

ATTITUDE OF PRIMITIVE TRIBAL GROUPS TOWARDS IMPROVED AGRICULTURAL TECHNOLOGY

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India has one of the largest concentration of tribal population in the world. Tribal population constitutes about 8 per cent of country's population with agriculture as their main occupation. It is an established fact that the tribal agriculture is mostly subsistence in nature and the tribal economy is mainly based on agriculture and Minor Forest Produce. In most of the tribal areas the adoption or spread of the new technology is seen to a very limited scale. The pace and content of new technologies being adopted by the tribals is very slow and inadequate as due to their habitation in the remote areas of hills and in the forest.

The gap that exists between the tribals and non- tribals is fairly wide even today. This stems from the fact that there is no or low out reach of the personnel involved for the intervention of the appropriate technologies to be adopted by the tribal or there is stiff resistance from the tribal community in accepting the new technology. Human behaviour is largely a function of attitudes and more so in a free choice society like ours. (Sherif and Cantrill 1945) pointed out that predisposition to action is an essential feature of an acceptable definition of attitude. Thurstone (1946) defined attitude as the degree of positive or negative affect associated with some psychological object. The new strategy of agriculture production includes cultivation of high yielding varieties and adoption of scientific package of practices coupled with knowledge and skills in applying the technology for higher production. It is therefore important that the tribal farmers attitude specially the Primitive Tribal Group (PTG's) is a prelude for successful adoption of improved

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practices. Keeping this in view the present study is taken up with the following objective.

OBJECTIVE: To measure the attitude of Pimitive Tribal Groups towards improved agriculture technology.

Methodology

The study was purposefully carried out in Rampachodavaram agency area of East Godavari district in Andhra Pradesh state. The study was confined to a total of four IFAD villages dominated by PTGs. The villages selected for the study are Cheruvupalem Kutravada, PandirimamidiKota and DodalankaPalem of Rampachodavaram, Maredmilli and Devipatnam mandals respectively. A total of 80 respondents belonging to konda reddy group of PTGs constituted the sample for this study.

The scale developed and used by Sadamate (1978) and Rao (1993) was used for this study. This scale consists of 20 attitude statements. Out of 20, 10 statements were the indicators of favorable attitude and the remaining 10 were the indicators of unfavourable attitude. The 3 columns represents continuum of 'agreement' to 'disagreement'. The deviation from 5- point continuum of Likert (1932) was made for smooth administration to tribal farmers. The three points on the continuum were 'agree' 'undecided' and 'disagree' with respective weightage of 3,2,1 for positive statements and with 1,2 and 3 for negative statements.

The scale for finding out the attitude towards improved agricultural technology was then administered to the respondents to obtain their response to each of the statement in terms of their own degree of agreement or disagreement.

The score for each individual on the scale was computed by summing the weights of the individual item response. The possible score ranges from 20-60.

Categorisation of respondents based on their score range

S.No	Category	Score range
1	Respondents with highly unfavourable attitude (very low)	20-29
2	Respondents with unfavourable attitude (low)	30-39
3	Respondents with neutral attitude (average)	40
4	Respondents with favourable attitude (high)	41-50
5	Respondents with highly favourable attitude (very high)	51-60

Results and Discussion

The results of the study are presented and discussed below.

Distribution of respondents based on attitude scores towards improved agricultural technology

Sl. No.	Category	Respondents	
		Frequency	Percentage
1	Respondents with highly unfavourable attitude (very low)	-	-
2	Respondents with unfavourable attitude (low)	4	5.0
3	Respondents with neutral attitude (average)	8	10.0
4	Respondents with favourable attitude (high)	47	58.75
5	Respondents with highly favourable attitude (very high)	21	26.25
TOTAL		80	100.00

The above table shows that a majority 58.75 percent of the respondents possessed favorable attitude towards improved agricultural technology followed by highly favorable attitude (26.25%). Only 10% of tribal farmers were neutral category and 5% had unfavorable attitude. Non of the respondents found in highly unfavorable category.

From the above table it can be inferred that a majority of the Primitive Tribal farmers had favorable attitude followed by highly favorable attitude towards improved agricultural technology. This trend might be due to the fact that they might have convinced about the benefit of the technology. This finding is in agreement with the findings of Sadamate (1978), Samanta and Reddy (1982), Singh (1983), Samanta and Shyam Sunder (1985), Kapgate and Ingle (1988) and Punna Rao (1993).

