



## **Impact Of Farm Pond Technology On Economic Development Of The Farmers In Khammam District Of Andhra Pradesh**

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### **ABSTRACT**

*The study was conducted in Nacharam cluster villages of Khammam district of Andhra Pradesh under NICRA (National Initiative on Climate Resilient Agriculture) Project funded by ICAR. A few technologies were adopted in this project under different thematic areas like farm ponds under natural resource management. By adopting farm pond technology, the selected farmers in the project area, the productivity, net income and economic status of the farmers have been increased.*

**Key words:** *Climate Resilient Agriculture, Natural Resource Management, Farm pond Technology.*

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### **INTRODUCTION**

The productivity of different crops become uncertain due to untimely setting of monsoons. The use of water harvesting and recycling of rainwater could improve the productivity of different crops by giving scope for supplemental irrigation. We have selected four farmers for farm pond technology. The number of farm ponds were four in which two of them are with the size of 25 x 25 x 3 m. and the other two are with the size of 22 x 22 x 3 m. The capacity of farm ponds was 14.61 lakh liters and 10.91 lakhlitres, respectively. Various crops grown under farm ponds were cotton, chilli and fodder grass. The area covered in each demonstration was cotton-2.8 ha, chilli-0.6 ha, and fodder grass - 0.4 ha. The harvested water was given to various crops at critical stages like flowering, pod formation etc. Three metres of rain water was harvested in farm ponds thrice in rainy season. In view of the above, the study has been formulated with the following objective. To work out the effect and economics of farm ponds

### **MATERIALS AND METHODS:**

Study area: Field experiments were conducted from 2011 to 2014 at Enkoormandal of Nacharam cluster villages, 70 km away from the district head quarters of Khammam. The study area comes under Khammam district. The annual rainfall varies from 950 mm to 1035 mm, the monsoon commences in June and ends in November with the peak rainfall period between August and October. The area has experiencing continuous drought from the last several years. After continuous discussions with the farmers, four farmers were selected for farm ponds, under NICRA project at Nacharam cluster villages. Before introduction of NICRA interventions, the farmers were not aware of the concept of digging farm ponds specially for water harvesting. Due to continuous efforts of scientists of KVK, the farmers readily accepted the NICRA intervention (Farm pond Technology), after field visits and interaction with the beneficiaries of the neighboring villages. Four farm ponds were dug with the partial contribution of the farmers. On an average the ponds were 22 m. long, 22 m. wide and 3 m. deep with 1:3 side slopes. This means creating water storage of 1,90,000 litres. Each pond has inlet and outlet channels. The inlet channel has a silt trap and stone pitching was done to protect the inlet from erosion.

### **RESULTS AND DISCUSSION**

Supplemented irrigation can be fulfilled by the farm ponds. By digging of farm ponds the harvested water is utilized at critical stages of various crops like cotton, chilli and fodder crops. So that increased Yields of various crops like cotton-22.5 q/ha, chilli-17 q/ha, foddergrass-8t/0.4 ha. Income of various crops is 44,000/- from cotton, 68,200/- from chilliRs.10,900/- from fodder grass. Harvested water from farm

ponds is utilized at critical stages of various crops there by yield of the crops were increased. At the same time, income from various crops was increased. Fish rearing in farm ponds is additional income to the farmer and by excavation of farm ponds, recharge of bore well up to 4.5 ft was happened and also enhance in ground water level up to 15 ft. Due to all these benefits, the economic status of the farmers was improved.

**Table: Impact of farm pond technology on yields of various crops**

Treatment	Crop	Yield (kg/ha)	Irrigation	Cost of cultivation (Rs/ha)	Gross income (Rs/ha)	Net income (Rs/ha)	B:C ratio
Farmers practice	Cotton	2000	Rain fed	40000	76000	36000	1:1.9
Farm pond technology	Cotton	2250	Utilization of farm pond water in flowering and boll formation	41250	85500	44250	1:2
Farmers practice	Chilli	4120	Bore well	125000	288750	163750	1:2.31
Farm pond technology	Chilli	4250	Due to lack of power bore well water utilized the farm pond water	12700	297500	170500	1:2.34
Farmers practice	Fodder	10000	Rain fed (Two cuttings in a season)	7500	20000	12500	1:2.6
Farm pond technology	Fodder	20000	Farm pond (Multi cuttings in a season)	12750	40000	27250	1:3.1

#### Impact points :

1. Bumper harvest of water in farm ponds during 2013-14.
2. Recharge of bore well up to 4.5 ft due to farm ponds.
3. Increase in groundwater level 15 ft due to farm ponds in summer 2014.
4. Farm pond size: 25 x 25 x 3 m. Capacity: 14.61 lakh lits.  
Capacity: 10.91 lakh lits. Farm pond size: 22 x 22 x 3 m.

Table- 1 clearly depicts that due to the initiatives of NICRA project, funded by ICAR under the theme natural resource management (farm pond technology), with a minimal increase in cost of cultivation of cotton to the extent of Rs.1250/-, the gross income increased by Rs.9500/-, whereas in chilli with a minimal increase of cost of cultivation to the extent of Rs.2000/-, the gross income increased by Rs.8750/- and net income by Rs.6750/- similarly. In case of multi cut fodder in preference to the single cut fodder with the marginal increase in the cost of cultivation to the extent of Rs.5250/-, the gross income increased by Rs.2000/- and net income of Rs.14740/-, thereby proving increase in the benefit cost ratio of farm pond technology.

#### CONCLUSIONS

From the study conducted for the period from 2011-2014, it is proved beyond any doubt that the bold initiatives of NICRA such as farm pond technology helped the farmers in improving their economic status.

#### REFERENCES

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