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Study on profile and constraints faced by beneficiaries in use of farm pond in Aurangabad district of Maharashtra state

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Abstract
The present study was conducted in the purposively selected Aurangabad district of Marathwada region because the numbers of farm ponds were more. The objective of the study was to study the constraints faced by the beneficiaries in use of farm pond. Four talukas namely Paithan, Aurangabad, Gangapur and Vaijapur were selected purposively. From each talukas five villages and four respondents from each village were selected randomly thus sample size of eighty respondents were selected for the present study. The respondents were interviewed with the help of structured schedule prepared for the purpose. One score was given for each correctly used and a score zero for wrong use or no use of it by the respondents. The data were analysed with the help of frequency, percentage mean and standard deviation. It is concluded that the respondents were having middle age with higher secondary education status, medium land holding and medium farming (6-17 years) experience, mostly living in nuclear family of four to six members with medium social participation, use of information sources and utility perception with high extension contact. Major constraints faced by the beneficiary farmers in farm pond technology were: lack of availability of water due to uneven and low rainfall, protective land goes under farm pond, problems in collection of documents, high rate of evapotranspiration during summer season.

Keywords: Farm pond, constraints

Introduction
A farm pond is a large pit dug out in the earth, usually square or rectangular in shape, which harvests rainwater and stores it for future use. The pond is surrounded by a small bund, which prevents erosion on the banks of the pond. The size and depth depends on the amount of land available, the type of soil, farmer's water requirement, the cost of excavation and the possible uses of the excavated earth. Usually farm pond size has a range of $15 \times 15 \times 3$ meter, $20 \times 20 \times 3$ meter, $25 \times 25 \times 3$ meter and $30 \times 30 \times 3$ meter, respectively. Ponds which keeps more water in the system for longer period provides greater quantities for use.

Farm ponds play a major role in managing and conserving soil and water resources which are used for several purposes of farm need. It is mainly used for farming, flood control, recreational purposes, drinking, fishing, watering livestock, fire control, etc. Farm ponds have very good impact on agricultural production, employment opportunities, high income levels etc. It provides silt which is used in agricultural fields and also can be used to strengthen the embankment of fields. Farm ponds help to increase moisture status of the soil. These water harvesting structures also helps to store excessive rainwater and thus prevents flood. Farm ponds dilute contaminants of ground water. Pond based integrated farming is a multi commodity farming system in which two or more commodities are cultivated together on a common base which brings more profit and applicable to farmers on any scale.

Construction of farm ponds is one of the such beneficial programme for harvesting excess rain water during rainy season; which is implemented by the State Agricultural Department. The excess rain water harvested in farm ponds play a vital role in stabilizing crop production through recycling during dry spell in kharif season and for protective irrigation in rabi season.

The state agriculture department has decided to construct over one lakh farm pond during 2010 under the Maharashtra Rural Employment Guarantee Scheme (MREGES). The government is going to construct 200 farm ponds in every taluka of the state.

A systematic study on impact of farm ponds in villages of Aurangabad district is not undertaken. Thus, in view of the need and importance of the study, the present study was carried out with the following specific objectives;

Objectives
1. To study the profile of farm pond beneficiaries.

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2. To study the constraints faced by the beneficiaries in use of farm ponds.

Methodology
The study was undertaken in the purposively selected Aurangabad district of Marathwada region because the number of farm pond were more. Four talukas namely Paithan, Aurangabad, Gangapur and Vaijapur were selected purposively. From each talukas five villages and four respondents from each village were selected randomly thus sample size of eighty respondents were selected for the present study. All the respondents were interviewed with the help of structured schedule prepared for the purpose. One score was given for each correctly used and a score zero for wrong use or no use of it by the respondents. The data were analysed with the help of frequency, percentage mean and standard deviation.

Findings
The findings of the study are given below;

Socio-personal, economic situational, communication and psychological characteristics
It is evident from the data in Table 1 that majority (63.75 per cent) of the respondents were in middle age group of 30 to 48 years, followed by 22.50 per cent of respondents were in young age up to 29 years and only 13.75 per cent were in the old age group i.e. above 49 years.

It is concluded that majority of the beneficiaries were in the middle age group of 30 to 48 years. The probable reason may be that young people tend to be more receptive, enthusiastic, has more working efficiency, high risk bearing capacity and prone to adopt innovations on their farm. Therefore, their more percentage among beneficiaries was not surprising.

The data further indicates that 30.00 per cent of respondents were educated up to higher secondary level, followed by 23.75 per cent were educated up to secondary school. 13.75 per cent respondents educated up to college level and 20.00 per cent and 12.50 per cent of respondents were illiterate and were educated up to primary level of education, respectively.

Thus, it is concluded that the level of education of the respondents was found to be good. The probable reason may be better awareness about the importance of education and educational facilities available in villages.

It was observed from Table1 that 42.50 per cent of the respondents possessed medium land holding (2.1 to 4 ha), followed by 32.50 per cent having semi medium (4.1 to 10 ha) size of land holding. 16.25 per cent and 6.25 per cent of respondents possessed small to marginal land holding respectively. Only 2.50 per cent of respondents possessed big land holding (above 10.1 ha). It is concluded that nearly fifty per cent beneficiaries possessed medium land holding 2.1 to 4 ha. The probable reason may be due to fragmentation of land.

