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Research Paper I

Package Programme in Tribal Villages of
Polavaram T.D. Block,
West Godavari District



R-329

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HYDERABAD

1968

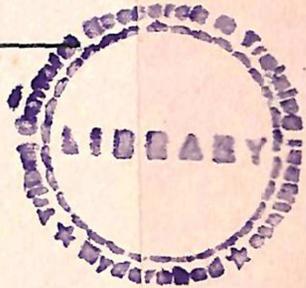
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GCP-2530-31-10-63-10,000.

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PACKAGE PROGRAMME IN TRIBAL VILLAGES OF POLAVARAM
T.D. BLOCK - WEST GODAVARI DISTRICT.

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TRIBAL CULTURAL RESEARCH AND TRAINING INSTITUTE
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PACKAGE PROGRAMME IN TRIBAL VILLAGES OF POLAVARAM T.D.
BLOCK, WEST GODAVARI DISTRICT.

Tribal agriculture suffers from inadequate soil and water conservation, antiquated equipment and methods of cultivation, a multitude of plant pests and diseases, uneconomic holdings, insecurity of tenure, insufficient finances, inadequate and costly credit, lack of incentives to increase production, inadequate knowledge of extension work and the problems connected with agricultural development. In addition to these, proverbial poverty, abysmal ignorance, appalling illiteracy, low level of aspiration, fatalistic philosophy, conservative concepts of agriculture, predominance of magical-religious practices and the recourse to roots and yams of the forest in times of agricultural food scarcity impede the expansion of food production in the tribal areas.

India has been aiming at attainment of self sufficiency in food grains and all the three Five Year Plans had the necessary stress and emphasis towards this end. The natural limitations and poor investment capacity of the cultivators had its own repercussions

an all round development programme of Rural India. It aims at a quick increase in the agricultural production through concentrated, multi-pronged and coordinated efforts in the selected districts. The Intensive Agricultural District Programme provides institutional services such as extension (Technical guidance), production credit, production supplies, marketing services, adequate and timely irrigation for the improvement in agricultural productivity. The cultivators participating in the Package Programme are now largely oriented to adopt the locally recommended 'Package of Practices' as a means of increasing their agricultural production.

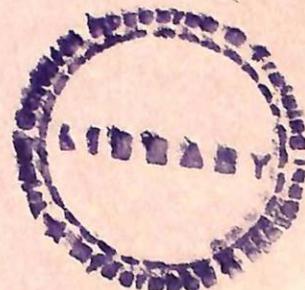
The simple crop production plan, the core of the package programme, will be prepared for all the cultivators in each village. It is a combination (Package) of improved agricultural practices, and the quantum of various supplies and the credit required for implementing the plan. The list of total requirements on the basis of simple crop production plans will be prepared at the block level and sent to the Project Officer for the supply of seeds, fertilisers, credit etc. Seeds and pesticides are being supplied free of cost by the Panchayat Samithi under Package Programme to

the tribal cultivators alone. Fertilisers are being supplied through the cooperative societies at full cost both to tribals and non-tribals. The credit drawn by the members from the Cooperative Society is generally repaid within six months.

The other important aspect of Package Programme is to disseminate the information about and to popularise the improved practices to be adopted by the cultivators through demonstration of various types of plots employing different methods of cultivation, viz., Composite Demonstration Plots, NPK* Observation plots ABC*² Observation Plots and Whole Farm Demonstrations etc. Generally the roadside plots of enthusiastic farmers with irrigation facilities are selected as the Demonstration Plots as these plots are mainly intended for publicity and propaganda of improved practices. Priority is given to food crops in conducting

*1: NPK: N=Nitrogen, P=Phosphorous and K= Potash

*2: ABC: A=Ryot methods, B= Package Practices and C= Adoption of Improved agricultural practices according to soil analysis method.



demonstrations.

The composite Demonstration Plot is mainly intended to show the difference of yield in controlled Demonstration plots*1 whereas the NPK Observation plot is intended for experiments. ABC plots are being conducted to know the difference of fertiliser, doses among Ryots method, Package Practices method and Soil Analysis method. The entire land holding of a farmer is taken as a unit for conducting whole Farm Demonstrations under the guidance of technical staff. An amount of Rs 30/- for each composite Demonstration plot and Rs 100/- for each Whole Farm Demonstrations is given as subsidy to the cultivators. Simple farm business records are also maintained by the village level workers to find out the total inputs and outputs of the farmer. Besides conducting Demonstrations, soil samples are also collected once in 3 years and sent to Soil Testing Laboratory at Tadepalligudem. The results are communicated to the Cultivators and the farmers are advised to apply the fertilisers as per the recommendations given by the Soil Chemist.

