

FARMER'S PERCEPTION TOWARDS AGRICULTURE TECHNOLOGY IN TRIBAL REGION OF RAJASTHAN

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ABSTRACT

The study was conducted in tribal region of Udaipur district of Rajasthan to know the perception of tribal farmers towards agriculture technology. In all 425 farmers were selected randomly. The results of the study indicated that majority of farmers perceived knowledge regarding use of FYM, urea & DAP, line sowing and seed replacement technologies. While minority of farmers possessed knowledge regarding use of green manure & micro elements, broadcasting, cultivation of fruits and vegetable crops and making compost/vermi-compost. Further, it was also observed that the majority of farmers perceived climatic changes, uneven distribution and uncertain behaviour of the rainfalls, declining level of ground water on their farms and non-remunerative price of crops during last ten years.

INTRODUCTION

Agriculture is the most important sector of economy in India as it provides food and livelihood security. The development and dissemination of new technology is an important factor determining the future of agriculture. Farmers are using a number of modern agriculture technologies (crop production/processing/storage/ livestock production) for producing more output all over the country. The Government of Rajasthan recognizes the importance of agricultural sector in terms of its potential to address the key challenges of unemployment and poverty in the tribal region of Udaipur district. Any improvement in this sector has potential to reduce poverty. The Udaipur has highest tribal population in Rajasthan. The tribal population is highly dependent on agriculture for their food security and income. For a variety of reasons, agricultural development has been constrained in the tribal areas. The Central Governments as well as Government of Rajasthan have undertaken a number of projects, programmes and initiatives such as an Innovative Project for Enhancement of Livelihood of Farmers Benefited Through Forest Rights Act, Agriculture Technology Management Agency (ATMA), Livelihood and Nutritional Security of Tribal Dominated Areas Through Integrated Farming System and Technology Models, World Bank assisted project -

District Poverty Initiatives Project (DPIP) II, Project Golden Rays, Kharif and Rabi Abhiyan etc. to improve the agricultural situation and reduce poverty. Having implemented many interventions, this study was mainly done to know socio-economic profile of farmer respondents and to examine their perception towards crop production technology, livestock production technology, use of manures & fertilizers and major changes perceived by farmers in the last ten years.

RESEARCH METHODOLOGY

The study was conducted during 2011 in tribal region of Udaipur district of Rajasthan as it has the largest tribal population. The seven villages were selected randomly from the Udaipur district. In all 425 farmers were selected randomly as respondents to analyse the perception of agriculture technology. The selected respondents were interviewed personally with the help of a well structured and pre-tested interview schedule in order to get relevant information. Then, the data collected were tabulated and statistically analyzed using simple statistical tools like average and percentage to interpret the results.

RESULTS AND DISCUSSION

(A) Socio-economic profile of farmers:

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(i) Family size and composition of family:

Family size and its composition is an important contributory factor in agriculture and bovine husbandry, since agriculture and bovine rearing are basically a labour intensive activities, and much of the labour requirements are met from the family itself. The details relating to this factor in tribal area are presented in table 1. The results of study indicated that overall average family size was 3.67 persons. Further, number of adults were more than those of children implying relatively more availability of work force for agriculture and dairy enterprise in the study area. It was also observed that 74 per cent of children were school going.

Table 1. Average Family Size and Composition of Family

(Number)			
Adults	Children	Average family size	School going childrens
2.95	1.72	3.67	1.27
(63.00)	(0.37)	(100.00)	(74.00)

Figures in parentheses indicate percentage of average family size

(ii) Educational status of farmers: Better education enables better comprehension of farming technologies and their possible adoption in farm enterprises. The awareness and knowledge level of the farmers is best reflected through their education. The distribution of sample farmers according to the education of heads of the families is presented in Table 2. The results indicated that on an average, 52.94 per cent heads of families were illiterate. On an average, 12.47 per cent of heads of families had education up to primary level and 32.24 per cent of heads of families had education up to senior secondary level. Those educated upto graduate and above level were observed only 2.35 per cent of total sample farmers in the project area.

Table 2. Education Status of Farmers

(Number)				
Illiterate	Primary	Senior secondary	Graduation & above	Total Farmers
225	53	137	10	425
(52.94)	(12.47)	(32.24)	(2.35)	(100.00)

Figures in parentheses indicate percentage of total

farmers

(iii) Basic facilities: The basic facilities possessed by sample farmers in terms of houses, toilets and drinking water were 100 per cent, 17.41 per cent and 77.18 per cent, respectively as shown in Table 3. Further, it was observed (Table 4) that 64.94 per cent farmer had Kachcha house and 35.06 per cent farmers had Pucca house. Whereas, farmers who possessed toilets had 60.81 per cent Kachcha toilets and 39.19 per cent Pucca toilets.

