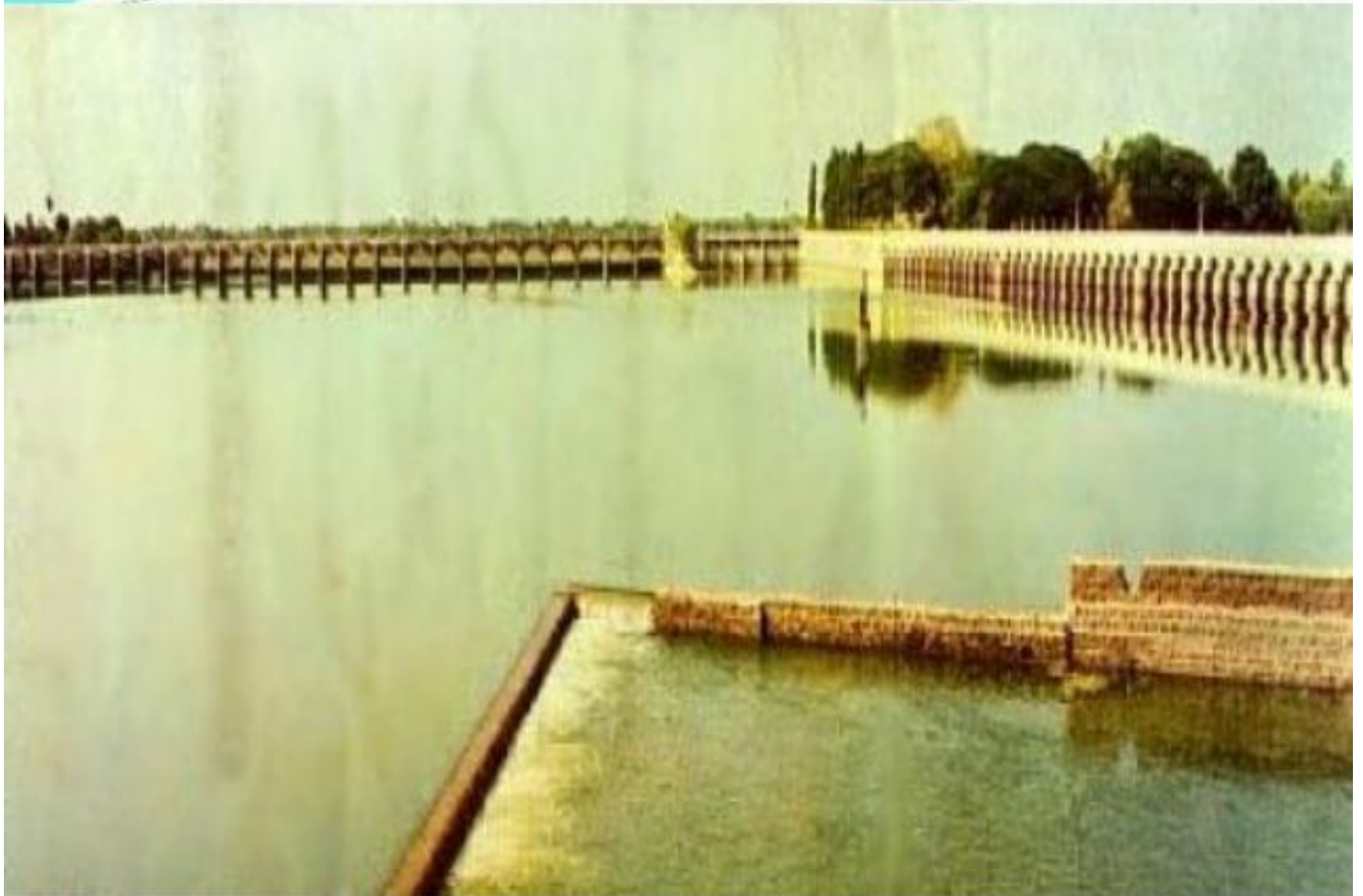
- ❖ Reasons for the bad quality of water..
- ❖ Chemical pesticides and fertilizers
- ❖ Polluted by domestic and industrial waste

