

WATER USE EFFICIENCY IMPROVEMENT

Water is lifeblood of Pakistan agriculture and economy. Its efficient use is a necessity and not an option. In view of global climatic changes water availability in Pakistan through river system is constantly on decrease. It has decreased from 104 MAF (Millions acres feet) 80 MAF in the last five years. The main causes of such decrease are beyond the control of humans, therefore, water research is required to study such variables to ensure its efficiency in-terms of productivity per drop of water for sustained food security.

Water use efficiency research focused on farm layouts such as use of raised bed and sprinkler irrigation system as well as increasing system based capacities such as management of rodokohi system.

Raised Bed Farming

Raise bed farming produced 40% and 25% more economic yield respectively in case of maize and wheat as compare to flood irrigation in Mardan, NWFP. The water saving in maize was recorded to be 35-40%. Based on the success, the GOP has launched Rs. 500 Million development project.

Sprinkler Irrigation for Fodder Production in Barani Areas

Sprinkler irrigation for fodder production produced 40% higher water use efficiency under rainfed condition in Barani areas.



Rodi Kohi farming system

There are about 2.00 m ha potential agricultural areas under Rodi Kohi farming system which is outside the Indus basin irrigation system. The Rod Kohi area is principal source for oilseeds and pulses growing in Pakistan.

Improvement of water conveyance system under Rod Kohi saved the water by 50% and helped to increase the cropping intensity from 80-130% in D.G Khan area. The flood water which used to cause damage to crops and property, in Rod Kohi areas, crops like cotton and mung beans were successfully introduced in the areas. The introduction of unconventional water distribution system through Rod Kohi areas helped to make availability of the water for stock use and human consumption in drought prone areas.



Rodi Kohi water distribution systems

Global Warming Impacts

Monitoring and evaluation of global warming impacts on future water availability in Pakistan is being ensured by establishment of a modern GIS facility at WRII, NARC.