*1: Controlled plot = Ryots method, Demonstration plot = Application of Improved practices with technical guidance.

The present study is intended to make a study of Intensive Agricultural District Programme in action in tribal villages of Polavaram Tribal Development Block in West Godavari district.

The total geographical area of Polavaram T.D. Block is 1,36,440 acres (202 sq. miles). This Block consists of 62 villages with a population of 29,119. The total tribal population in this block is 14,315 most numerous of whom are Koyas and Konda Reddis. Red soils, sand loamy and Black loamy soils are found in this Block. Red and sand loamy soils are shallow type and black soils are deep. The land utilisation statistics of this block are furnished below:-

<u>Utilisation particulars in 1966</u>	<u>Acres</u>
Net area sown	16,470
Current fallows	2,562
Old fallows	417
Cultivable waste	2,916
Land put to non-agricultural use	4,000
Barren lands	1,117
Forests (reserved and unreserved)	82,245
Miscellaneous tree crops	<u>1,908</u>
Total area of the Block:	<u>1,36,440</u>

The total net sown area constitutes only

12.07% to the total geographical area. About 60.3 per cent of the total geographical area is under forests. The major crops grown in this block are paddy, jowar, pulses, tobacco, oil seeds, vegetables etc. The average yield of paddy per acre in this block is 10 bags*1 in favourable conditions.

The following statement makes the cropping pattern in the block vivid:

CROPPING PATTERN-1966-67

<u>S.No.</u>	<u>Name of the crop</u>	<u>Area in Acres.</u>
1.	Paddy (wet)	3,050
2.	Paddy (dry)	2,165
3.	Jowar	3,855
4.	Other* cereals	800
5.	Pulses	3,229
6.	Vegetables	317
7.	Tobacco	1,094
8.	Oil seeds	1,300
9.	Fruits	660
	To tal sown area:	<u>16,470</u>

*1: 1 bag = 75 kilograms

Eventhough, the Package Programme was started on a modest scale for selected crops it has gradually been extended to cover more number of crops in most of the villages of the Block. Out of the 62 villages of the block, 47 villages were covered by the Package Programme in 1966. Out of 47 villages covered by the Package Programme 40 are tribal villages. The remaining 15 villages could not be covered by Package Programme since there are no Package crops such as paddy, sugar cane tobacco etc. The crops covered by Package Programme are given below:

<u>Name of the crop</u>	<u>Type</u>	<u>Season</u>
Paddy	Wet	Kharif
Paddy	Dr y	- do -
Vegetables	All types	-do-
Fruit crops	-d o-	-do-
Sugarcane	-do-	-do-
Tobacco	Natu	Rabi
Chillies	--	-do-
Groundnut	--	-do-

During 1960-61 the Package Programme was introduced only for Rabi crops such as chillies, tobacco and vegetables. The remaining crops came under 'Package Programme' from 1961-62 onwards. The gradual coverage

of 'Package Programme' in this block is known from the following table:

TABLE I: COVERAGE OF PACKAGE PROGRAMME(YEARWISE)

Particulars	1960-61		61-62		62-63		63-64		64-65	
	Rabi	K.	R.	K.	R.	K.	R.	K.	R.	
1. No. of villages covered	2	2	3	23	37	49	34	47	27	
2. No. of cultivators benefited.	47	384	132	845	--	1561	482	1596	606	
3. Area covered (acres)	92	2189	312	4486	2167	6642	1927	7022	1948	

As seen from the above table, the 'Package Programme' was put through in action initially only in two villages during 1960-61. No tribal cultivator was benefited by 'Package Programme' during 1960-62. This may be due to the fact that Package Programme during this period covered only Polavaram and Paidipaka villages where the tribal population is very meagre. The coverage of Package Programme as is evident from the above table, is more on 'Kharif' crops than on the 'Rabi' crops. The record as to how many of tribal cultivators were covered by this programme is, however,