## ➤ Why water resource is needed to be conserved?

- ❖ To ensure healthy life
- ❖ To ensure food security
- ❖ For the continuation of our livelihoods
- ❖ To prevent degradation of our ecosystem



# Grant Anicut / Kallanai



## GRANT ANICUT or KALLANAI

- ❖ It built on the Kaveri river -- TN
- ❖ By the Cholas king Karikala around the 2<sup>nd</sup> Century AD
- ❖ It is one of the oldest water regulator structures in the world, which is still in use.

# Pringaverapura water harvesting system



- ❖ A sophisticated water harvesting system built in the 1<sup>st</sup> Century B.C. at Allahabad, UP



Nagrajuna konda –

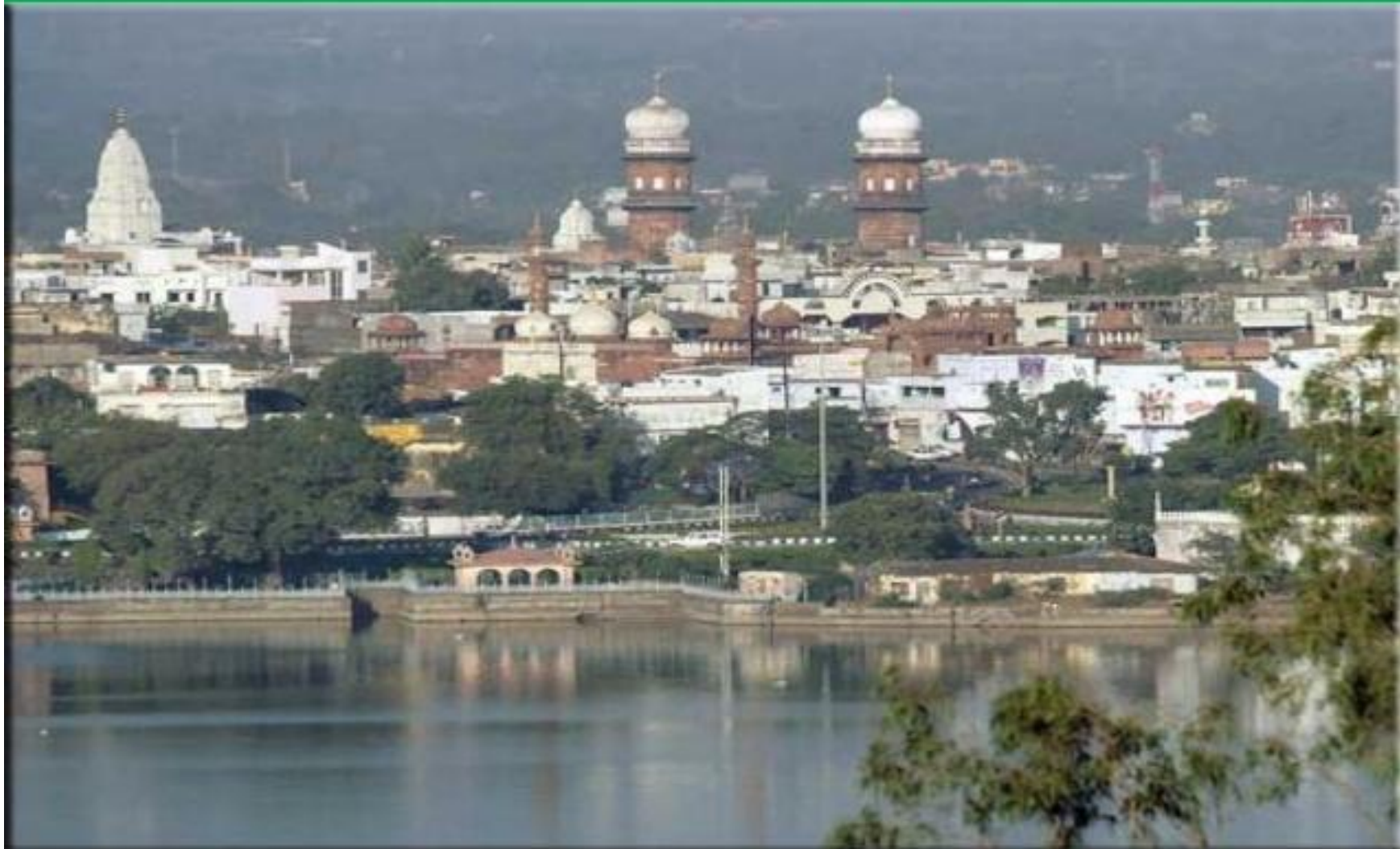
Andhra Pradesh



Nagarjunakonda,  
Andhra Pradesh, India

Bhopal lake –

Madhya Pradesh





## BHOPAL LAKE – MADHYA PRADESH

- ❖ It is a source of drinking water of the city
- ❖ Built between 1005 – 1055 AD by the Malwa King



HAUZ KHAS –

DELHI



Hauz means Water Tank  
Khas means Royal

Royal water tank

- It was built by the Allauddin Khilji – 1296 - 1316- to supply water for the inhabitants of Siri Fort

# HAUZ-I- shamsi Built by Iltumish Mehrauli





**Agrasena ki Baoli – Built by Maharajah Agrasena  
(more than 5000 years ago)  
Rebuilt in 14<sup>th</sup> century by the Agrawal community**



## How do dams help us in conserving and managing water?

Dams were traditionally built to impound rivers and rainwater that could be used later to irrigate agricultural areas.