Content analysis of the attitude scale

Sl. No.	Statements	Agree		Undecided		Disagree	
		F	%	F	%	F	%
1	Improved agricultural technology solve food problem of tribal areas (+)	46	57.5	19	23.75	15	18.75
2	It is better to use old practices than to take risk in improved agricultural practices (-)	23	28.75	16	20.0	41	51.25
3	Improved technology should be undertaken extensively by all the tribals (+)	39	48.75	9	11.25	32	40.0
4	Use of improved agricultural practices enhances the infestation of pests in crops (-)	38	47.5	14	17.5	28	35.00
5	Improved agricultural technology is not the solution to remove tribal poverty (-)	29	36.25	24	30.00	27	33.75
6	It adds prestige to be adopter of a new practices (+)	52	65.00	19	23.75	9	11.25
7	Country plough is not desirable than the recommended iron plough for thorough land preparation (+)	37	46.25	24	30.00	19	23.75
8	The foundation of tribal prosperity does not depend on improved agricultural practices (-)	41	51.25	12	15.0	27	33.75
9	Getting soil tested before the use of fertilisers is advantageous (+)	36	45.00	27	33.75	17	21.25
10	Improved agricultural technology is the best solution of removing tribal indebtedness(+)	42	52.5	14	17.5	24	30.00
11	Seed treatment with chemicals is not beneficial to crop growth (-)	31	38.75	37	46.25	12	15.00

Sl. No.	Statements	Agree		Undecided		Disagree	
		F	%	F	%	F	%
12	Cultural practices for HYVs are complex in nature (-)	21	26.25	28	35.00	31	38.75
13	Killing pests that damage crop with pesticides increases the crop yield (+)	47	58.75	19	23.75	14	17.5
14	Improved agricultural practices are more suitable for non- tribal farmers (-)	36	45.00	9	11.25	35	43.75
15	The HYVs are equally good for consumption when compared to local varieties. (+)	39	48.75	17	21.25	24	30.00
16	The produce of the crop grown by the application of fertilisers reduces the health of tribals (-)	21	26.25	27	33.75	32	40.00
17	Use of fertilisers should be continued even in the absence of subsidy(+)	22	27.5	37	46.25	21	26.25
18	The traditional approach towards the pests is desirable than chemical plant protection measures(-)	52	65.00	13	16.25	15	18.75
19	Improved agricultural technology provides a settled living for tribals (+)	46	57.5	23	28.75	11	13.75
20	Cultivation of HYVs is irrelevant for the tribal farmers. (-)	41	51.25	24	30.00	15	18.75

- It is observed from the table that more than half of the respondents (57.5) have agreed that the improved agricultural technology solve food problem of tribals. The reason being the farmers are convinced with the improved agricultural technologies for getting higher yields. The same item was disagreed by 18.75 per cent of the respondents and undecided by 23.75 per cent. This disagreement and undecided response was observed mainly with the podu cultivating farmers. Some have tried HYVs without applying fertilizers resulting in lesser yields or the same yields as that of their local strains. The attitude of the farmers can be changed favourably by exposing them to the successful tribal farmer's fields, by organizing awareness programmes and by conducting field demonstrations on improved agricultural technology in the same farmer's fields.

