

1. Haryana's Johads set for Revamp

Prelims Level: Heritage Tourism

Mains Level: GS-I Indian culture will cover the salient aspects of Art Forms, Literature and Architecture from Ancient to Modern Times.

Why in News?

- Haryana's Johads are all set for a revamp. The state government has come out with a plan of rehabilitating over 16,400 ponds in rural areas across the state in order to analyze pond water to ascertain its suitability for irrigation and other uses.

About:

- Johads are community-owned rainwater storage wetland mainly used for harnessing water resources.
- It is used in the state of Haryana, Rajasthan, Punjab, and western Uttar Pradesh.
- It collects and stores water throughout the year, to be used for the purpose of recharging the groundwater in the nearby water wells, washing, bathing and drinking by humans and cattle.
- Some johads also have bricked or stones masonry and cemented ghat.
- Other names of Johads (Haryanvi language and Rajasthani language) sarovar, taal and talab in Hindi language, and water pond or lake in English. Johads are called as khadin in Jaisalmer district.

Traditional Water Conservation:

- History tells us that both floods and droughts were regular occurrence in ancient India.
- Perhaps this is why every region in the country has its own traditional water harvesting techniques that reflect the geographical peculiarities and cultural uniqueness of the regions.
- The basic concept underlying all these techniques is that rain should be harvested whenever and wherever it falls.
- Archaeological evidence shows that the practice of water conservation is deep rooted in the science of ancient India.
- Excavations show that the cities of the Indus Valley Civilization had excellent systems of water harvesting and drainage.
- The settlement of Dholavira, laid out on a slope between two storm water channels, is a great example of water engineering.

- Chanakya's Arthashastra mentions irrigation using water harvesting systems.
- Sringerapur, near Allahabad, had a sophisticated water harvesting system that used the natural slope of the land to store the floodwaters of the river Ganga.
- Chola King Karikala built the Grand Anicut or Kallanai across the river Cauvery to divert water for irrigation (it is still functional) while King Bhoja of Bhopal built the largest artificial lake in India. Drawing upon centuries of experience, Indians continued to build structures to catch, hold and store monsoon rainwater for the dry seasons to come.
- These traditional techniques, though less popular today, are still in use and Efficient.

Other Traditional Water Conservation Techniques:

- **Zing** – It is found in Ladakh, are small tanks that collect melting glacier water. A network of guiding channels brings water from the glacier to the tank.
- **Kuhls** – They are surface water channels found in the mountainous regions of Himachal Pradesh. The channels carry glacial waters from rivers and streams into the fields.
- **Jack wells** - The Shompen tribe of the Great Nicobar Islands uses this system, in which bamboos are placed under trees to collect runoff water from leaves and carries it to jack wells which pits encircled by bunds are made from logs of hard wood.
- **Pat system** – It is developed in Madhya Pradesh, in which the water is diverted from hill streams into irrigation channels by diversion bunds. They are made across the stream by piling up stones and teak leaves and mud.
- **Eri** – It is tank system, widely used in Tamil Nadu which acts as flood-control systems, prevent soil erosion and wastage of runoff during periods of heavy rainfall, and also recharge the groundwater.
- **Zabo or Ruza System**– It is practiced in Nagaland. Rainwater that falls on forested hilltops is collected by channels that deposit the run-off water in pond-like structures created on the terraced hillsides.
- **Phad** – It is a community-managed irrigation system in the Tapi river basin in Maharashtra. It starts with check dam built across a river and canals to carry water to agricultural blocks with outlets to ensure excess water is removed from the canals.
- **Panam keni** – The Kuruma tribe (a native tribe of Wayanad) uses wooden cylinders as a special type of well, which are made by soaking the stems of toddy palms and immersed in groundwater springs.

- **Ahar Pynes** – They are traditional floodwater harvesting systems indigenous to South Bihar. Ahars are reservoirs with embankments on three sides and Pynes are artificial rivulets led off from rivers to collect water in the Ahars for irrigation in the dry months.
- **Jhalara** - Jhalaras are typically rectangular-shaped step wells that have tiered steps on three or four sides in the city of Jodhpur.
- **Bawari** - Bawaris are unique step wells that were once a part of the ancient networks of water storage in the cities of Rajasthan.
- **Taanka** - It is a cylindrical paved underground pit into which rainwater from rooftops, courtyards or artificially prepared catchments flows. It is indigenous to the Thar Desert region of Rajasthan.
- **Khadin** – Also called dhora, is a long earthen embankment that is built across the hill slopes of gravelly uplands. It is indigenous to Jaisalmer region and similar to the irrigation methods of Ur region (Present Iraq).
- **Kund** – It is a saucer-shaped catchment area that gently slopes towards the central circular underground well. It is found in the sandier tracts of western Rajasthan and Gujarat.

Why it is Needed?

- Water is a cyclic resource which can be used again and again after cleaning.
- The best way to conserve water is its judicious use.
- A large quantity of water is used for irrigation and there is an urgent need for proper water management in irrigation sector.
- In arid areas, wherever water has been brought for irrigation, saline and alkaline tracts have emerged, rendering the soil infertile.
- Wasteful use of water should be checked. Sprinkler irrigation and drip irrigation can play a crucial role in conserving scarce water resources in dry areas.
- Drip irrigation and sprinkles can save anywhere between 30 to 60 per cent of water.
- Only 0.5 per cent—nearly half of this in Maharashtra—is under drip irrigation and 0.7 per cent under sprinklers.
- There is large-scale pollution of water as a result of industrialization and urbanisation. This trend has got to be checked.
- Although one-eighth of India is declared as food prone, there are several thousand villages in India which do not have potable Drinking Water.

- The basins should be treated as one unit for planning water utilization.
- Dry farming should be practiced in dry areas.
- The experimentation under the National Watershed Development Programme for Rainfed Agriculture is being carried on since 1986-87.