*1: K = Kharif
R = Rabi

not maintained separately. Hence three villages with the following criteria mentioned below were selected for study to find out as to how the tribal farmers have taken to improved practices envisaged under Intensive Agricultural District Programme and also to assess the extent of diffusion of the programme:

1. a purely tribal village, 2) mixed village - consisting of tribals and non-tribals and 3) an interior tribal village. The following three villages were selected on the basis of the above criteria:-

1. Mamidigondi
2. Rajanagaram
3. Tutigunta.

As the studies and enquiries conducted by the Study Teams of Intensive Agricultural District Programme reveal that the size of land holding of the tribal farmers has some bearing on the adoption of agricultural innovations envisaged under package programme. The tribal farmers have been divided into 3 groups on the basis of their land holding viz.,
i) small land holding group with an area of 5 acres and less, ii) medium land holding group with an area ranging from 5 to 10 acres and (iii) large land holding

group with an area of 10 acres and above. 18 tribal cultivators have been selected from the three villages for study at the rate of 2 from each one of these groups.

The careful comparative study of the simple farm production plans prepared and farm business records ~~xxx~~ maintained by the concerned V.L.Ws for each one of these cultivators and analysis of the data collected by interviewing the tribal cultivators with regard to the actual implementation of Simple Farm Production Plan for their land and various factors that led to the adoption or non-adoption of the agricultural practices brings to light the inter-play of various factors in the adoption of the agricultural innovations by the tribal farmers. The various improved agricultural practices envisaged under Package Programme in the three tribal villages of Polavaram Block and the factors involved in adopting the package practices are enumerated below:

CROPS : Plan and Practice: The study of the three villages reveals that almost all the cultivators are paddy growers. The tribals did not raise the crops recommended in their Simple Crop production plans other than paddy:



1. The villages are situated in upland rain fed region where agriculture is still 'gamble in rains'. The rainfall is irregular and the other dependable sources of irrigation are absent. 2) Most of the tribals still lead a subsistence level of economy. Any natural calamities can easily push them at the verge of starvation. In such an economy savings are insignificant. The commercial crops like tobacco, sugarcane and chillies are more capital intensive than paddy. The flickering financial position of the tribal farmers does not permit such capital intensive crops. The cropping of capital-intensive crops by the tribal farmers with flickering finances in such an uncertain climatic conditions would mean 'lighting a lamp in stormy winds'. 3) Further, the crops like tobacco and chillies call forth special know how and skill in growing, manuring and controlling pests and plant diseases etc., in which most of the tribals are not adept.

USE OF IMPROVED SEEDS :

17 tribal cultivators who were supplied improved paddy seeds viz., MTU 3, SLO 13 etc., used improved paddy seeds. A few other farmers also started using improved seeds after being convinced of

the better yields of the improved seeds.

SEED TREATMENT WITH FUNGICIDE :

All the tribal farmers of the three villages who were supplied Agrosan G.N. by the Block, treated their paddy seed with Agrosan G.N. The other farmers did not treat their seeds with Agrosan G.N. mainly because it was not supplied to them by the Block and the tribal farmers could not afford to purchase it at a distant place. The introduction of Package Programme made the tribal farmers aware of the treatment of seeds with fungicides.

SEED RATE :

A seed rate of 25-30 lbs in 5 cents of land for an acre of main crop is envisaged under Package Programme. The cultivators did not scrupulously follow the recommended seed-rate. The recommended seed rate could not be adhered to by the farmers for they feared that many saplings might wither away in the event of delayed monsoon and prolonged summer.

SEASON FOR SOWING NURSERIES:

It is observed that all the tribal cultivators irrespective of the village and the type of land holding sowed their nurseries during the optimum period

recommended i.e., 1st week of May to 3rd week of May because they were doing so-even before the introduction of the Package Programme.

NURSERY AND PLANT PROTECTION MEASURES :

In order to reduce the loss of paddy crop due to Stem borer, it is recommended to spray Endrine on the nursery and on the main field once or twice according to necessity, to control stem borer on the first paddy crop (Kharif). But very few tribal farmers were found to be using pesticides. The pesticides are not used since they were not available locally nor are supplied free of cost to all the tribal farmers in time. The effective applications of these pesticides called for the use of sophisticated implements like sprayers and dusters in handling of which the tribal farmers are not adept. The small land holders cannot afford to purchase them nor can they call at the Block office as many times as they are needed to borrow these implements. In case of break-down, repairs and replacement facilities are not available locally. Many tribals still believe that plant pests and diseases are the result of the black magic and wrath of the spirits and therefore they are sceptical about the effectiveness of the pesticides.