- More than half of the farmers (51.25) had disagreed that it is better to use old practices than to take risk in improved agricultural practices. This clearly shows the positive attitude of the farmers towards improved agricultural practices. 28.75 per cent farmers were agreed and 20 per cent farmers were undecided with regard to the same statement. These respondents are still depending only on podu and do not effort to take risk in adopting the improved methods. The major constraint for this farmers is lack of plough bullocks. To create positive attitude towards improved practices technologies have to be developed to suit the conditions of tribal farmers especially for cultivation of podu.
- A majority 48.75 per cent of primitive tribal farmers are in positive view that the improved technology should be undertaken extensively. The farmers who are convinced with the improved technologies feel to extend to other farmers. At the same time this was disagreed by 40 percent and undecided by 11.25 percent. The reason being the tribals strongly feels that the improved varieties comes to harvest in a time which do not synchronise with the time of their festivals. The custom of the tribals is to harvest the crops and celebrate their festivals by cooking the grain of the harvested crop. The culture of the tribals is disturbed which is the common concern of many of the respondents. To create favorable attitude towards improved technologies further research is required to evolve which synchronize with festival dates of tribal farmers.
- Use of improved agricultural practices enhances the infestation of pests in crops was agreed by 47.5 per cent of the respondents, undecided by 17.5 per cent and disagreed by 35 per cent of the total sample. The reason for agreement is farmers apply nitrogenous fertilizers at a single dose during July–August which leads to luxuriant vegetative growth of the crop and hence susceptible to the pests. Knowledge of optimal use of the fertiliser, exposure visits to research farms and training will change the attitude of the tribal farmers.
- 36.25 per cent farmers have agreed with the statement that the improved agricultural technology is not the solution to remove tribal poverty and it was undecided by 30 per cent and disagreed by 33.75 per cent of the

total sample. During discussion, the agreed farmers expressed that the awareness on importance of different activities like education, health of the person is more important in social development. Once if they have understood the value they will automatically implement the improved agricultural practices. The disagreed and undecided category of farmers are of the view because the impact of the improved technologies have been realised by them.

- It adds prestige to be adopter of a new practices was agreed by 65 per cent, undecided by 23.75 per cent and disagreed by 11.25 percent. All the agreed category respondents are the beneficiaries of one or the other field demonstrations conducted by the extension agents. The successful demonstrations and the contacts with the extension agents/officials attach lot of prestige to the tribals. Majority of the undecided and disagreed farmers are either uncovered by the extension agents/officials of the I T D A or the demonstrations might have not resulted fruitful. Extension agents should keep this in view.
- A majority 46.25 per cent respondents have agreed that the country plough is not desirable than the recommended iron plough for thorough land preparation. 30 percent were undecided and 23.75 percent disagreed. Though many of the respondents agree with the statement and aware of the advantages of iron plough they still use country plough, the reason being the local breed has less draught power and cannot pull the heavy equipments. And since a majority of the respondents still depend on the podu cultivation, using a hand hoe locally called 'gobbam' for dibbling. The importance and the usage of iron plough have not been realised by the farmers. To create a favourable attitude towards iron plough combined efforts of Veterinary Assistant Surgeons and the extension agents in motivating the tribals is required.
- A majority 51.25 percent of the respondents agreed with the negative statement that the "foundation of tribal prosperity does not depend on improved agricultural practices". The reason being these respondents mostly depend on the collection of Minor Forest Produce (MFP) and wages

from schemes like Vana Samarakshana Samithi (VSS)/ food for work programmes etc., besides cultivating the podu and little or no plain patta lands. Under such forced conditions the improved agricultural practices finds no place to change the tribal economy. 33.75 per cent of the respondents have disagreed and 15 percent are undecided with the statement. This category of respondents possess plain lands besides podu and practices improved production technologies. From this it can be inferred that there is a lot of scope for the researchers to develop technologies suitable to the conditions of the Primitive Tribes living solely on podu and MFP's.

- The statement "Getting soil tested before the use of fertilizers is advantageous" was agreed by 45 percent of the respondents, undecided by 33.75 per cent and disagreed by 21.25 per cent. All the agreed respondents have been cultivating plain lands and using fertilizers. The undecided and disagreed farmers are mostly podu cultivating farmers, where they donot use fertilizers. Some farmers even today are not aware of the soil testing. To make the farmers attitude positive to wards the soil testing and use of fertilisers the extension personnel have to conduct awareness camps to educate on the importance of soil testing. To establish the credibility the extension agents should have a good liaison with soil testing laboratories to see that the results reaches the farmers before the season start.
- "Improved agricultural technology is the best solution of removing tribal indebtedness", to this statement 52.5 per cent have agreed,17.5 percent undecided and 30 per cent disagreed. The reason being many of the farmers are involved in dry land horticulture besides agriculture in plain lands. Further the conversion of podu into orchards have helped the tribal farmers to increase their income. The farmers in low and medium altitude get a net income of 1000-2000/ per acre during August- September and in Summer. This income is being used to clear off their debts and purchase of clothes etc. Thus it can be inferred that the tribals donot spend money on food grains. The introduction of the improved technology has helped in getting sufficient food grains for their consumption. The undecided

and disagree respondents might have not benefited by the schemes of I T D A for converting the podu into orchards.

