

Micro irrigation to increase the area and production of crops in Kutch, Gujarat

Introduction :

Krishi Vigyan Kendra, Mundra is implementing NICRA project in Bhalot village in Kutch district of Gujarat. The major portion of crop production is under rainfed condition. The source of irrigation in Bhalot village is open well. Irrigation facility in the field crop is limited only during good rainfall year. During scarcity year, open wells remained empty due to no seepage collection of underground water. Moreover, farmers were wasting the irrigation water by flood irrigation method. There was not a single drip set in the village. Hence, inefficient use of irrigation water was the main cause for the limited crop area under irrigation.

Intervention :

After identification of major problems, KVK decided to conduct different programmes in Bhalot village under NICRA project to increase the water use efficiency and thereby to increasing crop area under irrigation. Awareness among farmers was created by frequent meetings, trainings and exposure tours. Under NICRA project KVK implemented major two programmes.

- (i) Preparing low cost checkdams for rainwater harvesting and to control soil erosion.
- (ii) Installation of drip irrigation on individual farmers' filed.

In convergence with Gujarat Governments' programmes on promotion of micro irrigation, farmers were motivated to avail 50% subsidy. Initially, during first year (2011-12), 12 farmers adopted drip irrigation system and covered total 13 ha area under different crops. Farmers could get success to increase area under irrigation due to surplus irrigation water. Moreover they got success to grow Bt. Cotton before onset of monsoon.



Significant Output with percent increase :

Earlier before NICRA project work, area under drip irrigation was nil. As per the result of demonstration, average increase in cotton yield due to drip irrigation is 26%. Moreover, during the first year of drip installation in 13 ha area by 12 farmers additional 12 ha area could brought under irrigation and farmers got success to grow Bt. Cotton during pre monsoon. Looking to this success and benefits of drip irrigation. Today during 2014-15 total 82 farmers have adopted drip irrigation in 108 ha area. Overall impact observed in the village are;



- 1) Earlier, pre monsoon sowing of Bt. Cotton was not possible because of less quantity of water in open well. But during 2014-15 total 65 farmers could grow Bt. Cotton in 80 ha area before monsoon.
- 2) Area under Castor and Bt. Cotton is increased after adoption of drip irrigation. Almost 62 ha area of Cotton and 81 ha area of Castor is increased due to drip irrigation.
- 3) Total 148 ha area under irrigation is increased due to adoption of drip irrigation.
- 4) Total rainfall during 2014-15 was very less (375 mm). it was 145 mm less as compare to average annual rainfall of last decade of the district. Irrigation water in open well was very less. Even though, farmers got success to grow Bt. Cotton in 42 ha area, Castor in 23 ha area and vegetable in 6 Ha area. Those farmers who have no drip system could not successfully produce Castor crop.
- 5) 14 farmers could grow fodder crop even in Summer – 2015.
- 6) 3 farmers have grown Pomegranate under drip irrigation. Earlier, there was not a single farmer adopted fruit crop plantation.

Economic feasibility :

- a) Average 25% yield of Bt. Cotton was increased in last 2 years due to drip irrigation (80 ha area of Bt. Cotton under drip irrigation during 2014-15). Average 6.00 Q yield / ha increased under without drip irrigation.
- b) Total 480 Q Cotton yield increased due to drip system in the village. The total value is Rs. 19.20 lakh.
- c) Additional 1550 Q Cotton & Castor yield is increased due to additional area could be irrigated. The value is Rs. 62.00 lakh.
- d) Thus, annual income of the village farmers is increased Rs. 81.20 lakh from only Cotton & Castor crop due to drip irrigation.

Impact / Horizontal & Vertical spread :

Earlier before NICRA project work, area under drip irrigation was nil. After intervention 100% farmers were adopted drip irrigation system in their field. Looking to benefit of MIS in respect of saving of irrigation water and production of crop surrounding villages like; Lifra, Bagada, Chandiya, farmers were also motivated to adopt this technology.