# What are the different uses of the modern dams?

Irrigation

Electricity generation

Domestic and industrial uses

Flood control

Recreation

Inland navigation

Fish breeding



# The biggest dam in India: TEHRI on Bhagirathi river

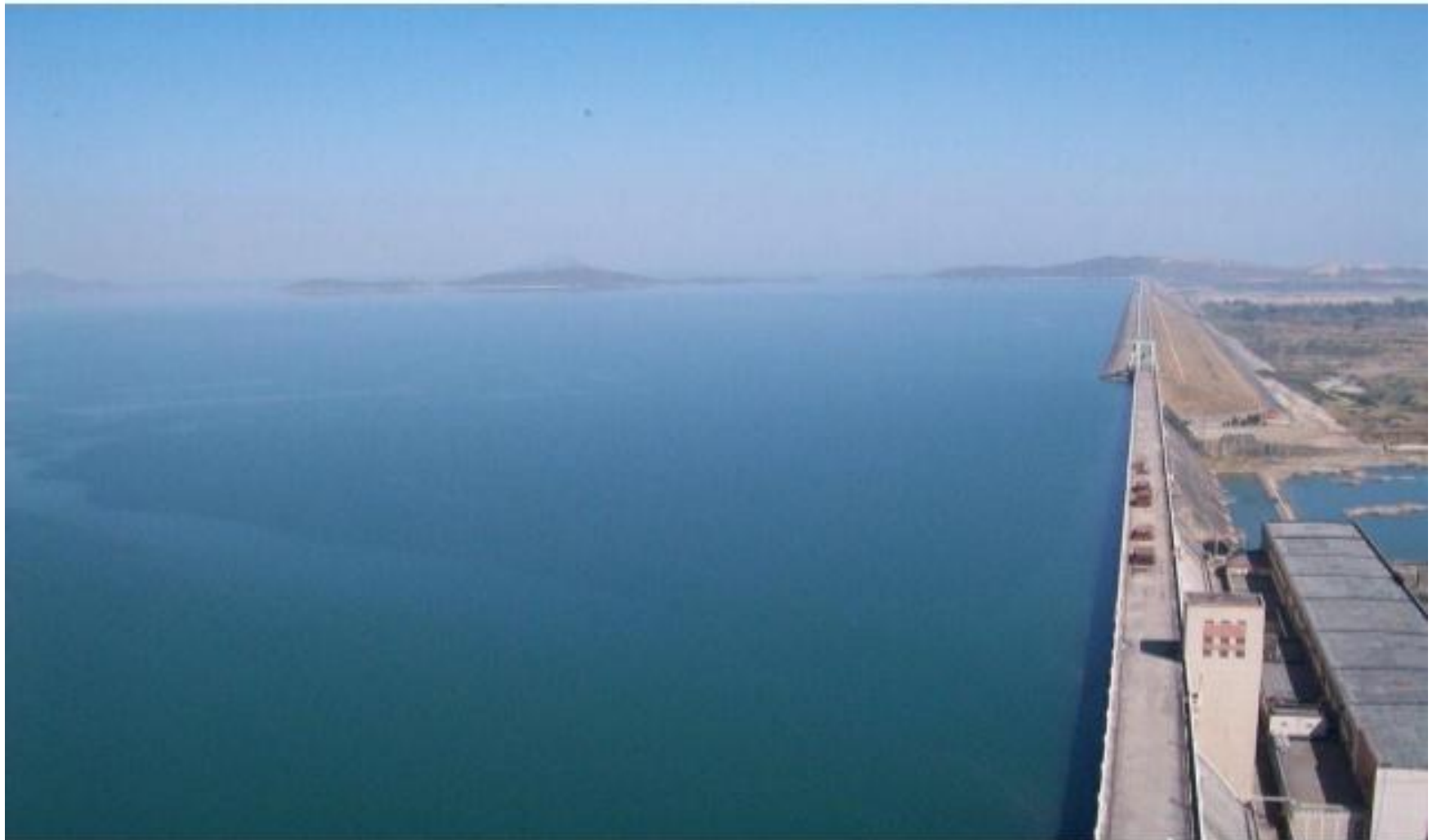


# The highest dam in India: Bhakra Dam on Sutlej river





# The longest dam in India: the Hirakud on Mahanadi river





# Why multi-purpose projects and large dams have come under great controversy?

- Regulating and damming of river affect their natural flow causing poor sediment flow and excessive sedimentation at the bottom of the reservoir.
- It controls the migration of aquatic fauna
- It makes submergence of the existing vegetation

# Why multi-purpose projects and large dams have come under great controversy?

- It leads large scale displacement of local communities
- It destroys habitat of millions of flora and fauna
- It leads the degradation of soil due to the continuous irrigation

# Who are the beneficiaries of Multi-purpose projects?

- The landowners
- Large farmers
- Industrialists
- Few urban centers



# Inter-state water disputes

- Kaveri river water dispute between Karnataka and Tamil Nadu
- Disputes have been started since 1870 between Princely State of Mysore and Madras Presidency

# Inter-state water disputes

- Krishna river water dispute between Karnataka, Andhra Pradesh and Maharashtra
- Maharashtra – 303 KM
- Karnataka -- 480 KM
- Andhra Pradesh – 517 KM