- The response of the farmers to the statement on seed treatment with chemicals is not beneficial for crop growth was agreed by 38.75 per cent, undecided by 46.25 per cent and disagreed by 15 per cent. This technology of treating the seed with chemicals to reduce the soil born pest and disease have not been realised by the tribal farmers. The reasons can be attributed to the failure of extension agents in giving demonstrations and creating awarness among the tribals. To create positive attitude towards seed treatment method demonstrations should be taken up to impart the skill in the seed treatment.
- Cultural practices for high yielding varieties are complex in nature.” This statement was agreed by 26.25 per cent, undecided by 35 per cent and disagreed by 38.75 per cent. A majority have disagreed because they are practicing and do not find any difficulty in adopting the cultural practices. The undecided category of respondents are those who either did not realise the benefits of following the cultural practices or lack in skills in adopting the cultural practices. The agreed category of respondents are those who solely depending on the podu and donot use high yielding varieties. To create favorable attitude towards the cultural practices, exposure visits to the successful tribal farmer’s fields or result demonstrations can be organised in the village.
- 58.75 per cent farmers have agreed to the statement that “killing pests that damage crop with pesticides increases the crop yield”. 23.75 percent respondents were undecided and 17.5 per cent have disagreed with the statement. The respondents who have agreed are either they have used the pesticides or they have the knowledge about the advantages of the pesticides. Disagreed farmers are the podu farmers and they are not aware of the plant protection measures. Few undecided people are aware of the plant protection and they don’t have knowledge about selection and use of pesticides. To change the attitude towards plant protection awareness camps, visit to successful tribal’s fields and training programs on knowledge and skill have to be organized.

- “Improved agricultural practices are more suitable for non tribal farmers.” This statement was agreed by 45 per cent, disagreed by 43.75 per cent and undecided by 11.25 per cent. The agreed farmers are mainly those who are cultivating a small piece of land (0.5-1acre) for dry paddy or jowar along with podu. During discussions farmers have expressed that improved technology involves high cost of inputs towards seeds, fertilizers, pesticides besides skill to use. Their economic conditions also do not allow the use of improved agricultural practices. These farmers are of the opinion that non- tribals cultivate larger area and their economic conditions are good when compared to them. 43.75 per cent of the respondents have disagreed with the statement. The reason being this category of respondents have realized increased yields by adopting improved agricultural practices. To change the attitude of the tribals towards the improved agriculture practices extra efforts of extension agents are needed in order to make the tribals understand the suitability of improved agricultural practices. The GCC can play a major role by supplying agricultural inputs to the farmers in interior villages.
- “The statement that the “High yielding Varieties (HYV’s) are equally good for consumption when compared to local varieties” was agreed by 48.75 per cent, undecided by 21.25 per cent and disagreed by 30 per cent of the respondents. The agreed respondents are in the age group of 25-40 years and many of them are cultivating plain lands with HYVs. As such they have become accustomed to consume more of paddy and other the new high yielding varieties of Jowar, Bajra and Ragi compared to traditional food items like sama, korra, tubers, leaves, fruits etc. The disagreed 30 per cent farmers are above 50 years age, cultivating podu and depending on the same old crops and their food have hardly changed. Besides the podu they depend on the forest food products and on the items supplied through public distribution system. The undecided respondents are mainly those who depend totally on the forest foods and the food that they receive in kind from the other farmers as wages and the local public distribution system. The disagreed and undecided farmers prefer local varieties of sama, korra and Jowar as they believe that the local strains

are rich in nutrients and good taste. To create favorable attitude towards HYVs the scientists have to collect local germ plasma and conduct further research in evolving varieties rich in taste and nutrient value and high yielding to replace the local strains. The extension personnel has to disseminate only those varieties nearer to the local strains for acceptance of the technology.

