MICRO-CATCHMENT RAINWATER HARVESTING: A SUSTAINABLE APPROACH FOR SUSTAINABLE AGRICULTURE IN BARANI AREAS CLIMATE CHANGE SCENARIO.

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Abstract

Water is a most variable factor for sustainable farming in rainfed areas, the rainfall pattern is highly erratic and uncertain in Barani areas (Rain fall dependent area), and rainfall concentrated in monsoon season (about 70 % of the total annual rainfall). This water is lost as run off and need to harvest currently runoff of water as possible either on the surface or underground. Stored water can be used as supplemental irrigation to act as a buffer against crop failure during dry seasons. Potential for rainwater harvesting was studied in Chakwal district at Kalar kahar tehsil. The study area Saigol Farm comprised of 75 acres with around 12000 plantations of different fruits like olive, citrus, loquat, ber etc. The Micro-catchments (semicircular or U shaped) were studied on slope varying from 3-10 % for rainwater harvesting potential. The technology was demonstrated under Watershed Rehabilitation and Irrigation Improvement Project implement by Soil and Water Conservation Research Institute (SAWCRI), Chakwal with the financial support of ICARDA and USDA. It was found that 6-7 irrigations were saved per year and also there is a saving of Rs 50 per plant/annum due to these micro-catchments. The farmer has saved around 2 lacs rupees per year in terms of reduced supplement irrigations and labor cost. The total cost was reduced to approximately 1/3rd of the previous cost when this intervention was not practiced. The farmer fetched around 50000 rupees in a season through growing of vegetables on these micro-catchments with same rainwater/irrigation harvested/applied and without incurring any additional expenses. The technology showed great potential and hopefully revolutionize the agriculture of Barani areas on sustainable basis to mitigate the effect of climate change.