Table 3. Basic Facilities

Particulars	Possession status		Total farmers
	Yes	No	
House	425 (100.00)	0 (0.00)	425 (100.00)
Toilets	74 (17.41)	351 (82.59)	425 (100.00)
Drinking water	328 (77.18)	97 (22.82)	425 (100.00)

Figures in parentheses indicate percentage of total farmers

Table 4. Type of House and Toilets

Particulars	Kachcha	Pucca	(Number)
			Based on total farmers possessing facilities
Type of house	276 (64.94)	149 (35.06)	425 (100.00)
Type of toilets	45 (60.81)	29 (39.19)	74 (100.00)

Figures in parentheses indicate percentage of last column total

(iv) Average size of land holdings: The economic and social progress of the households largely depends on the size of operational land holdings. The average size of land holding is presented in Table 5. The results indicates that the average size of land holding was 1.17 hectare/household. Further, about 59 per cent land was irrigated and rest of land was un-irrigated and uncultivated in the study area.

(v) Average milch animals and milk productivity: The herd strength and the number of milch animals in the household directly affect the

economy of the milk producers. Number of milch animals maintained by farmers and their milk productivity are presented in Table 6. Average number of cow, buffalo and goat was reported to be 0.70, 1.15 and 0.76, respectively in the study area. Further, it was also reported that average milk yield per animal per day of cow, buffalo and goat was reported to be 1.58, 3.30 and 0.21 litre, respectively in the tribal area which is much below than state average.

Table 5. Average Size of Land Holdings

(ha./Household)			
Irrigated land	Un-irrigated land	Un-cultivated land	Average size of land holdings
0.69 (58.97)	0.37 (32.26)	0.11 (8.97)	1.17 (100.00)

Figures in parentheses indicate percentage of average size of land holdings

Table 6. Average Milch Animals and Milk Yield

Name of animal	Average (Number/household)	Average milk yield (litre/day/animal)
Cows	0.70	1.58
Buffaloes	1.15	3.30
Goats	0.76	0.21

(B) Farmer's perception:

(i) Perception towards crop production/storage technology: The findings of farmer's perceptions regarding crop production/storage technology are presented in Table 7. The results indicated that 88 per cent farmers perceived that the line sowing is a very good method of sowing the seeds which help the farmers in easy harvesting of crops. The results for seed replacement showed that around 52 per cent farmers replaced the old seed with improved/new seed in the area. More than 25 per cent farmers were found to have interest in adopting seed treatment as good technique to protect crops from insects, pests and diseases infestation, cultivation of fruits & vegetable and storage bins as a good technique for protection of food grains during storage period. The majority of farmers were not interested in broadcasting as method of seed sowing and making compost/vermi-

compost in the study area.

Table 7. Perception of Farmers Towards Crop Production/Storage Technology

Items	Response	
	Yes	No
Seed treatment	134 (31.53)	291 (68.47)
Line sowing	374 (88.00)	51 (12.00)
Broadcasting	44 (10.35)	381 (89.65)
Fruits & Vegetable production	118 (27.76)	307 (72.24)
Seed replacement	220 (51.76)	205 (48.24)
Composting/vermi-composting	38 (8.94)	387 (91.06)
Storage bins	129 (30.35)	296 (69.65)

Figures in parentheses indicate percentage of total farmers

(ii) Perception towards livestock production technology: The findings of farmer's perception regarding livestock production technology are presented in Table 8. The results indicated that 44 per cent farmers were producing green fodder for animal feeding and around 27 percent farmers were adopting artificial insemination (A.I.) method as best technique for the purpose of animal breeding. On an average, 19 per cent and 22 per cent farmers were fed mineral mixture and chaffed fodder to their animals in the study area, respectively. Further, backyard poultry is considered as good off farm source of income. But, only 2.82 per cent farmers had adopted this supplementary enterprise. Thus, perception of farmer's towards adoption of backyard poultry enterprise was observed very poor in the study area.

(iii) Perception towards utilization of manures and fertilizers: The results regarding use of manures and fertilizers in study area are presented in Table 9. Regarding the utilization of manures and fertilizers inputs technology, majority of the farmers perceived that they applied FYM (95.53%), Urea (91.76%) and DAP (80%) on their land for better production. The perception of farmers towards utilization of green manures (3.29%) and micro-elements (5.18%) was poor

as limited numbers of farmers using these inputs on their fields. This may be due to unawareness of farmers about the use of green manures and micro-elements in cultivation of crops.