- For the statement that the produce of the crops grown by application of fertilizers reduces the health of tribals was agreed by 26.25 per cent, undecided by 33.75 per cent and disagreed by 40 percent of the respondents. From the discussions it was understood that the agreed and some of the undecided respondents believe that they become weak and prone to more diseases on consumption of food produced by applying fertilizers. It was observed that most of this category of respondents eat rice produced in their fields and do not supplement their diet with the green leafy vegetables, pulses and minor millets. The disagreed and majority of the undecided farmers consume a mix of minor millets they produce from podu and rice that they get from public distribution system and the available traditional forest produce along with seasonal vegetables and fruits. These minor millets includes ragi, korra and sama are rich in calcium and b-complex and iron. These farmers are taking better nutritional food when compared to agreed farmers. So this problem is with the food habits and not with the fertilizers. To create a positive attitude towards improved agricultural practices especially application of fertilizers, the community health workers should educate the farmers on balanced diet and nutrition.
- 27.5 per cent agreed, 46.25 percent undecided and 26.25 percent have disagreed to the statement that “use of fertilizers should be continued even in the absence of subsidy”. The agreed category of respondents were found to have future plans like educating children, purchase of bullocks and living a better life economically and socially. In order to fulfill their aspirations they want to increase the production and income by taking up improved agricultural practices and high yielding varieties. As such these farmers wants to continue the application of

fertilizers even in the absence of subsidy. This category of respondents are more entrepreneurs and borrow money from the money lenders and repay after harvest of the crops with interest. The disagreed farmers mainly depend on podu hence no change in their attitude. After harvesting the better yields (compared to local) majority of the undecided farmers expressed in the absence of subsidy it is difficult for them to use fertilizers without subsidy. To create favorable attitude towards use of fertilizers in the absence of subsidy a tie up has to be made with GCC with a buy back system and can provide all the required inputs to the farmers.

- “The traditional approach towards the pest control is desirable than the chemical plant protection measures” was agreed by 65 per cent farmers, undecided by 16.25 per cent and disagreed by 18.75 per cent. In general the pest attack is minimal for the crops of local strains and grown in podu when compared to that of the high yielding varieties grown in plain areas. The reason being the limited or no use of fertilisers by the tribals in podu cultivation and even in the plain lands. The disagreed farmers are those who cultivate by using fertilisers and pesticides in crops like paddy and red gram. To create a favorable attitude towards the plant protection measures Integrated pest management (IPM) should be promoted and encouraged with the tribal farmers.
- Improved agricultural technology provides a settled living for tribals was reported agreed by 57.5 per cent, undecided by 28.75 per cent and disagreed by 13.75 per cent. During discussion the undecided and disagreed farmers expressed that their land holdings are small, mostly undulated besides lack of awareness on improved agricultural practices. The reason is for non adopting the improved agricultural technologies and still depending on the podu. They further expressed that cultivating podu involves lot of hardship in cleaning and preparing the slopy lands to take up the crops and this land can be put to use for only a limited period of time i.e., 2-3 years. Even after so much of hardship they don't have a settled living. To create a favorable attitude towards improved agricultural practices and for settled living of tribals conversion of podu

into orchard and suitable land development activities have to be initiated to help the tribals in making a settled living.

- * Cultivation of High Yielding Varieties is irrelevant for the tribal farmers was agreed by 51.25 per cent, undecided by 30 per cent and disagreed by 18.75 per cent. Majority of the agreed respondents are podu cultivating farmers with local strains and are forced by the conditions as explained above to take high yielding varieties. Whereas the respondents who have disagreed and undecided, are cultivating plain lands with HYVs. To create a favorable attitude towards cultivation of HYVs, further interventions of the government in land development and distribution of patta lands to the tribals is needed. Besides the extension activities in educating the tribals through field demonstrations and other extension methods.

Conclusions

Majority of the respondents i.e., PTGs indicated that it is better to adopt improved agricultural practices as improved agricultural practices are the solution to remove tribal poverty. Some have expressed that improved agricultural practices are equally suitable for them and cultivation of high yielding varieties are relevant to them. More than 50% of the respondents have desirable attitude towards application of fertilizers and pesticides. One third of the respondents indicated that the produce of the crops grown by the application of fertilizers does not affect their health. This clearly shows that the PTGs might have got significantly higher yield by using improved agricultural practices when compared to local strains and practices which facilitated them not only to keep the grains for consumption but also market the surplus. This shows that it is the right time for the extension workers and the concerned personnel to take advantages of their favourable attitude to make them adopt the improved practices in their farming which ultimately improve their crop yields and also their standard of living.

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