

Original Research Article

<https://doi.org/10.20546/ijcmas.2020.912.155>

## Perception of Farmers about Farm Ponds Constructed under Krishi Bhagya Yojane

B. Sidram<sup>1\*</sup>, Shivanand Kammar<sup>1</sup>, Devendra Biraladinni<sup>2</sup> and Ravi Smabrani<sup>1</sup>

<sup>1</sup>Department of Agricultural Extension Education, <sup>2</sup>Department of Agricultural Economic, University of Agricultural Sciences, Raichur, India

\*Corresponding author

### ABSTRACT

#### Keywords

Farm pond, perception, Krishi Bhagya Yojane, farmers

#### Article Info

##### Accepted:

12 November 2020

##### Available Online:

10 December 2020

A study on Perception of farmers about farm ponds constructed under Krishi Bhagya Yojane was conducted in Raichur district of north Karnataka. All the five taluks of Raichur district namely, Sindanoor, Manvi, Devadurga, Raichur and Lingasoor were selected for the study. One hundred and twenty respondents were selected with simple random sampling procedure as representative of each and every taluk. The findings of the study revealed that, the majority (71.67 %) of the farmers had perceived that, Krishi Bhagya Yojane Scheme was very good scheme for dry land farmers. Majority of farmers (72.50 and 71.67%) perceived that, "More depth is required" and "Sizes are appropriate for dry land farming", respectively. While, 28.33 and 13.33 per cent of farmers perceived that, "Size is not sufficient to store required amount of water" and "Farm pond occupies large area, not suitable for marginal farmers", respectively. Farm ponds are suitable for sprinkler and drip irrigation was the perception of 84.17 per cent of farmers and only 15.83 per cent of farmers had perception that flood irrigation can also be done. Majority of farmers (76.67%) perceived that farm ponds constructed under Krishi Bhagya Yojane suitable to all kind of soils as they providing polythene sheets for red soil farmers.

### Introduction

Climate change has reshaped and altered the farming system in India. Due to climate change the pattern and magnitude of rainfall has been diversified throughout the country. Lower rainfall and increased release of green house gasses has been increased the global temperature by 0.9 °C since from nineteenth century and expected to be 1.5 °C increase by 2050. Farming is directly depending on climate change and climatic factors, the

changes in rainfall, temperature and CO<sub>2</sub> concentration has direct effect on agriculture production and productivity. The country may face climate change in future predicting more frequent floods, droughts, extreme events of rainfall etc. with increased temperature (IPCC, 2007). The variation in precipitation received affects the agriculture production in turn leads to the food insecurity. India receives about 4000 billion cubic metres (BCM) of precipitation every year, of which 1869 BCM flows as average annual run-off in

various river systems of the country. Due to geographical limitations, only about 690 BCM of surface water can be utilized in addition to 432 BCM of replenishable groundwater, out of which only 63% of the surface water is utilized (Srinivasa Rao, *et al.*, 2017)

The 40 percent of food grain production is contributed by rainfed area in the country but rainfed areas suffer from severe land degradation and poor socio economic base of farmers. Irrigation water is the one of biggest challenge in these areas, to overcome from this challenge number of irrigation water management techniques are available, one among them is construction of farm ponds. These are the structure constructed with polythene cover to collect and store the rain water which will be used in non rainy days for agriculture purpose. Several researchers have shown that on-farm runoff collection dugout farm ponds and supplemental irrigation can increase and stabilize the crop production (Krishna *et al.*, 1987). There is an abundant scope and opportunity for harvesting excess runoff in the rainfed region in different states of the country (Wani, *et al.*, 2003, Sharma *et al.*, 2009). Keeping these points in view Karnataka state Government in the year 2014-15 has initiated the Krishi Bhagya Yojane in which farmers will be given incentives for conservation of soil moisture in their fields by constructing farm ponds, installing diesel or solar pumpsets to lift water and drip or sprinkler system, with objective to promote the farm ponds and better utilization of rain water. This scheme is meant for farmers in rain-fed areas to have irrigation facilities for their dry lands through rainwater harvesting technique. To increase the adoption of farm pond construction among the farmers it is very important to know the perception and their opinion about the farm ponds. Hence, a study was conducted to know the perception of farmers about the farm ponds constructed

under Krishi Bhagya Yojane in Raichur district.

## **Materials and Methods**

All the farmers who constructed the farm ponds in the Raichur district under the Krishi Bhagya Yoojane were constituted the population for the study. A taluk wise list of farmers who constructed farm ponds under Krishi bhagya Yojane were obtained from JDA office, Raichur and from ADA office of respective taluks. From the list so prepared 24 farmers from each taluk were selected by simple random sampling procedure thus the total simple size for the study constituted 120 farm pond constructed farmers. Data were collected by personnel interview method using structured interview schedule. The ex-post-facto research design was used for the study. This design was considered appropriate as the phenomenon had already been occurred. The present study was an empherical one, in which the researcher did not have direct control over independent variables because their manifestations had already been occurred.

