

**RESEARCH ARTICLE :**

Impact of pumpset supply scheme on Tribal farmers

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SUMMARY : Tribal population in India is generally designated as Adivasi/Advibasis, implying original inhabitants. The ancient and medieval source of information including the Vedic and Epic literature mentions various tribes namely the Bharat, the Bhills, the Kholas, the Nisadas and the Banars prior to introduction of the caste system during Brahmanic age, people were divided into various tribes was a homogenous and self-contained unit without only hierarchical discrimination. Tribes are also identified as 'indigenous people' Dhebar Commission in an attempt to define the word tribe ultimately said that information labour organization has called such people indigenous. The tribal constitute a small bit an important element in India's population. The tribal situation in India present varied and complex picture. Most of these constitute separate socio-culture group having distinct customs, traditions, marriage system. The needs of the tribal people are very few and limited. The majority of the tribal population is engaged in agriculture. In order to bring about a change in the prevalent conditions of tribals, the State and Central Government has implemented the various agricultural development schemes. The schemes in operation at Akola district under MADA pocket/Block, since the year of inception and has benefited a large number of tribal farmers from the area. The present study "Impact of pumpset supply scheme on tribal farmers" has been undertaken in order to determine the effect of pumpset supply schemes (*i.e.* Electric motor and Oil engines). As a result of actual utilization of pumpset supply scheme the changes regarding production, productivity, annual income and cropping intensity were studied by the present investigation. Majority (58.33 %) of per cent change in production, about 53.79 per cent increase in per cent change in productivity while 52.35 per cent increase in per cent change in annual income as well as only 18.63 per cent mean per cent change in cropping intensity changes.

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BACKGROUND AND OBJECTIVES

In order to bring about a change in the prevalent conditions of tribal, the State and Central Government has implemented various agricultural tribal development schemes. The schemes were in operation at Akola district under MADA pocket/ block, since the year

of inception and have benefited a large number of tribal farmers from the area. The present study on impact of pumpset supply scheme on tribal farmers has been undertaken in order to determine the effect of pumpset supply scheme (*i.e.* electric motor and oil engines) on the tribal farmers of the Akola district MADA pocket.

Tribal in Akola district under MADA pocket were generally of pro-culture in nature. They were educationally and economically very backward and agriculture is their main occupation. They follow the traditional method of cultivation which obviously resulted in low crop production. Tribal of Akola MADA pocket are totally dependent on rainwater. With specific purpose, keeping behind, State and Central Government of India has been implemented kinds of agriculture development programme. The programme aims of improving the standard of living of the tribal by improving productivity of their land and thereby increasing their income. It was found needful to study impact of these programmes on the tribal and hence, the study was undertaken.

RESOURCES AND METHODS

The present study has been conducted in MADA pocket of Akola district in Vidarbha region of Maharashtra state. For the evaluation of impact of pumpset supply scheme, ex-facto design of social research has been used. In the MADA pocket of Akola district, Akot, Telhara and Patur tahsils are mainly included in tribe area pocket. Actual utilization of pumpset supply scheme it has been taken as a study year while before utilization of pumpset it has considered as a base year.

The MADA pocket of Akola district consist of the fifty eight villages *i.e.* Akot (24), Telhara (16) and Patur (18). From each tahsil 5 villages were purposively selected to get maximum number of pumpset supply scheme beneficiaries. A list of tribal beneficiaries of pumpset supply scheme *i.e.* tribal development programme was obtained from Project Officer, Tribal Development Officer, Akola, for all selected 15 villages, 10 tribal farmers from each village were randomly selected by simple random sampling method. Thus, in all 150 respondents were selected from Akot, Telhara and Patur tahsil.

Impact has been operationally defined as the changes occurred in beneficiary as a result of utilization of electric pump and oil engine programme. This change has been distributed into economic and social change. The impact has been studied in term of per cent change in production, per cent change in productivity, per cent change in annual income and per cent change in cropping intensity.

