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National Academy of Agricultural Science (NAAS) Rating : 3.03

Impact of Farm Pond on the Benificiary Farmers of Maharashtra

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ABSTRACT: *The study revealed that 50.71 per cent respondents were in middle age, semi-medium land holding having area 2.01 to 4.00 ha (41.42%), having 1.01 to 2.00 ha area under protective irrigation (42.14%), having very useful utility (70.72%). The farm pond impact also emphasized on change in annual income from Rs.75001 to 150000 increases from 10.73% to 27.85%. Also the respondent having annual income of Rs. 300001 & above increased from 22.85 % to 27.14%. revealed that mean of annual income (Rs.2.53 lakhs) cropping intensity (115.03%), productivity of major crops viz; tur, wheat, jowar, and gram (22.63 q/ha), (28.78 q/ha), (22.80 q/ha) and (15.45 q/ha) respectively of beneficiaries after construction of farm ponds were higher than the mean of annual income (Rs.2.16 lakhs), cropping intensity (106.11%), productivity of major crops viz; tur, wheat, jowar and gram (16.84 q/ha), (22.11 q/ha), (17.89 q/ha) and (12.91q/ha) respectively before construction of farm ponds. It was also found that there was a change in cropping intensity, productivity of major crops viz; tur, wheat, jowar and gram, annual income to the tune of 8.91, 34.38, 30.16, 27.44, 19.67 and 17.11 per cent respectively after construction of farm ponds. The releational study with regard to overall impact, the independent variables viz land holding, area under protective irrigation, risk preference and extension contact showed positive and highly significant relationship with overall Impact of farm pond. The finding pertaining to constraints such as farm pond sedimentation followed by disturbances of cow, pet & wild animals, with regard to getting subsidy's, unawareness about farm pond scheme, high rate of evapotranspiration during summer season, large area in hecters of productive land goes under farm pond construction.*

Key word: *Impact, farm pond, crop productivity, cropping intensity, Profile.*

Farm ponds are created in various states of India along with Maharashtra. The main aim of construction farm pond is to made the availability of protective irrigation at critical growth stages of crop. In Maharashtra through various scheme of government the farm ponds are allotted to farmers namely viz. National Horticultural Mission, MGNERGA, *Mahatma Phule JalAbhiyan* etc. The farm pond have a great impact on changing the crop productivity as well as cropping intensity. It also help in changing the economic situation of farmers. The irrigated area also increases due to the construction farm pond. In view of this the present study was conducted in the year 2014 with the objectives to study the socio-economic profile of farm pond respondents, to study the impact in terms of change in productivity, production and income and to study the relationship of independent variables with dependent variable.

MATRERIALS AND METHODS

The present study was undertaken in Madha and Karmala tahsils of Solapur district haveing maximum farm ponds. There was 14 villages selected from two tahsils along with 10 farmer from each village. Thus 140 respondent farmer were selected. Primary data were collected with the help of pretested interview scheduled specially designed in local language for the purpose. Simple statistical tools like mean, percentage, mean standard deviation and Karl Pearson's correlation coefficient were used for the analysis of data.

RESULTS AND DISSCUSSION

It is revealed from Table 1 that, 50.71 per cent respondent belongs to medium age group and 41.42 per cent had highschool level education. The 41.42 per cent had land holding 2.01 to 4.00 hecters and

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61.42 per cent have nuclear type of family. The 82.42 per cent of the farmers had medium type of social participation and 42.14 per cent had 1.01 to 2.00 ha of area under protective irrigation. Also 69.28 per cent farmers have medium level of extension contact while 70.72 per cent of respondent had high level of utility perception of farm ponds. These results were similar with the findings of Bagdi *et al* (2001) and Bhange *et al* (2005).

