

WATER RESOURCES—

Importance:

- **Rainfall—seasonal. Crops—grown throughout.**
- **Some areas receive more than others. Rice—grown everywhere.**
- **Rainfall—highly erratic & unpredictable**
- **Some crops require more than others**
- **Some soils don't absorb as much water as others**

Means: Conventional—Wells, Tube wells, Canals, Tanks

Non-conventional—Furrows, Sprinkler, Drip, Rainwater harvesting

WELLS: dugout/hollow made in ground

Places: Northern Plains, UP, Bihar

Why in Northern Plains?

- **Underground water table is high as region is drained by perennial rivers**
- **Region has alluvial soil which is soft and easy to dig**
- **Farmers have small landholdings which facilitate the building of wells as it occupies less space**

Advantages:

- **Cheap**
- **Easy**
- **Subjected to less evaporation**
- **Occupies less space**
- **Convenient to dig by individual farmers**
- **Underground water is rich in minerals which add to the fertility of the soil**

Disadvantages:

- **Wells may run dry due to excessive use**
- **Water table decreases in summer**
- **Evaporation is higher for unlined wells**
- **Water may turn brackish or salty—unfit for cultivation**

TUBE WELLS:

Advantages:

- Can irrigate larger area of land—400 hectares at a time
- Least evaporation
- No problem of brackish water

Disadvantages:

- Costly
- Requires electricity

Places: UP, Bihar, Gujarat

CANALS:

2 types—Inundation & Perennial

| <u>INUNDATION</u> | <u>PERENNIAL</u> |
|---|---------------------------------------|
| Bed is higher than river bed | Bed is lower than river bed |
| Drawn directly from river | Drawn by making dams, barrages, weirs |
| Have water only during floods | Have water throughout the year |
| Mostly done by individual farmers—cheaper | Mostly undertaken by govt—costly |

Advantages:

- Gives water to fields during summer
- Save crop from drought
- Sediments add to fertility
- Cheap source of irrigation
- Initial expenditure is high—cheap in the long run

Disadvantages:

- May lead to water-logging along canal route due to seepage of water
- Excessive flow raises level of groundwater—problem of reh
- Marshy areas nearby are breeding grounds for mosquitoes
- May overflow & cause floods during rainy season
- Can be practised in plain areas only

Places: UP, Punjab, Haryana, Bihar

TANKS: partly dugouts/enclosing bunds

Why in Peninsular India?

- Hard rocks make it difficult to dig canals and wells
- Limited percolation due to hard rock structure
- Rivers are seasonal—cannot supply water to canals

Advantages:

- Natural—don't involve high cost
- Fishing in tanks—provides food resources and adds to farmer's income

Disadvantages:

- Dry up in summer
- Tanks may get silted—regular desilting required
- Large surface area—evaporation
- Occupies large space—otherwise would have been used for cultivation

Places: Peninsular India (Orissa, MH, KN, Kerala, W Bengal)

FURROW: narrow channels of equal dimensions are made through every row of crops

Advantages:

- Ensures even distribution of water
- Reduces flooding in fields
- More scientific

Disadvantages:

- Takes time to construct
- Costlier
- Subjected to evaporation

SPRINKLER: comprises a long hose whose one end is joined to a water resource while the other end is joined to the sprinklers

Advantages:

- Less wastage
- Ensures adequate amount of water

Disadvantages:

- Costlier
- Can irrigate lesser area
- Subjected to evaporation

DRIP: consists of a perforated pipe which is attached to the roots of the crops

Advantages:

- Most efficient
- Least evaporation
- Least wastage
- Gives optimum amount of water

Disadvantages:

- Very costly
- Can only be used for commercial farming
- Too much of humidity to crop may lead to plant diseases

RAINWATER HARVESTING: technique of increasing the recharge of groundwater by storing rainwater locally.

- To meet increasing demand for water
- To raise underground water tables
- To reduce groundwater pollution
- To reduce soil erosion
- To supplement domestic water needs

Places: Tamil Nadu, Meghalaya