

IMPACT OF ATMA ON CROP PRODUCTIVITY AMONG TRIBALS OF CHHATTISGARH

Bhedu Prasad Sahu, M.K. Chaturvedi and K. N. Yadav

*Department of Agricultural Extension,
Indira Gandhi Krishi Vishwavidyalaya, Raipur – 492012 (C.G.), India
Email: bhedusahu52@gmail.com*

Abstract : The present study was carried out during 2011 in the Surguja district of Chhattisgarh state. This study was conducted in randomly selected 10 villages of three purposively selected blocks i.e. Ambikapur, Lundra, Surajpur located in Surguja district. The aim of this study to assess the impact of ATMA on crop productivity among tribals of Chhattisgarh. A total of 150 respondents including 100 beneficiary and 50 non-beneficiary farmers were selected randomly. The data collection was done by the use of interview schedule through personal interview. Data were analyzed with help of suitable statistical tools. The findings reveal that Out of the total cropped area, 91.92 per cent area of beneficiaries and 96.28 per cent area of non-beneficiaries were found under rice crop. The majority of ATMA beneficiaries (86%) were sold their agricultural produces to local shopkeepers. The major crops area of ATMA beneficiaries were subsequently increased in others crops 90 per cent.

Keywords : ATMA, Crop productivity, Tribals

INTRODUCTION

Agriculture is the only sector where the production has increased four fold since independence from 51 million tonnes in 1950-51 to 209 million tonnes in 2000-01 against as three fold increase in population. Rapid growth of agriculture is essential not only to achieve self-sustenance at national level but also for food, nutrition and environmental security (Sengar *et al.*, 2008).

The concept of ATMA was introduced in 1999 as an autonomous organization under the National Agricultural Technology Project (NATP) by providing flexible working environment with an objective of integrating research, extension and all other stake holders at the district level to support the farmer's needs and interest through an integrated approach of strategic plan. ATMA is a society of Key stake holders involved in agricultural activities for sustainable agricultural development in the district. Involvement of farmers can be achieved at the village level through farmer's interest groups (FIGS) at the block level as a member of farmer advisory committee (FAC) and at district level as the member of ATMA Governing Board. As a registered society ATMA is responsible for technology dissemination at the district level. The concept of ATMA envisages paradigm shift from "top down" to "bottom up" in planning and implementation of agriculture development programmes (Satya Prakash and Dipak De, 2008). The scientific study of technology transfer system is essential for making the future programme more effective. Keeping this in view the present study was under taken to study the impact of ATMA on crop productivity among tribals of Chhattisgarh.

MATERIAL AND METHOD

This study was conducted in Surguja district of Chhattisgarh, during the year 2011. At the time study

Chhattisgarh state had 18 districts out of which Surguja district was selected purposively because this district has got highest fund for the ATMA programme. From this district only three blocks i.e., Ambikapur, Lundra and Surajpur were selected purposively. From each selected block out of total villages, only 14 villages in Ambikapur, 12 villages in Lundra and 15 villages in Surajpur block have been selected by Government of Chhattisgarh for carrying out the various activities under ATMA programme. Out of these beneficiary villages, only 25 per cent villages in each block i.e. Rakeli, Darima, Nawanagar (Ambikapur), Lamgaon, Kot, Dorna (Lundra), Ajirama, Kalyanpur, Dwrikanagar and Jagatpur (Surajpur) were randomly selected (Total 10 villages) for the study. From each Farmers Interest Groups 10 tribal farmers were randomly selected those were beneficiaries of ATMA programme from each selected village as respondent. In this way, 30 farmers from Ambikapur, 30 farmers from Lundra and 40 farmers from Surajpur (30+30+40=100 beneficiary farmers) were selected to determine the impact of ATMA on crop productivity among tribals of Chhattisgarh. The 5 non-beneficiary farmers were also selected from same village as non-beneficiary respondents (15+15+20=50). Thus, total of 150 (100 beneficiaries and 50 non-beneficiaries) farmers were selected as respondents for the present study. Respondents were interviewed through personal interview. Prior to interview, respondents were taken in to confidence by revealing the actual purpose of the study and full care was taken in to consideration to develop good rapport with them. For the data collection well designed and pre-tested interview scheduled were used. Collected data were analyzed by the help of various statistical tools i.e. frequency, percentage, mean and standard deviation, etc.