# Inter-state water disputes

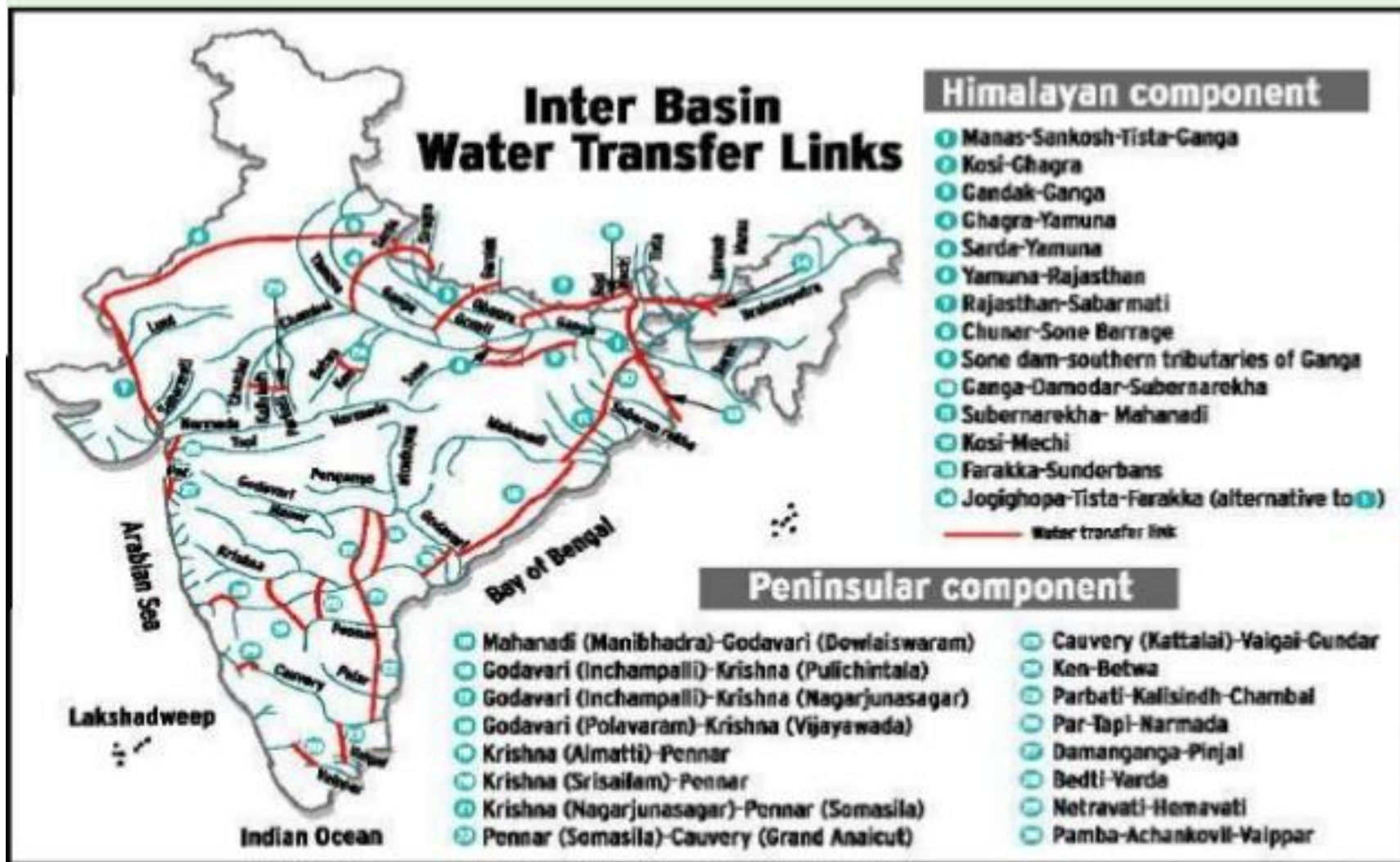
- Yamuna river water disputes among UP, Haryana and Delhi
- Godavari river water disputes among Maharashtra, AP, Karnataka, MP, Odisha and Chhattisgarh



# Inter-national water disputes

- Indus river water disputes between India and Pakistan
- Kosi river water disputes between India and Nepal
- Brahmaputra water disputes between India and China

# River inter-linking project in India





# River inter-linking project in India

- Aim of river linking project -- Transfer of water from surplus to water deficit areas in the country.
- Disadvantages
  - Huge investment needed for the infrastructure
  - It leads to the disorder of physical settings
  - Leads to the causes of natural disaster
  - It causes the irreparable damage of the ecosystem
  - Habitat destruction



**SAVE WATER**



**THE WORLD  
IS IN  
YOUR HANDS**