Further it is observed that 71.25 per cent of respondents were in medium category (experience of 6 to 17 years), 15.00 per cent of the respondents were in low experience category (experience up to 5 year) and 13.75 per cent of the respondents were in high experience category (experience above 18 years). It is concluded that majority of the respondents had medium category experience of 6 to 17 years. The data about family type reveals that majority 75.00 per cent of the beneficiaries in the sampled population had nuclear family and remaining 25.00 per cent were in joint families. It is concluded that majority of the respondents had nuclear type of family in the sampled population.

It could be observed from the Table 1 that 56.25 per cent of the beneficiaries were of medium size of 4 to 6 members followed by 22.50 per cent of small size of 3 members. Only 21.25 per cent of the beneficiaries found to be in big size i.e. more than seven members. It is concluded that more than fifty per cent respondents were in medium size of 4 to 6 members in each family.

With regards to social participation majority of the respondents were under medium social participation (43.75 per cent), followed by 40.00 per cent of the respondents having high social participation and only 16.25 per cent of the respondents having low social participation. Thus, based on the data it is concluded that majority of the respondents had medium to high social participation.

With regards to information sources majority 75.00 per cent were under medium use of information sources followed by 12.50 per cent had used low and high information sources. It is concluded that majority of the respondents were using medium information sources.

The data presented in Table 1 indicates that 47.50 per cent of the respondents were having high extension contact followed by medium level 27.50 per cent. Only 25.00 per cent of the respondents were having low extension contacts. It is concluded that majority of the respondents had high extension contacts with the extension personnel.

With regards to utility perception majority of the beneficiaries were under medium utility perception about farm pond technology (67.50 per cent). Followed by 18.75 per cent and 13.75 per cent of the beneficiaries having high and low utility perception. Thus, it is concluded that majority of the beneficiaries had medium utility perception.

Constraints faced by beneficiary farmers during adoption of farm pond technology
It is observed from Table 2 that the majority of the respondents (81.25%) faced constraint such as Lack of availability of water due to uneven and low rainfall or irregularity of Monsoon, followed by Protective land goes under farm pond (76.25%), Problems in collection of documents (47.50%), High rate of evapotranspiration during summer season (37.50%), Lack of leadership (32.50), Electric and load shedding (30.00%), Lack of extension contact with extension personnel and Required more time for getting information about scheme (20.00%), Disturbances from wild animals (16.25%), Improper site selection (10.00%) One more farm pond required (8.75%) and stealing water from farm pond (2.50%).

Conclusions
1. It is concluded that the respondents were having middle age with higher secondary education status, medium land holding and medium farming (6-17 years) experience, mostly living in nuclear family of four to six members with medium social participation, use of information sources and utility perception with high extension contact.
2. Major constraints faced by the beneficiary farmers in farm pond technology were: lack of availability of water due to uneven and low rainfall, protective land goes under farm pond, problems in collection of documents, high rate of evapotranspiration during summer season.

Table 1: Socio-personal, economic situational, communication and psychological characteristics

Sr. No	Characteristics	Farm pond beneficiaries (N = 80)	
1	**Age**	**Frequency**	**Per cent**
1	Young (Up to 29 years)	18	22.50
2	Middle (30 to 48 years)	51	63.75
3	Old (49& above years)	11	13.75
2	**Education**		
1	Illiterate	16	20.00
2	Primary	10	12.50
3	Secondary	19	23.75
4	Higher secondary	24	30.00
5	College level	11	13.75
3	**Land holding**		
1	Marginal (up to 1ha)	05	6.25
2	Small (1.1 to 2 ha)	13	16.25
3	Medium (2.1 to 4 ha)	34	42.50
4	Semi medium (4.1 to 10 ha)	26	32.50
5	Big (above 10.1 ha)	02	2.5
4	**Farming experience**		
1	Low (up to 5 year)	12	15.00
2	Medium (6 to 17 years)	57	71.25
3	High (18 years & above)	11	13.75
5	**Family type**		
1	Nuclear	60	75.00
2	Joint	20	25.00
6	**Family members**		
1	Low (up to 3 members)	18	22.50
2	Medium (4 to 6 members)	45	56.25
3	High (7 members & above)	17	21.25
7	**Social participation**		
1	Low (up to 2)	13	16.25
2	Medium (3 to 7)	35	43.75
3	High (8 and above)	32	40.00
8	**Sources of information**		
1	Low (up to 4)	10	12.50
2	Medium (5 to 16)	65	81.25
3	High (17 and above)	15	18.75
9	**Extension contact**		
1	Low (up to 2)	20	25.00
2	Medium (3 to 7)	22	27.50
3	High (8 and above)	38	47.50
10	**Utility Perception**		
1	Low (up to 7)	11	13.75
2	Medium (8 to 18)	54	67.50
3	High (19 and above)	15	18.75

Table 2: Constraints faced by the farm pond beneficiary farmers

(N=80)

Sr. No	Constraints	Frequency	Per cent	Rank
1	Lack of extension contact with extension personnel	16	20.00	VII
2	Constraints in collection of documents	38	47.50	III
3	Required more time for getting information about scheme	16	20.00	VII
4	Disturbances from wild animals	13	16.25	VIII
5	Protective land goes under farm pond	61	76.25	II
6	Lack of leadership	26	32.50	V
7	Lack of field demonstration	13	16.25	VIII
8	Lack of availability of water due to uneven and low rainfall or irregularity of Monsoon	65	81.25	I
9	One more farm pond required	7	8.75	X
10	Stealing water from farm pond	2	2.50	XI
11	Electric load shedding	24	30.00	VI
12	High rate of evapotranspiration during summer season	30	37.50	IV
13	Improper site selection	8	10.00	IX

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