Table 1
Socio-economic profile of farm pond respondents

Charactres (N =140)	*Frequency*	*Percentage*
Age		
Young (upto 35 years)	30	21.42
Middle (36 to 50 years)	71	50.71
Old (51 & above years)	39	27.87
Education		
Illiterate (no schooling)	06	4.235
Primary school (1-4)	18	12.86
Middle school (5-7)	27	19.29
High school (8-10)	58	41.42
College (11 & above)	31	22.15
Land Holding (ha)		
Marginal (upto 1ha)	28	20.00
Small (1.01-2.00)	30	21.42
Semi-medium (2.01-4.00)	58	41.42
Medium (4.01-10.00)	21	15.00
Large (10.01 7 above)	03	02.14
Family type		
Nuclear (1)	86	61.42
Joint (2)	54	38.58
social participation		
Low (upto 5)	15	10.72
Medium (6 To 8)	115	82.14
High (9 & above)	10	07.14
Area under protective irrigation		
Low (upto1 Ha)	53	37.86
Medium (1.01-2.00)	59	42.14
High (2.01 & above)	28	20.00
Risk preference		
Low (upto 13)	29	20.72
Medium (14to 20)	87	62.14
High (21 & above)	24	17.14
Extension contact		
Low (upto 21)	24	17.15
Medium (22 to 29)	97	69.28
High (30 & above)	19	13.57
Utility perception		
Low (upto 33.33)	12	8.57
Medium (34 to 66)	29	20.71
High (67 & above)	99	70.72

Change in annual income

Table 2
Distribution of respondents according to their annual income

Sr. No	*Annual Income (Rs.)*	*Respondents (N = 140)*			
		Before farm ponds		*After farm ponds*	
		Frequency	*Percent*	*Frequency*	*Percent*
1.	Up to 75,000	29	20.71	00	00
2.	75001 to 150000	15	10.73	39	27.85
3.	150001 to 225000	46	32.86	34	24.28
4.	22500-300000	18	12.85	29	20.73
5.	Above 300000	32	22.85	38	27.14
	Total	140	100	140	100
	Mean	216357.14		253386.10	17.11

Distribution of the beneficiary farmers according to their annual income in both the categories i.e. before and after construction of farm ponds presented in Table 2. It was found that relatively higher proportion (32.86%) of the beneficiary farmers, in before category were having their annual income Rs. 150001 to 225000/- followed by, whereas equal proportion of the respondents (22.85%) were having their annual income in the ranging above Rs. 300000, whereas (20.71%) per cent were having annual income up to Rs. 75000 and only (12.85%) and (10.73%) of the beneficiary farmers having their annual income ranging from Rs. 225001 to 300000 and Rs. 150001 to 225000 respectively.

After the construction of farm ponds majority of beneficiary farmers (27.85%) were having their annual income in range of Rs. 75001 to 150000/-, followed by (27.14%) beneficiaries found in the category of above Rs.300000, whereas, (24.28%) were having annual income ranging from Rs. 150001 to 225000/- and (20.73%) of the beneficiary farmers having their annual income ranging from Rs. 225001 to 300000/-.

The per cent change in annual income after construction of farm pond was 17.11 per cent.From the above findings it can be noted that after construction of farm ponds the annual income of beneficiaries were increased. These findings are supported by the findings of Desai R. (2005)

OVERALL IMPACT OF FARM POND ON BENIFICIARIES

A cursory look at Table 3 revealed that mean of annual income (Rs.2.53 lakhs) cropping intensity (115.03%), productivity of major crops viz; tur, wheat, jowar, and gram (22.63q/ha), (28.78q/ha), (22.80q/ha) and (15.45q/ha) respectively of beneficiaries after construction of farm ponds were higher than the mean of annual income (Rs.2.16 lakhs), cropping intensity

Table 3
Overall impact of farm ponds on beneficiary farmer

Sr.No.	Dimensions of Agricultural development	Respondents (N=140)		
		Before (mean)	*After (mean)*	*Change*
1.	Cropping intensity	106.11	115.03	8.91
2.	Productivity			
i.	Tur	16.84	22.63	34.38
ii.	Wheat	22.11	28.70	30.16
iii.	Jowar	17.89	22.80	27.44
iv.	Gram	12.91	15.45	19.67
3.	Annual income	216357.14	253386.10	17.11
	Total impact		**22.94** %	

(106.11%), productivity of major crops viz; tur, wheat, jowar and gram (16.84q/ha), (22.11q/ha), (17.89q/ha) and (12.91q/ha) respectively before construction of farm ponds.

It was also found that there was a change in cropping intensity, productivity of major crops viz; tur, wheat, jowar and gram, annual income to the tune of 8.91, 34.38, 30.16, 27.44, 19.67 and 17.11 per cent respectively after construction of farm ponds.

Because of the availability of water for irrigation, it resulted changing in area, increases in cropping intensity and yield levels and thereby increased the annual income of the beneficiary farmers of farm ponds.

RELATIONSHIP BETWEEN THE SOCIO-ECONOMIC PROFILE OF FARM RESPONDENT WITH THEIR CHANGE IN ANNUAL INCOME

It is apparent from Table 4 that the variables viz land holding, area under protective irrigation, risk preference and extension contact showed positive and highly significant relationship with change in annual income at 0.01 per cent level of probability whereas, the variables family type, social participation and utility perception were found to be significant at 0.05 per cent level of probability. The other variables such as age and education were showed non-significant relationship with the change in annual income. Thus the null hypothesis for these non- significant variables therefore was accepted.

