# Impact of Community Tanks under National Horticulture Mission on the Socio-Economic Status of Farmers of Maharashtra State

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ABSTRACT

*There is wider scope and greater opportunity for horticultural crop production, processing and export for more economic gain for bringing new revolution in fruit crop production and more economic gain to growers The land of Vidarbha is fertile but for raising productivity it needs availability of water. National Horticultural Mission emphasized on construction of community tank The water stored in community tank will be useful to irrigate crops in increasing cropping intensity as well as production of horticultural crops. In order to study it's impact on farmers the present study is necessary. The impact with respect to various impact parameters in terms of absolute change in adoption of this project are studied in six districts of Vidarbha based on selected 135 respondents. The relational analysis revealed that Experience in horticulture, family land holding, information sources, soil type, knowledge and adoption of community tank exhibited significant correlation with absolute change in annual income. Education, experience in horticulture, family annual income, socio-economic status, information sources, soil type, size of community tank and knowledge established significant correlation with absolute change in socio-economic status of beneficiaries. Family annual income, absolute change in area expansion, absolute change in production, absolute change in productivity, knowledge, soil type significantly correlated with impact on horticultural crop growth. Age, family size, family land holding, family annual income, socio-economic status, extension contact, soil type and knowledge contributed significantly in absolute change in annual income. The variation in absolute change in annual income was to the extent of 35.17 per cent. Education, experience of horticulture, occupation, socio-economic status, soil type, area under horticultural crop and knowledge contributed significantly and the variation in absolute change in socio-economic status to the extent of 43.08 per cent. Age, experience in horticulture, family land holding and family annual income contributed significantly in impact. The variation was to the extent of 42.93 per cent. Age, education, socio-economic status, absolute change in area expansion, absolute change in production, absolute change in productivity and absolute change in annual income contributed impact significantly. The variation in impact caused by all the variables to the extent of 91.37 per cent.*

*Key words : Community tank, Socio economic status, Impact, National Horticulture Mission*

## INTRODUCTION

Today's age is of privatization, liberalization and open economic system There is wider scope to export fruits, vegetables and spices. Government has taken initiative in increasing scope for Horticultural crops, medicinal crops cultivation and floriculture. There is increasing opportunity for horticultural crop production, processing and export to gain more income. By constructing tanks water could be made available for agriculture and for making judicious use of water. In order to increase productivity and for overall socio-economic development of rural masses in changing climatic condition and protective irrigation in crisis, community tanks are highly beneficial (Satpute *et al.*, 2010). For bringing new revolution in fruit crop production National Horticultural Mission is being executed in Maharashtra State since the year 2005-06.

Six suicide prone districts of Maharashtra in Vidarbha region viz. Akola, Washim, Buldana, Amravati, Yeotmal and Wardha were selected as farmers of this region are found to be in the vicious cycle due to lack of irrigation facilities, dependence on rainfall, salinity of soil in some part, lack of finance for crop cultivation, unbalance input output ratio and lack of employment opportunities throughout the year leading towards low production and income. In order to rescue the farmers from this vicious cycle for raising income, economic gain and socio economic status National Horticulture Mission emphasis on construction of community tank for conservation and judicious use of water for crop cultivation. The present study was conducted with the following objectives.

Objectives

1) To study the impact of community tanks on socio-economic status of farmers.

2) To study the relationship between personal, socio-economic, psychological, communication and situational characteristics of beneficiaries with impact of community tanks.

The hypothesis formulated for the study were

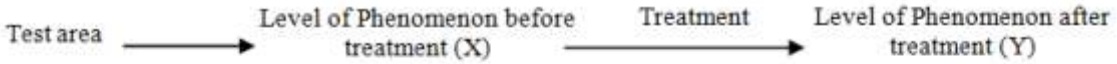
1) There is increase in annual income after adoption of community tank.

2) There is positive impact of community tanks on socio-economic status of farmers.

## METHODOLOGY

The research study area confined to six suicide prone districts of Vidarbha region of Maharashtra State namely, Akola, Buldana, Washim, Yeotmal, Amravati and Wardha covered under special Prime Minister Package for horticulture and overall development.