OBSERVATIONS AND ANALYSIS

The results obtained from the present study as well

as discussions have been summarized under following heads:

Change in agricultural production of tribal beneficiaries :

The data presented in Table 1 indicate that tribal beneficiaries (54.00%) recorded increase in agricultural production upto 50 per cent category. Near about 35.33 per cent tribal beneficiaries recorded increase in agricultural production 51 to 100 per cent. This was followed by 101 and above per cent increase in case of 10.67 per cent respondent on the whole. Grewal *et al.* (1983); Puri (1984); Arya and Babu (1987); Grewal *et al.* (1989), Patil *et al.* (1991); Itnal *et al.* (1994); Wamanmoorthy and Shankaramurthy (1994); Khistariya *et al.* (1997); Kushwah and Bajaj (1998); Anonymous (1999) and Patil (1999) found increase in agricultural production due to watershed development programme.

Change in agricultural productivity :

To increase productivity, pumpset supply scheme of tribal development department is of a vital importance. Hence, what has happened after utilization of pumpset scheme with regard to agricultural productivity of tribal beneficiaries was studied in the present investigation. It was revealed that on the whole 54.67 per cent respondents exhibited 1 to 50 per cent increase in their productivity. About 34.67 per cent respondents exhibited 51 to 100 per cent as well as 10.66 per cent respondents exhibited 101 and above per cent increase in their productivity as a result of tribal development programme of pumpset supply scheme.

Anonymous (1999) after evaluation of integrated watershed development programme of Patharpur village, it was observed that 68.18 per cent increase in productivity of major crops has been observed. The assumption that there is increasing the productivity after the pumpset supply scheme has been partially proved.

Change in cropping intensity :

Considering the poor irrigation facility and poor infrastructure facility of tribals, it is assumed that the cropping intensity of MADA pocket tribals is very low and it might be changed during the period of tribal development programme. Increase in cropping intensity can definitely help, to increase the average agricultural production of tribals beneficiaries. It is an indication of positive effect. Therefore, the distribution of respondents

according to their per cent change in cropping intensity was studied and it was noticed that most of (57.34 %) respondents exhibited no change in their cropping intensity. Upto 25 per cent increase was observed in case of 15.33 per cent respondents of pumpset supply scheme. Nearly 13.33 per cent of total tribal beneficiaries were found in case of 26 to 50 per cent increase in cropping intensity. Only 14 per cent tribal beneficiaries were observed in above 51 per cent increase in cropping intensity.

MADA pocket of tribals is significant mostly dependent on rains for agricultural production. Pumpset supply scheme has some effect on crop cultivation though relatively a small increase in cropping intensity was recorded. Mahnot *et al.* (1992) also stated that availability of irrigation water has increased cropping intensity in tribal areas. Ingle and Kude (1991) has reported that watershed programme has helped in increasing the cropping intensity marginally, it corroborates with the present finding.

Change in annual income :

The main source of income of MADA pocket tribals is agriculture. Increase in income by increasing the agricultural production and productivity is one of the objectives of pumpset supply scheme as a one tribal development programme. Thus, the per cent change in income of MADA pocket tribals was studied and its distribution has been presented in Table 1. The distribution of respondents according to change in income due to pumpset supply scheme over the base year has revealed that the respondents (63.33%) have registered 1 to 50 per cent change in their annual income, followed by 28.67 per cent respondents with 51 to 100per cent change. A very few respondents (8.00%) have reported more than 100 per cent change in their annual income.

On the whole above fifty per cent increase in the annual income of the beneficiaries has been observed. Hence, assumption that pumpset supply scheme of tribal development programme help in increase income level has been proved.