The number of respondents selected from each taluk for the study is given in the Table.1.

## **Development of schedule to measure the perception of farmers**

In the present study, perception of farmers regarding farm ponds constructed under Krishi Bhagya Yojane is operationalized as an integrated process in which attention, sensation and attachment of meaning to the farm pond construction and usage by the farmers in crop production.

By consultation with scientists in the field of Agricultural Extension, Psychology and Agronomy eight components and 26

perceptions about eight components were framed.

For all 8 components and 26 perception statements, relevancy and validity were tested and finalized with help of experts. The perceptions of farmers were quantified by using frequency and percentage.

**Results and Discussion**

**Perception of farmers about farm ponds constructed under Krishi Bhagya Yojane**

It is evident from the data in Table 6 that majority of the farmers (71.67 %) had perception about farm pond construction scheme that “ very good scheme for dry land farmers” whereas, 40.00 and 37.50 per cent of farmers had perception that, “Not reaching the exact needy farmers” and “Scheme should be extended to irrigated farmers”, respectively. The realization of use and benefit from farm pond might be the reason for developing these of perceptions.

Majority of farmers (72.50 and 71.67%) perceived that, “More depth is required” and “Sizes are appropriate for dry land farming”, respectively. While, 28.33 and 13.33 percent of farmers perceived that, “Size is not sufficient to store required amount of water” and “Farm pond occupies large area, not

suitable for marginal farmers”, respectively. This may be due to lack of knowledge regarding the crop selection and utilization of farm ponds.

Farm ponds are suitable for sprinkler and drip irrigation was the perception of 84.17 percent of farmers and only 15.83 percent of farmers had perception that flood irrigation can also be done.

Majority of farmers (76.67%) perceived that farm ponds constructed under Krishi Bhagya Yojane suitable to all kind of soils as they providing polythene sheets for red soil farmers. The facilities provided under the scheme are the reason for the developing this perception.

With respect to the usefulness of farm pond same percent of farmers i.e. 80.00 percent had perception that useful to small land holdings and useful to grow only millets/crops which require less water. The storage capacity and percolation of water might be the reason for this kind of perception.

More than half (57.50 %) of the farmers had perceived that, “Due to availability of water positive attitude develops”. Water is the essential for agriculture, it decides the success or failure of the agriculture, hence the reason for developing this perception.

**Table.1** Taluk wise distribution of respondents

District	Taluks	No. of respondents selected
Raichur	Raichur	24
	Manvi	24
	Lingasoogur	24
	Sindhanoor	24
	Devadurga	24
	<b>Total</b>	<b>120</b>

**Table.2** Perceptions of farmers about farm ponds constructed under  
Krishi Bhagya Yojane n=120

Sl. No	Components	Perception	F	%
1.	About scheme	a. Scheme suitable for irrigated areas	34	28.33
		b. Not reaching the exact needy farmer	48	40.00
		c. Very good scheme for dry land farmers	86	71.67
		d. The scheme need to be extend to irrigated farmers also	45	37.50
2.	Farm pond size	a. Size is not sufficient to store required amount of water	34	28.33
		b. Sizes are appropriate for dry land farming	86	71.67
		c. More depth is required	87	72.50
		d. Farm pond occupies large area, not suitable for marginal farmers	16	13.33
3.	Irrigation method	a. Suitable for sprinkler and drip Irrigation	101	84.17
		b. Flood irrigation can also be done	19	15.83
4.	Suitability	a. Not suitable to red soil if polythene sheet is not used	57	47.50
		b. suitable to black soil	63	52.50
		c. As they providing polythene sheet, suitable to all type of soil	92	76.67
5.	Usefulness	a. Useful to grow only millets/crops which require less water	96	80.00
		b. By farm pond only one time irrigation can be provided	69	57.50
		c. Farm pond water can be used only for chemical spray and farm animals water drinking purpose	48	40.00
		d. Useful to small land holdings	96	80.00
6.	Cropping pattern change	a. No scope to go for cropping pattern change	64	53.33
		b. Cropping pattern change occurs	33	27.50
		c. With assured water source intensive cropping pattern can adopted	88	73.33
7.	Attitude change	a. Due to availability of water positive attitude develops	69	57.50
		b. Does not have any impact on attitude change	51	42.50
		c. As farm ponds water source is rain, if rain not come it lead to negative attitude building towards farming	45	37.50
8.	Yield	a. Yield level increases drastically	20	16.67
		b. Facilitates to get sustainable yield	41	34.17
		c. No variation in yield level	59	49.17