Census method was used for the study. All the community tank beneficiaries farmers interviewed from six districts formed 135 samples for the study. Treatment effect = Y - X Experimental design of social research was used which consists of before and after data for this the status before and after the use of community tanks was measured as shown in following model.




Treatment effect = Y - X

The change was calculated over base year with the help of following formula.

i) Absolute change in $i^{th}$ variable = Status of $i^{th}$ variable (study year) - Status of $i^{th}$ variable (base year)

In order to workout attitude of the farmers towards community tank and attitude scale was constructed and standardized for computing change in annual income and socio economic status. The absolute change over base year was worked out.

i) Change in annual income

Actual increase or decrease in annual income after construction of community tank was computed for absolute change by using following formula.

$?A_1 = A_1a - A_1b$

Where,

$?A_1$ = Absolute change in annual income

$A_1a$ = Annual income after construction of community tank (study year)

$A_1b$ = Annual income before construction of community tank (base year)

ii) Change in socio-economic status

Socio-economic status of the respondents was measured with the help of scale developed by Thakare (2004). The absolute change in Socio-economic status was worked out and the farmers were categorized as low, medium, medium-high and high.

iii) Impact

Have been conceptualized as a composite measure of impact parameters, viz., area expansion, change in cropping intensity, change in annual income, change in production, change in productivity and change in socio-economic status due to different magnitude percent change in impact is calculated over base year by using formula.

$$\text{Impact (change)} = \frac{\text{Study year} - \text{Base year}}{\text{Base year}} \times 100$$

Impact will be worked out as under -

$$\text{Impact index} = \frac{AEi + ACi + AAi + ASES + APn + APy}{6}$$

Where,
AEi=Percent area expansion under horticultural crops
AC]=Percent change in cropping intensity
AA[=Percent change in annual income
ASES=Percent change in socio-economic status
APn=Percent change in production
APy=Percent change in productivity

## RESULTS AND DISCUSSION

I) Change in annual income

The absolute change in annual income over base year was worked out.

*Table 1*
*Distribution of the beneficiaries according to absolute change in annual income*

| Sr. No. | Absolute change in annual income (` lakh) | Beneficiaries | |
|---|---|---|---|
| | | No. | Percentage |
| 1 | Upto 1.00 lakh | 38 | 28.15 |
| 2 | 1.01 to 2.00 lakh | 42 | 31.11 |
| 3 | 2.01 to 3.00 lakh | 26 | 19.26 |
| 4 | 3.01 to 4.00 lakh | 13 | 9.63 |
| 5 | 4.01 to 5.00 lakh | 06 | 4.44 |
| 6 | 5.01 lakh and above | 10 | 7.41 |
| | Total | 135 | 100.00 |

X = ` 2.547 lakh Z = 2.92** S.D. = 0.8723

From above Table it is observed that 31.11 per cent of the beneficiaries revealed absolute change in annual income ` 1.01 lakh to ` 2.00 lakh followed by 28.15 per cent beneficiaries having absolute change in annual income upto ` 1.00 lakh. One fifth i.e. 19.26 per cent of the beneficiaries and one tenth i.e. 9.63 per cent of the beneficiaries were found in the category of absolute change in annual income of ` 2.01 lakh to ` 3.00 lakh and ` 3.01 lakh and ` 4.00 lakh, respectively. 7.41 per cent cases exhibited absolute change in annual income ` 5.00 lakh and above. Very few 4.44 per cent beneficiaries exhibited absolute change in annual income in category of ` 4.01 to ` 5.00 lakh. The before construction of community tank the mean of family annual income was ` 4.54 lakh and after construction of community tank it was ` 7.09 lakh. Mean absolute change in annual income was ` 2.55 lakh. Similar findings were reported by Mapari (2005), Rana and Gupta (2010), Kulshrestha and Singh (2017) and Rathod and Rathod (2017). The results are not in conformity with the reports of Mehta and Joshi (1993), Hazra (2005) and Unhale (2007).