Table 1 : Distribution of respondents according to per cent change in agricultural production (n=150)

Sr. No.	Impact parameters	Respondents	
		Number	Percentage
Change in production			
1.	1 to 50	81	54.00
2.	51 to 100	53	35.33
3.	101 and above	16	10.67
Change in productivity			
1.	1 to 50	82	54.67
2.	51 to 100	52	34.67
3.	101 and above	16	10.66
Cropping intensity			
1.	No change	86	57.34
2.	Upto 25	23	15.33
3.	26 to 50	20	13.33
4.	51 and above	21	14.00
Change in annual income			
1.	1 to 50	95	63.33
2.	51 to 100	43	28.67
3.	101 and above	12	8.00

Table 2 : Mean changes in impact parameters

Sr. No.	Impact parameters	Mean per cent change
1.	Change in production	58.33
2.	Change in productivity	53.79
3.	Change in annual income	52.35
4.	Change in cropping intensity	18.63

Table 3 : Level of impact of pumpset supply scheme on tribal farmers (n=150)

Sr. No.	Impact	Respondents	
		Number	Percentage
1.	Low (Upto 50%)	106	70.67
2.	Medium (51 to 100%)	39	26.00
3.	High (101% and above)	5	3.33
	Total	150	100.00

Mean changes in impact parameters :

The main objectives of tribal development programme is to bring sustainability in crop production and to increase the production of crop and also to improve the socio-economic profile of farmers considering the objective of tribal development programme impact of these programme in terms percentage change in various parameters in the study area was production, productivity, annual income and cropping intensity were studied before and after the implementation of tribal development programme. The observations are presented in Table 2.

The average production of tribal beneficiaries has increased by 58.33 per cent. The increase might have been due to the adoption of pumpset supply scheme (tribal development programme). The average productivity of trial respondents has increased by 53.79 per cent. These findings are in line with that of Greenfield (1987); Hazra (1993); Naik and Jayaramaiah (1997); Rao *et al.* (1997); Anonymous (1999); Singh (2000) and Rathod (2001) who reported that the increase in agricultural productivity by watershed activities in tribal areas. Tribals are economically very poor. It is observed that on the whole average annual income of tribal beneficiaries, which increased to the 52.35 per cent in the change has been observed after utilization of pumpset supply scheme. In fact, the increase in annual income is also marginal and might have also been reflected because of the price exclamation over a period of time. Increase in crop production, productivity, cropping intensity naturally helped to increase the annual income of MADA pocket tribals. It was also seen that, before implementation of pumpset supply scheme in MADA pocket, tribals contribute the sole crops like sorghum, mung and their traditional millet (e.g. kodo- *Paspalum serobiculutaum*, Kutki – *Panicum millior*, Bhadli – *Panicum pilosum* and sawnya). These millets were the main constituents of their diet. But after implementation of pumpset supply scheme, area under jowar, tur, mung, soybean, has increased and the area under traditional millets has

decreased also cotton was introduced in this area.

Some tribal farmers started to cultivate cotton and soybean after implementation of pumpset supply scheme, but area is negligible. Ingle and Kude (1991) have noticed that change in cropping pattern to some extent have helped in increasing the cropping intensity in tribal agriculture. It was assumed that production, productivity, annual income and cropping intensity of MADA pocket tribals is increase after implementing of pumpset supply scheme activities under tribal development programme. Thus, the present finding has proved the hypothesis.

Impact of pumpset supply scheme :

From Table 3, it is also seen that, after implementation of pumpset supply scheme, most of the respondents (70.67%) were found to be low level of impact *i.e.* 1 to 50 per cent followed by 26.00 per cent respondents were medium level (51 to 100% change) of impact and only 3.33 per cent respondents were had high level (101% and above change) of impact *i.e.* overall change in production, productivity, annual income and cropping intensity due to actual utilization.

Conclusion :

The findings of the present study pointed out the overall effect of pumpset supply scheme tribals should be considered in mass, because they would have to change in group not in individual. After favourable attitude of group, individual tribal should be probe for favourable change. For the dissemination of information modern techniques will not be useful because tribals are traditionalistic and stick their customs and beliefs. Therefore, for effective dissemination, local folk media should be use which include tribals dance, songs and drama. Literature in their own language will also be effective in case of literate farmers. This will definitely create awareness among all age group of tribals as well as tribal women.

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