RESULT AND DISCUSSION

Major crops and their area

Table 1: Distribution of respondents according to major crops grown along with their area

Crops	Beneficiary (n=100)			Non-beneficiary (n=50)		
	Number of farmers	Area		Number of farmers	Area	
		acre	%		acre	%
Kharif						
• Paddy	96	279.16	91.92	49	149.00	96.28
• Arhar	9	3.17	1.04	9	2.25	1.45
• Urd	5	2.30	0.78	3	0.85	0.54
• Sugarcane	9	14.29	4.70	2	1.50	0.98
• Others	12	4.75	1.56	3	1.15	0.75
Total cropped area		303.67			154.75	
Rabi						
• Wheat	62	110.35	58.70	32	54.00	48.32
• Sugarcane	15	15.52	8.27	7	7.75	6.93
• Lathyrus	12	19.00	10.10	6	17.00	15.21
• Gram	5	7.75	4.13	4	5.00	4.47
• Paddy	9	14.50	7.71	7	15.50	13.88
• Others	33	20.85	11.09	13	12.50	11.19
Total cropped area		187.97			111.75	

The data given in Table 1 indicates that in kharif season all the respondents were growing rice crops. Out of the total cropped area, 91.92 per cent area of beneficiaries and 96.28 per cent area of non-beneficiaries were found under rice crop. In addition to rice, 1.04, 0.78 and 4.70 per cent cropped area of beneficiary respondents was found under arhar, urd and sugarcane crops, respectively and remaining 1.56 per cent cropped area was found under other crops like vegetable, maize etc. Similarly, in case of non-beneficiaries 1.45, 0.54 and 0.98 per cent cropped area was found under arhar, urd and sugarcane crops, respectively and 0.75 per cent cropped area was found under other crops.

In rabi season, wheat was found as the most important crop cultivated on about 58.70 and 48.32 per cent cropped area of beneficiary and non-beneficiary respondents, respectively. Out of the total cropped area in rabi season, 8.27, 10.10, 4.13 and 7.71 per cent cropped area of beneficiaries were found under sugarcane, lathyrus, gram and paddy crops, respectively and remaining 20.85 per cent cropped area was found under other crops like

vegetables. In case of non-beneficiary respondents 15.21 per cent cropped area was found under lathyrus crops followed by 13.88 per cent cropped area was paddy, others crop (11.19%) area, sugarcane (6.93%) area and 4.47 per cent cropped area was found under gram. The total rabi area of non-beneficiaries was far behind than the rabi area of ATMA beneficiaries may be due to non-availability of irrigation.

Marketing of agriculture produces

Distributions of the respondents according to their marketing of agriculture produces were presented in the Table 2. Before the ATMA programme was launched at the study area is 2004-05, the majority of ATMA beneficiaries (86%) were sold their agricultural produces to local shopkeepers, followed by merchant (83%), other (36%), mandi (3%) and only 1 per cent is unsure. After initiating the ATMA programme in 2010-11 sold their agriculture produce by the beneficiaries of the farmers to the co-operative society i.e. 79 per cent, followed by 55 per cent merchant, 39 per cent local shopkeepers, 28 per cent other, 8 per cent unsure and only 7 per cent were sold their agricultural produce in mandi.

Table 2: Distribution of the respondents according to their marketing of agriculture produce

Marketing of agriculture produce	Beneficiary (n=100)				Non-beneficiary (n=50)			
	2004-05		2010-11		2004-05		2010-11	
	F	%	F	%	F	%	F	%
• Merchant	83	83	55	55	48	96	29	58
• Local shopkeepers	86	86	39	39	46	92	19	38
• Mandi	3	3	7	7	2	4	3	6
• Co-operative society	0	0	79	79	0	0	31	62

• Un sure	1	1	8	8	1	1	2	4
• Others	36	36	28	28	6	12	8	16

F – Frequency,

% - Per cent

In case of non-beneficiary respondents regarding marketing of agricultural produce the majority of respondents (96%) sold to merchant, followed by 92 per cent local shopkeepers, 12 per cent others, 4 per cent in mandi and 1 per cent were unsure marketing of agricultural produces in 2004-05. The majority of 62 per cent non-beneficiaries were sold their agriculture produce in co-operative society, followed by 58 per cent merchant, 38 per cent local shopkeepers, 16 per cent others, 6 per cent in mandi and 4 per cent were unsure for marketing of agricultural produces in the present year 2010-11.

It could be concluded from above data, before ATMA programme respondents were sold of agricultural produce to merchant, local shopkeeper and after ATMA programme selling of agricultural produce in co-operative society. Some respondents were selling of agricultural produce in others like local market, Kerta sugar factory etc. It appears that ATMA programme has considerable impact in the knowledge of market linkage of the ATMA beneficiaries, which ascertain the good selling of cost of the ATMA beneficiaries.

Impact of ATMA programme on area of various crops

The data given in Table 3 indicates that in kharif season all the respondents were growing rice crop.

After initiating the ATMA programme in selected villages the total cropped area is increased in both kind of respondents beneficiaries (2.08%) and non-beneficiaries (1.67%) over the 2004-05 to 2010-11. The major crops area of ATMA beneficiaries were subsequently increased in others crops 90 per cent, followed by arhar (24.31%), sugarcane (24.26%), urd (1.76%) and paddy 0.18 per cent area were increased. Whereas, in case of non-beneficiaries others crops area were increased 130.00 per cent, followed by sugarcane (50.00%), arhar (32.35%), paddy (0.57%) and no change observed in urd crop area over the 2004-05 to 2010-11.