Water stored in community tank was utilized for irrigating kharif crops, rabi crops in addition to horticultural crops. Vegetable growing, fishery and dairy business provided more gain these might be the reason for increase in annual income. 'Z' score was 2.92 indicates that absolute change in annual income was significant. The hypothesis formulated that there is increase in annual income after adoption of community tank is proved and accepted.

ii) Change in socio-economic status

Difference in the status in terms of material possession, clothing, housing condition and participation of beneficiaries in social activities of social organization is the change in socio-economic status. Absolute change in socio-economic status over base year was estimated and categorized as shown in Table 2.

*Table 2*
*Distribution of the beneficiaries according to absolute change in socio-economic status*

| Sl. No. | Absolute change in socio-economic status score | Beneficiaries | |
|---|---|---|---|
| | | No. | Percentage |
| 1 | Low (upto 1.00) | 91 | 67.41 |
| 2 | Medium (1.01 to 2.00) | 30 | 22.22 |
| 3 | Medium-High (2.01 to 3.00) | 10 | 7.41 |
| 4 | High (3.01 and above) | 4 | 2.96 |
| | Total | 135 | 100.00 |

X = 0.95 Z = 1.39* S.D. = 0.6814

From Table 2, it is clear that majority of the beneficiaries (67.41%) exhibited slight (low) absolute change in socio-economic status whereas 22.22 per cent of the beneficiaries show medium absolute change in socio-economic status. The beneficiaries indicating medium-high absolute change in socio-economic status were 7.41 per cent. Very few beneficiaries i.e. 2.96 per cent exhibited high absolute change in socio-economic status. Mean socio-economic status of farmers before construction of community tank was 10.84, however after construction of community tank it was 11.79. Mean absolute change in socio-economic status score was 0.95.

Adoption of community tank boost up subsidiary occupation such as fishery that adds in family annual income. Also there was an increase under vegetable crops, fruit crops area all these might raises family annual income and rise in socio-economic status in certain extent. 'Z' score was 1.39 indicates significant absolute change in SES. The hypothesis formulated that there is change in socio-economic status after adoption of community tank is thus proved and accepted. The above findings are in agreement with the observations of Hazra (2008). The findings are not in accordance with the results of earlier researchers Thakare (2004).

iii) Impact

*Table 3*
*Distribution of the beneficiaries according to impact*

| Sl. No. | Impact ( per cent) | Beneficiaries | |
|---|---|---|---|
| | | No. | Percentage |
| 1 | No change | 05 | 3.71 |
| 2 | Upto 25.00 | 24 | 17.78 |
| 3 | 25.01 to 50.00 | 17 | 12.59 |
| 4 | 50.01 to 75.00 | 02 | 1.48 |
| 5 | 75.01 to 100.00 | 02 | 1.48 |
| 6 | 100.01 and above | 85 | 62.96 |
| | Total | 135 | 100.00 |
| | Mean = 108.77 per cent Z = 2.90** S.D. = 37.44 | | |

From Table 3, it is noticed that maximum per cent of the beneficiaries (62.96%) had per cent change in impact above 100 per cent followed by 17.78 per cent and 12.59 per cent of the beneficiaries having percent change in impact to the extent of upto 25.00 per cent and 25.01 to 50.00 per cent respectively. 3.71 per cent of the beneficiaries exhibited no change in impact. Negligible degree of beneficiaries (1.48%) exhibited percent change in impact in the categories of 50.01 to 75.00 and 75.01 to 100.00 per cent, respectively. Mean per cent change on impact was found to be 108.77 per cent. The above finding are not in line with the previous findings of Thakare (2004), Rathod and Rathod (2017) and Nagapure (2018).

Community tanks made an additional water storage facility and larger water stock available to beneficiaries. By utilizing stored water as well as water available by means of another sources in judicious manner the water requirement of crops was satisfied. The crop gets protected even when there is acute shortage of water and in longer gaps of precipitation during rainy season.

