Ancient Traditional Wisdom: Panacea for Water Crisis — M.L. Jhanwar, Institute of Environment Education & Sustainable Development, Jaipur (*Summary of K.R. Karanth Endowment Lecture*)

India has 2.4 % of world area and 17% of population but only 4 % of water resources. Per capita availability of water shall decrease to 1190 cu.m in 2050 as compared to 2309 cu.m in 1991. In Rajasthan, of the 5.19 crore of rural population, only 50% have safe drinking water and 40% do not have any water. 35,000 habitations are getting contaminated water. Of the 237 blocks only 1 is in safe category..

Recycling of water in conjunction with Rain Water Harvesting following Ancient Traditional Wisdom is the only Panacea to overcome water crisis. Our ancestors have devised and adopted different technologies in consonance with climatic and other regional conditions, some of which are described with illustrations. They harvested every drop of rain water from roof tops and stored in tanks. They harvested monsoon runoff from swollen streams and stored in various water bodies. Wells have been dug in the habitations by third millennium B.C.

The efficacy of Ancient Traditional Water Harvesting System (WHS) has been amply demonstrated, in recent years, in the Arwari Watershed in Alwar district, Rajasthan. Arwari watershed comprises 2 sub-watersheds viz; Arwari (covering 279.85 sq.km) and Bidila (covering 208.85 sq.km), both constituting the catchment area of Sainthal Sagar. The Arwari sub-watershed has been treated by way of construction of 228 Johads by Tarun Bharat Sangh along with people's participation whereas Bidila sub-watershed has been partially treated by way of construction of only 91 Johads. Structures like Johads are traditional water harvesting structures based on ecology of the area, which are constructed at the base of a hill at the junction of two first order streams. These serve dual purpose of storing rain water and recharge of groundwater through slow percolation.

Water balance studies reveal that in treated Arwari sub-watershed, the

groundwater recharge for 2007 was 14.2 MCM as compared to 8.1 MCM in partially treated Bidila sub-watershed. Also groundwater recharge per unit area was 92.8 m³/km² in Arwari as compared to 56.8 m³/km². Consequent to this the average groundwater level rise (pre-post monsoon) is 4.64 m and 2.84 m in treated and partially treated areas respectively. Consequent to availability of more ground and surface water, in treated area, the area under Rabi crop increased by 61% in 9 years as compared to 40% in the partially treated area.

Due to increased soil moisture around johads, the fodder has naturally increased. Johads also provided easy drinking water for cattle. Both these factors had impact on milk production. The johads have reduced the drudgery of women folk by providing drinking water near home, by saving time and energy in fetching water. Peoples' participation in the construction of johads has developed self confidence.