As for rabi season, the total cropped area is increased in both the respondents beneficiaries (98.34%) as compared to non-beneficiaries (83.95%) over the 2004-05 to 2010-11. The paddy area is slightly increased in beneficiaries 360.31 per cent, followed by wheat area (157.52%), sugarcane (93.51%), gram (55.00%), others crop area (36.72%) and lathyrus is (-7.31%) slightly decreased. Whereas, in case of non-beneficiaries wheat area is slightly increased 227.27 per cent, followed by other crops area (72.41%), gram (66.66%), sugarcane and paddy (55.00%) and lathyrus is (-10.52%) slightly decreased over the 2004-05 to 2010-11.

Table 3: Impact of ATMA on crop diversification in Surguja district of (C.G.)

Heads	Beneficiaries (n=100)			Non-beneficiaries (n=50)		
	2004-05	2010-11	% change	2004-05	2010-11	% change
Crop diversification (in acre)						
Kharif						
• Paddy	278.65	279.16	0.18	148.15	149.00	0.57
• Arhar	2.55	3.17	24.31	1.70	2.25	32.35
• Urd	2.26	2.30	1.76	0.85	0.85	0.00
• Sugarcane	11.50	14.29	24.26	1.00	1.50	50.00
• Others	2.50	4.75	90.00	0.50	1.15	130.00
Total cropped area	297.46	303.67	2.08	152.2	154.75	1.67
Rabi						
• Wheat	42.85	110.35	157.52	16.50	54.00	227.27
• Sugarcane	8.02	15.52	93.51	5.00	7.75	55.00
• Lathyrus	20.50	19.00	-7.31	19.00	17.00	-10.52

• Gram	5.00	7.75	55.00	3.00	5.00	66.66
• Paddy	3.15	14.50	360.31	10.00	15.50	55.00
• Others	15.25	20.85	36.72	7.25	12.50	72.41
Total cropped area	94.77	187.97	98.34	60.75	111.75	83.95

Impact of ATMA programme on productivity of various crops

The productivity of crops is given in Table 4. After ATMA programme launched at selected area it has been observed that productivity of the crop is also increased i.e. paddy 44.59 per cent, followed by

sugarcane (39.32%), urd (14.85%) and arhar 1.86 per cent. Same way it was observed that non-beneficiary farmers production and productivity of the crop is adequately increased i.e. sugarcane 38.88 per cent, followed by paddy (32.35%), arhar (16.66%) and urd 6.10 per cent increased in kharif season.

Table 4: Impact of ATMA programme on crop productivity (q acre⁻¹)

Crops	Beneficiaries (n=100)		% Change	Non-beneficiaries (n=50)		% Change
	2004-05	2010-11		2004-05	2010-11	
Kharif						
Paddy	11.01	15.92	44.59	11.93	15.79	32.35
Arhar	1.37	1.56	13.86	1.56	1.82	16.66
Urd	1.01	1.16	14.85	1.31	1.39	6.10
Sugarcane	230.86	321.65	39.32	240.00	333.33	38.88
Rabi						
Wheat	6.18	7.78	25.88	6.42	7.03	9.50
Sugarcane	240.38	345.16	43.58	285	332.21	16.56
Lathyrus	1.09	1.24	13.36	1.16	1.36	17.24
Gram	2.19	3.13	42.92	2.32	3.19	37.5
Paddy	13.9	17.45	25.53	14.14	18.7	32.24

In rabi season sugarcane crop productivity is substantially increased in ATMA beneficiaries 43.58 per cent, followed by gram (42.92%), in wheat (25.88%), paddy (25.53%) and lathyrus 13.36 per cent productivity increased. In case of non-beneficiaries gram crop productivity is increased 37.50 per cent followed by paddy (32.24%), in lathyrus (17.24%), sugarcane (16.56%) and wheat crop productivity is 9.50 per cent increased over the 2004-05 to 2010-11. This indicated that productivity was increased by the adoption of hybrid rice varieties through ATMA programme. It appears that there is positive impact of ATMA on productivity of various crops. It is evident from the result that there is positive and good impact found in ATMA beneficiaries in terms of increasing the area and increasing the productivity. The reason might be through ATMA programme give the training, demonstration and visit about various improved agronomic practices and new technology to the farmers for enhancing the crop production and productivity.

CONCLUSION

It concluded from the results that after initiating the ATMA programme in selected villages the total cropped area is increased in both kinds of

respondents beneficiaries (2.08%) and non-beneficiaries (1.67%) over the 2004-05 to 2010-11 and at selected area it has been also observed that productivity of the crop is also increased i.e. paddy 44.59 per cent, followed by sugarcane, urd and arhar, respectively. In rabi season sugarcane crop productivity is substantially increased in ATMA beneficiaries 43.58 per cent.

REFERENCES

- Sengar, R.S., Singh, B.B., Bhardwaj, N. and Singh, A.K.** (2008). Impact of NWDPR on Crop Productivity among Tribals of Chhattisgarh. *Indian Res. J. Ext. Edu.* **8** (1): 54-56.
- Prakash, Satya and De, Dipak** (2008). Knowledge Level of ATMA Beneficiaries about Bee-keeping. *Indian Res. J. Ext. Edu.* **8** (2&3): 62-64.