

b. Traditional rainwater harvesting systems:

Simple local technology of constructing embankments for water impounding and an ethic that exhorts “capture rain where it rains” have given rise to 1.5 million traditional village tanks, ponds and earthen embankments that harvest substantial rainwater in 6,60,000 villages in India. These systems serve a variety of functions and encourage growth of vegetation in commons and agro ecosystems.⁶

Traditional Technology	Where it is being used / where it has been invented	Basins, where the technology seems to be useful
Paar system	Paar is a common water harvesting practice in the western Rajasthan region. It is a common place where the rainwater flows from the agar (catchment) and in the process percolates into the sandy soil. In order to access the rajani pani (percolated water) kuis or beris are dug in the agor (storage area). Kuis or beris are normally 5 metres (m) to 12 m deep. The structure was constructed through traditional masonry technology. Normally six to ten of them are constructed in a paar. However depending on the size of the paar the numbers of kuis or beris are decided. There are paars in Jaisalmer district where the kuis are in operation. This is the most predominant form of rainwater harvesting in the region. Rainwater harvested through PAAR technique is known as Patali paani.	Outer Basin
Talab /Bandhis	Talabs are reservoirs. They may be natural or can be human-made, such the lakes in Udaipur. A reservoir area of less than five bighas is called a talai; a medium sized lake is called a bandhi or talab; bigger lakes are called sagar or samand. The pokhariyan serve irrigation and drinking purposes. When the water in these reservoirs dries up just a few days after the monsoon, the pond beds are cultivated with rice	Sabarmati Basin Any other basin
Saza Kuva	An open well with multiple owners (saza = partner), saza kuva is the most important source of irrigation in the Aravalli hills in Mewar, eastern Rajasthan. The soil dug out to make the well pit is used to construct a huge circular foundation or an elevated platform sloping away from the well. The first is built to accommodate the rehat, a traditional water lifting device; the sloping platform is for the chada, in which buffaloes are used to lift water. Saza kuva construction is generally taken up by a group of farmers with adjacent landholdings; a harva, a man with special skills in groundwater	Shekhawati, Sabi, Ruparail, Bananga
Johad	Johads are small earthen check dams that capture and conserve rainwater, improving percolation and groundwater recharge. Starting 1984, the last sixteen years have seen the revival of some 3000 johads spread across more than 650 villages in Alwar district, Rajasthan. This has resulted in a general rise of the groundwater level by almost 6 metres and a 33 percent increase in the forest cover in the area. Rivers that used to go dry immediately following the monsoon have now become perennial, such as the River Arvari, has come alive.	All Basins
Naada/ Bandha	Naada/bandha is found in the Mewar region. It is a stone	Sabarmati, Sukli, Mahi

	check dam, constructed across a stream or gully, to capture monsoon runoff on a stretch of land. Submerged in water, the land becomes fertile as silt deposits on it and the soil retains substantial amounts of water	West Banas, Banas,
Rapat	A rapat is a percolation tank, with a bund to impound rainwater flowing through a watershed and a waste weir to dispose of the surplus flow. If the height of the structure is small, the bund may be built of masonry, otherwise earth is used. Rajasthan rapats, being small, are all masonry structures. Rapats and percolation tanks do not directly irrigate land, but recharges well within a distance of 3-5 km downstream. Silting is a serious problem with small rapats and the estimated life of a rapat varies from 5 to 20 years	All Basins
Chandela/Tank	These tanks were constructed by stopping the flow of water in rivulets flowing between hills by erecting massive earthen embankments, having width of 60m or more. These hills with long stretches of quartz reefs running underneath them, acted as natural ground water barrier helping to trap water between the ridges. The earthen embankments were supported on both sides with walls of coarse stones, forming a series of stone steps. These tanks are made up of lime and mortar and this is the reason why these tanks survived even after thousand years but the only problem, which these tanks are facing, is siltation of tank beds. Candela tanks usually had a convex curvature somewhere in the middle of the embankment; many older and smaller tanks were constructed near the human settlement or near the slopes of a cluster of hills. These tanks served to satisfy the drinking water needs of villagers and cattle.	
Kunds/Kun dis	A kund or kundi looks like an upturned cup nestling in a saucer. These structures harvest rainwater for drinking, and dot the sandier tracts of the Thar Desert in western Rajasthan. Essentially a circular underground well, kunds have a saucer shaped catchment area that gently slopes towards the centre where the well is situated. A wire mesh across water-inlets prevents debris from falling into the well-pit. The sides of the well-pit are covered with (disinfectant) lime and ash. Most pits have a dome-shaped cover, or at least a lid, to protect the water. If need be, water can be drawn out with a bucket. The depth and diameter of kunds depend on their use (drinking, or domestic water requirements). They can be owned by only those with money to invest and land to construct it. Thus for the poor, large public kunds have to be built.	Outer basin, Luni basin
Kuis/Beris	Found in western Rajasthan, these are 10-12 m deep pits dug near tanks to collect the seepage. <i>Kuis</i> can also be used to harvest rainwater in areas with meagre rainfall. The mouth of the pit is usually made very narrow. This prevents the collected water from evaporating. The pit gets wider as it burrows under the ground, so that water can seep in into a large surface area. The openings of these entirely <i>kuchcha</i> (earthen) structures are generally covered with planks of wood, or put under lock and key. The water is used sparingly, as a last resource in crisis situations.	Outer basin, Luni basin
Baoris/Bers	Baoris or bers are community wells, found in Rajasthan, that	Luni, Banas, Banganga,

	are used mainly for drinking. Most of them are very old and were built by banjaras (mobile trading communities) for their drinking water needs. They can hold water for a long time because of almost negligible water evaporation.	Gambhir
Jhalaras	Jhalaras were human-made tanks, found in Rajasthan, essentially meant for community use and for religious rites. Jhalaras are ground water bodies which are built to ensure easy & regular supply of water to the surrounding areas. The jhalaras are rectangular in shape with steps on three or even on all the four sides of the tank. The steps are built on a series of levels. The jhalaras collect subterranean seepage of a talab or a lake located up stream. The water from these jhalaras was not used for drinking but for only community bathing and religious rites. Jodhpur city has eight jhalaras two of which are inside the town & six are found outside the city. The oldest jhalara is the Mahamandir jhalara which dates back to 1660 AD	Outer, Luni
Nadis	Nadis are village ponds, found near Jodhpur in Rajasthan. They are used for storing water from an adjoining natural catchment during the rainy season. The site is selected by the villagers based on an available natural catchments and its water yield potential. Water availability from nadi would range from two months to a year after the rains. They are dune areas range from 1.5 to 4.0 metres and those in sandy plains varied from 3 to 12 meters. The location of the nadi had a strong bearing on its storage capacity due to the related catchment and runoff characteristics.	Outer basin

6. Source: Exploring the Impacts of Climate Variability on Traditional Agricultural Practices in the villages of THAR Desert of Western Rajasthan, Faculty of Sustainable Environment and Climate Change, CEPT University, Ahmadabad Presented by Aditi Phansalkar.

3. <http://www.rajasthan.gov.in/StateProfile>



Traditional rainwater harnessing structure in Thar Desert



Tanka in the front courtyard of a house.



Community Tanka in Shekhwati region of Rajasthan