F-Frequency %-Percentage \* Multiple responses

**Table.3** Multiple regression analysis of independent variables towards perception of farmers regarding farm pond N=120

Sl. No.	Characteristics	Regression Coefficients	Standard Error	't' Value
X <sub>1</sub>	Age	-0.122	0.061	-2.253*
X <sub>2</sub>	Education	2.412	0.495	4.699**
X <sub>3</sub>	Family Type	1.894	1.112	1.818
X <sub>4</sub>	Land Holding	0.135	0.112	1.241
X <sub>5</sub>	Farming Experience	0.287	0.034	5.913**
X <sub>6</sub>	Annual Income	0.051	0.019	2.093*
X <sub>7</sub>	Innovative Proneness	0.713	0.399	1.598
X <sub>8</sub>	Management Orientation	0.253	0.109	1.831

R<sup>2</sup> = 0.7195 DF= (11, 229) \* Significant at 5 per cent level \*\* Significant at 1 per cent level

With respect to perception regarding yield majority of farmers (49.17 %) had perceived that “No variation in yield level” by construction of farm pond. Continuous drought since from last three year and non effective utilization of farm ponds in the study area might be the reason for the perception.

**Contribution of independent variable to the perception of farmers regarding farm pond usage**

The results of the regression analysis presented in Table 3. From the table it could be seen that the coefficient of multiple determination (R<sup>2</sup>) of the independent variables was 0.72 indicating that 72 per cent of the variations in perception about farm pond was explained by independent variables included in the function.

It could be seen from the table that the regression coefficient of age of the farmers in years was found to be negative and significant relation with the perception of farmers. From the estimated function it was found that with one year increase in the age of the farmer decreases the perception by 0.114 units/score. This clearly indicated that old age farmers less enthusiastic to know understand and perceive the things.

Similarly the regression coefficient of education, farming experience and extension contact was found significant at one per cent level. It was found that by increasing education and farming experience by one year, perception regarding farm pond would increase by 2.387 and 0.272 units/score, respectively. This could be attributed to the fact that education of the farmers favours acquisition of perception and widens the horizon of perception, high farming experience obviously makes him to perceive correctly about farm pond compared to other farmers.

Annual income were important in perceiving regarding farm pond as revealed by the regression result also found to be significant at five per cent level. It shows that one unit increase in annual income would increase the perception regarding farm pond usage by 0.042 and units/score. This indicted that high annual income have an influence on perception of farmers regarding farm pond usage.

**Implications of the study**

Based on the findings of the research study following implications were drawn.

1. The findings of the study indicated that, increased education level have positive impact on the perception of the farmers. Hence, efforts need to be concentrated towards educating the farmers and their families to strengthen them in perceiving and utilizing the technologies developed by the scientific community for getting higher yield and increasing the profit from the farm business.
2. The findings in table 2 clearly indicates that, farmers having some negative perceptions like “Not reaching the exact needy farmers”, “Size is not sufficient to store required amount of water”, and “Farm pond occupies large area and not suitable for marginal farmers”. Hence, extension efforts are essential for in motivating and convening the farmers towards the benefits of farm ponds during the water shortage period.

## References

- IPCC. 2007. Special Report on Managing the Risks of Extreme Events and Disasters to Advance Climate Change Adaptation. <http://www.ipcc.in>
- Krishna, J. H., Arkin, G. F., and Martin, J. R. 1987. “Runoff impoundment for supplemental irrigation in Texas.” *Water Resources. Bulletin.*, 23(6), 1057-1061.
- Srinivasa Rao, R. Rejani\*, C. A. Rama Rao, K. V. Rao, M. Osman, K. Srinivasa Reddy, Manoranjan Kumar, Prasanna Kumar, 2017, Farm Ponds for Climate-Resilient Rainfed Agriculture, *Current Science*, 112 (3): 471-477
- Wani, S. P., Pathak, P., Sreedevi, T.K., Singh, H.P and Singh, P. 2003. Efficient management of rainwater for increased productivity and groundwater recharge in Asia. Book chapter in *Water Productivity in Agriculture: Limits and Opportunities for Improvement* edited by Kijne, *et al.*, 2003. CABI publishing, Cambridge, USA.

### How to cite this article:

Sidram, B., Shivanand Kammar, Devendra Biraladinni and Ravi Smabrani. 2020. Perception of Farmers about Farm Ponds Constructed under Krishi Bhagya Yojane. *Int.J.Curr.Microbiol.App.Sci.* 9(12): 1260-1265. doi: <https://doi.org/10.20546/ijcmas.2020.912.155>