RELATIONSHIP BETWEEN THE SOCIO-ECONOMIC PROFILE OF FARM RESPONDENT WITH OVERALL IMPACT OF FARM POND.

The relational analysis of independent variables with overall impact is presented in Table 5. It is apparent that the variables viz land holding, area under protective irrigation, risk preference and extension contact showed positive and highly significant relationship with overall Impact of farm pond at 0.01 per cent level of probability whereas, the variables family type, social participation and utility perception were found to be significant at 0.05 per cent level of probability. The other variables such as age and education were showed non significant relationship with the change in overall Impact of farm pond. Thus the null hypothesis for these non significant variables therefore was accepted.

CONSTRAINTS FACED BY THE FARM POND BENIFICIARY FARMERS

The constraints faced by beneficiaries while utilizing farm pond water have been studied and presented in Table 6It is apparent from Table 24.that, large majority of the respondents (65.00%) faced constraint such as farm pond sedimentation followed by the respondents who faced the constraints of disturbances of wild animals (38.57%) With regard to getting subsidy at proper time (29.28%) were faced the constraint whereas the constraint of electric load shedding were faced by (20.71%) per cent of the beneficiary farmers.

The respondents faced the constraints such as unawareness about farm pond scheme among the farmers (12.85%)high rate of evapo-transpiration (12.14%), Productive land goes under the construction of farm pond. (9.28%) were faced the constraints by the beneficiary farmers.

Very few respondents (2.85%) were faced the constraint of improper site selection for construction of farm pond due to un involvement SAU's scientist .

Table 4
Coefficient of correlation of selected characteristics of the respondents with change in annual income

Sr. No.	*Variables*	*'r' values*
1.	Age	0.036NS
2.	Education	0.012NS
3.	Land holding	0.941**
4.	Family type	0.142*
5.	Social participation	0.143*
6.	Area under protective irrigation	0.921**
7.	Risks preference	0.460**
8.	Extension contact	0.321**
9.	Utility perception	0.132*

*significant at 0.05 level of probability.
**significant at 0.01 level of probability.

Table 5
Coefficient of correlation of selected characteristics of the respondents with overall impact of farm pond on beneficiary farmers

Sr. No.	*Variables*	*'r' values*
1.	Age	0.036NS
2.	Education	0.012NS
3.	Land holding	0.941**
4.	Family type	0.142*
5.	Social participation	0.143*
6.	Area under protective irrigation	0.921**
7.	Risks preference	0.460**
8.	Extension contact	0.321**
9.	Utility perception	0.132*

*significant at 0.05 level of probability.
**significant at 0.01 level of probability

Table 6
Distribution of beneficiary farmers according to constraints faced by them in adoption of farm pond

Sr. No.	*Constraints*	*Respondent (N=140)* *Frequency (N=140)*	*Percentage (%)*
1	Farm pond sedimentation.	91	65
2	Unaware about farm pond scheme.	18	12.85
3	While site selection for construction offarm pond the expert from SAU's arenot involved.	4	2.85
4	Difficulties in subsidy	41	29.28
5	Rate of evapo-transpiration was high in summer season	17	12.14
6	Disturbances' of wild animals	54	38.57
7	Electric load shedding	29	20.71
8	Productive land goes under theconstruction of farm pond	13	9.28

IMPLICATION

The implementation of farm pond programme needs to be continued and extended to other areas and should motivate the farmers for fish rearing which may help the farmers to yield additional income. Secondly, the farmers are to be educated to go for high value and demand driven crops in their production programme instead of low value crops as the irrigation facility is available.Further, it was also observed that most of the farmers were observed in facing the constraints such as farm pond sedimentation and disturbances from wild animals, high rate of evpo-transpiration during summer season. Therefore, it can be implicated that, Government should include the cost in the subsidy (allotted during construction of farm ponds) required to remove sedimentation to the small and medium farmers and should also provide the fencing to prevent disturbances of wild animal and also increase the role of university scientist for awareness among the farmers regarding different scheme of farm ponds, scientific methods of controlling loss of water through evapotranspiration and also in site selection process for farm pond construction. State Department of Agriculture also recommended that the farmer should build a community farm pond to control loss of productive land under construction of farm pond.

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