Table 8. Perception of Farmers Towards Livestock Production Technology

Items	Response	
	Yes	No
Artificial Insemination (A.I.)	113 (26.59)	312 (73.41)
Backyard poultry	12 (2.82)	413 (97.18)
Green fodder production	187 (44.00)	238 (56.00)
Mineral mixtures	79 (18.59)	346 (81.41)
Chaffing of fodder	95 (22.35)	330 (77.65)

Figures in parentheses indicate percentage of total farmers

Table 9. Use of Manures and Fertilizers

Items	Response	
	Yes	No
FYM	406 (95.53)	19 (4.47)
Urea	390 (91.76)	35 (8.24)
DAP	340 (80.00)	85 (20.00)
Green manure	14 (3.29)	411 (96.71)
Micro-elements (Zn, Fe, etc.)	22 (5.18)	403 (94.82)

Figures in parentheses indicate percentage of total farmers

(iv) Perception towards major changes: The findings of perception of farmer's regarding major changes in last 10 years are presented in Table 11. The results indicated that around 46 per cent farmers perceived climatic changes which include occurrence of drought, high temperature and long dry spell. A sizeable majority of respondent farmers (82 %) also believed they had witnessed uneven distribution and uncertain behaviour (late onset of monsoon, early withdrawal of monsoon etc.) of the rainfalls. Around 75 per cent farmers were found

declining level of ground water on their farms. On an average, 63 per cent farmers were opined that they do not fetch remunerative price of their produce. Further, results indicated that around 29 per cent farmers were reported that they observed lack of technical knowledge about agriculture.

Table 10. Major Changes in Last Ten Years

Items	Response	
	Yes	No
Climatic changes	197 (46.35)	228 (53.65)
Uneven distribution and uncertain behaviour of the rainfalls	347 (81.65)	78 (18.35)
Declining level of ground water	318 (74.82)	107 (25.18)
Non-remunerative price of crops	266 (62.59)	159 (37.41)
Lack of technical knowledge	122 (28.71)	303 (71.29)

Figures in parentheses indicate percentage of total farmers.

CONCLUSION

The development and dissemination of new technology can solve the problem of unemployment and helps in eliminating the poverty. It can be concluded from above discussion that the majority of farmers have basic facilities like house and drinking water. But minority of farmers possessed toilet facilities. More than 50 per cent heads of families were illiterate which create obstacle in perceiving the new technology. The average size of land holding/household was 1.17 hectare of which 59 per cent was irrigated. Average number of milch animals and their milk productivity were found quite low. The perception of farmer's regarding inputs and technologies like use of FYM, Urea & DAP, line sowing, seed replacement techniques was quite high. While comparatively low perception of farmer's towards inputs and technologies like use of green manure & micro elements, broadcasting, cultivation of fruits and vegetable crops and making compost/vermi-compost. Therefore, it can be recommended that more emphasis should be given by state government, SAUs and reputed NGOs, ICAR for promotion of agriculture technology

among farming community in the tribal area. Further, it was also concluded that the majority of farmer's perceived climatic changes, uneven distribution and uncertain behaviour of the rainfalls, declining level of ground water on their farms and non-remunerative price of crops during last ten years. All these changes will be a matter of concern for policy makers & planners in future.

REFERENCES

- Awasthi, H.K., Singh, P.R. and Sharma, R.N. 2000. Knowledge and Attitude of Dairy Farmers Towards Improved Dairy Practices. *Maharashtra Journal of Extension Education*, XIX:290-292.
- Dhaka, B.L., Chayal, K. and Poonia, M.K. 2010. Analysis of Farmer's Perception and Adaptation Strategies to Climate Change. *Libyan Agriculture Research Center Journal International* 1 (6): 388-390.
- Maity, Bipasha and Chatterjee, Bani, 2010. Assessing Farmer Awareness Indices of Modern Inputs in India. *European Journal of Social Sciences*, 15 (4): 637-543.
- Pandey, Archana, Washikar, A.R. and Thakur, G.S. 2003. Perception of Farm Women for Improved Production Technology on Oilseeds and Pulse Crops. *Maharashtra Journal of Extension Education*, 22(2):215-216.
- Paul, Shashi, Panjabi, N.K. and Paul, Narinder. 2001. Attitude of Tribal Towards Crossbred Cattle Rearing. *Maharashtra Journal of Extension Education*, 20:32-35.
- Radder, Shivakumar K and Bhanj, S.K. 2011. Perceptions of Dairy Farmers Regarding Clean Milk Production in Gadag District of Karnataka State. *Veterinary World*, 4(2):79-81.

