Enhance water use efficiency in Agriculture

Category : Minor or Micro Irrigation

Introduction

1. **Diggi cum Drip/Sprinklers:-** In canal command areas i.e. IGNP, Gang Bhakra and SidhmukhNohar Irrigation Project, the diggis are used to store the surplus canal water at the turn of the farmer and used to irrigate the crops through sprinklers or drip system when canal is not in operation. This ensures timely irrigation as well as improves water use efficiency by the use of sprinklers and drips in canal areas.

2. **Farm Ponds cum Sprinklers (Khet Talai earthen):-** Rain water harvesting structures particularly the farm ponds are useful in runoff water collection during rainy season which is used for life saving irrigation during *Kharif* when there is long dry spell or normal irrigation in *Rabi* season. The runoff water collected in such farm ponds will not only be utilized for irrigation but also help in recharging the ground water level.

3. **Water Storage Tanks:-** Water Storage Tank ensures 'as and when required' irrigation facility. This become vital in well and tube well irrigated areas where water is drawn from 300-600 feet depth and electricity is in short supply or available during nights, in such cases water storage tanks acts as reservoir for storage of water from wells / tube wells which ensures as-and-when-irrigation in required quantities.

4. **Pipeline programme:-** Irrigation pipeline is very important in minimizing conveyance losses of water from the source to the field. The unlined or Kaccha Irrigation channels cause substantial losses of water through percolation, seepage and weed infestation. The State Govt. popularized irrigation pipeline for increasing the water use efficiency and minimizing conveyance losses of water from the source to the field.

Lal Singh Beniwal become 'NAZEER' by adopting the Diggy-based planned and controlled irrigation system

Lal singh Beniwal is a small farmer of hanumangarh district tehsil nohar village 20 NTR, is a Agriculture department technical follower since 2000. Mr. Bainiwal has only 3 hectares irrigated land and irrigation facility is available for the farm from the Bhakra irrigation system. Due to the inter-state water agreement, the farmers are not able to make optimum utilization of available irrigation water due to Non-availability of irrigation water as per the requirement of the crop. Nearly 50 lakh liters of irrigation water may be available to the farmer by the Bhakra irrigation system in normal conditions.

In the past, Mr. Beniwal was sowing crops only in Kharif with 2 hectares and Rabi 1 to 1.5 hectares on his agricultural land with the conventional method of irrigation and due to non-availability of irrigation water at critical crop stages, the analog output was not getting from traditional crop pattern. The construction of Diggi for irrigation purpose by Mr. Beniwal for efficient water utilization, the drip irrigation system was established in 2 ha. area and the crops giving more net profit per unit area and per drop of irrigation water in place of conventional cropping pattern. Present cropping pattern adopted by Mr. Beniwal are as follows:-

Turnip/Radish + Chilli

Chapanakaddu - tomato-potato

Castor (green manure) - Potato / Cabbage/ Cauliflower

Bhindi - Peas-Onions / Garlic

Castor + Cucurbits such as snack gourd/ Cucumber / water melon as intercropping.

The farmer’s crop intensity was only 116 percent before the adoption of the diggi based irrigation system and the annual income of farmer was only fifty to sixty thousand . After adopting the planned and controlled system of irrigation, the cropping intensity in the farmer's field is 275 percent. There was uncertainty of net profit in the past but after the adoption of the planned and controlled irrigation system, the farmer has earned a net income of 5-6 lakh rupees per annum. The annual increase almost ten times more. Thus, Farmer is demonstrate an a example of the water management for other farmers nearby area and Mr. Lal Singh is nominated by NABARD for the brand ambassador of Farmer Club for Hanumangarh District.