Water is life and basis for crop growth. The irrigation facility in addition to proper nutrient and insect pest management enhances growth and development in crops resulting in higher yield and productivity. Additional income from subsidiary occupation like fishery adds in annual income ultimately an improvement in financial condition of the beneficiaries and rise in socio-economic status. 'Z' score was 2.90 indicates significant change in impact. Thus, adoption of community tank results in creation of significant change in terms of horticultural crop growth, change in production, productivity, growth in subsidiary occupation, annual income and socio-economic status.

## CONCLUSIONS

1) The data pertaining to percent change in socio-economic status reveals that majority of the beneficiaries (67.41%) exhibited slight (low) absolute change in socio-economic status whereas 22.22 per cent of the beneficiaries show medium absolute change in socio-economic status. The beneficiaries indicating medium-high absolute change in socio-economic status were 7.41 per cent. Very few beneficiaries i.e. 2.96 per cent exhibited high absolute change in socio-economic status. Mean absolute change in socio-economic status score was 0.95. 'Z' score was 1.39 indicates significant absolute change in SES. There was an increase under fruit crops, vegetable crops and productivity per unit area. Horticultural produces fetches comparatively better price resulting in increased family annual income and absolute change in socio-economic status.

2) Regarding per cent change in impact it was noticed that maximum percent of the respondents (62.96%) had per cent change in impact above 100.00 per cent followed by 17.28 per cent and 12.59 per cent beneficiaries having percent change in impact to the extent of upto 25.00 per cent and 25.01 to 50.00 per cent respectively. However, no change in percent change in impact of very few (3.71%), beneficiaries. The mean percent change in impact was found to 108.77 per cent. 'Z' value was 2.90 indicates significant change in impact. Besides conventional sources of irrigation available with the beneficiaries community tank was an additional storage device for assured irrigation as the irrigation potential with assurity was increased. It encourages beneficiaries to grow horticultural crops. This resulted in more area under horticultural crops i.e. fruits and vegetable crops. Fishery which provides an additional income. These enhances an improvement in socio-economic status of the beneficiaries.

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## REFERENCES

Hazra A., 2005. Impact of watershed programme on the living condition of Kamar women in Raipur district. *J. Agril.Issue,*10(1): 21-27.

Hazra A., 2008. Socio-economic evaluation of water management activities in Chhattisgarh. *J. of Agril. Issue*. 13(1) : 80-86.

Kulshrestha Anil and Y. K. Singh, 2017. Impact of National Watershed Mission Development Programme in Rahuygaon of Morena District of Madhya Pradesh. *International J. Ext. Educ*, VIII: 89-91.

Mapari, R. E., 2005. Technological consequences of integrated watershed development programmes on beneficiaries. *M.Sc. (Agri.) Thesis (Unpub.),* Dr. PDKV, Akola.

Mehta B. C. and P. Joshi, 1993. Impact of IRDP on income of tribal beneficiaries. A case study of tribal subplan area in Rajasthan. *J. Rural Development*, XH(2): 145-146.

Nagapure A. K., 2018. Impact of farm pond on its beneficiary farmers. *M.Sc. (Agri.) Thesis (Unpub.),* Dr. PDKV, Akola.

Rana R. S. and Manoj Gupta, 2010. Impact assessment of rainwater harvesting tanks in hilly areas : A case study of NWDPRA micro watershed in Himachal Pradesh, *Ind. J. Soil Cons.*, 38(2) : 137-141.

Rathod Trupti and M. K. Rathod, 2017. Impact of Integrated Watershed Management Programme on yield and economic parameters of farmers in Wardha District. *Ind. J. Soil. Cons.*, 45(1): 117-122.

Satpute G. V., G. L. Chunale and R. C. Bhuyar, 2010. Vidarbhatil Koradwahu Shetisathi Shettalyachi Garaj' Maharashtra Sinchan Vikas, 23(2) : 23-26.

Thakare U. G., 2004. Impact of centrally sponsoured crop development programme on the beneficiaries. *Ph.D. (Agri.) Thesis (Unpub.),* Dr. PDKV, Akola.

Unhale S., 2007. *Panyasathj ghya hi Disha,* Lokrajya, Jan 2007 :11-12.

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