USE OF CHEMICAL FERTILISERS :

Application of Ammonium Sulphate at the rate of one lb percent of nursery and application of Phosphatic fertilisers at the rate of 30 lbs per acre in conjunction with Nitrogenous fertilisers of equal quantity is recommended for paddy.

Distribution of tribal cultivators who used the chemical fertilisers in the selected three villages is as follows:

TABLE II: USE OF CHEMICAL FERTILISERS-
TRIBAL FARMERS

Size of land holding	No. of tribal cultivators selected.	No. of tribal cultivators who applied for fertilisers.
-5 acres	6	--
5--10 acres	6	2
10+ "	6	3
Total:	18	5

It is obvious from the above table that the majority i.e., 72.3% of the tribal farmers did not use the chemical fertilisers at all. It also reveals that while the application of fertilisers by the small

land holders is nil, the application of fertilisers increased as the land holding increased. Out of the 18 sample tribal farmers only 5 i.e., 27.7% used the chemical fertilisers in their fields. Even these five farmers did not use the fertilisers at recommended levels suggested in Simple Crop Production Plan.

The reasons for the low consumption of chemical fertilisers are manifold:

1. It was found that the prices of the chemical fertilizers supplied by the Samithi and Cooperatives were higher than the rates mentioned in the Simple Crop Production Plan. The farmers had to call at the Block office more than once for getting fertilisers even at the cost of the daily wages and other urgent and remunerative work. The fertilisers were not available locally and even if they were available locally, they were beyond the reach of the tribal farmers. The fertilisers by the private agencies were sold at very high prices. 2) The other important hurdle in the effective application of chemical fertilizers was the wide spread belief among the tribals that the application of chemical fertilisers ~~affects the intrinsic~~
~~quality~~

of the crop viz., taste and 'purity' and consequently the health of the consumer. It was also believed that the continuous use of the chemical fertilisers would exhaust the natural fertility of the fields in the long run, 3) The tribals of these villages still had quite a few illusions about the possibility of improving their lot as they continued to believe that no amount of human effort is fruitful without the supernatural sanction. Such a fatalistic attitude of the tribal farmers stands as an unsurmountable barrier in the adoption of this innovation by the tribal farmers.

FARM YARD OR CATTLE MANURE:

Application of the farm yard manure at the rate of 30 cart loads per acre of paddy nursery and 8 to 10 cart loads of farm yard manure per acre of the main paddy field was recommended in the Simple Crop Production plan. But most of the tribal farmers interviewed could not apply the farm yard manure at recommended levels mainly due to insufficient production of farm yard manure and partly also due to lack of transportation (carts). As the tribals of these villages were not in the habit of milking the milch cattle, most of the tribals did not have more cattle wealth

to produce enough farm yard manure. Moreover, the existing forest conservancy laws constrain them in herding sheep and goats in large numbers. The tribals were therefore not able to produce sufficient quantity of farm yard manure. Most of the tribals had no carts to transport the available farm yard manure to their fields.

METHOD OF TRANSPLANTATION :

Modified Japanese method of transplantation with a spacing of 8"X4" with two seedlings per hill is recommended according to the Simple Crop Production Plan. It had not gained any ground with the tribal cultivators in spite of numerous demonstrations.

The Japanese method of cultivation is labour and capital intensive. The line spacing in Japanese method of transplantation involves more time. It is difficult to procure more labour force in agricultural peak periods. In this season, bulk of the labour in these villages migrate to the areas where better wages are offered, creating scarcity of labour temporarily in these villages. The procurement of more labour force is therefore not only difficult but far more expensive than is anticipated in Simple Crop Production Plan. Moreover, the tribal cultivators

think that the line spacing in transplattation yields the expected results only in the lands with canals and other regular and stable source of irrigation and only when all the recommended improved agricultural practices are scrupulously implemented as per the advice of Extension personnel.

RODENT CONTROL:

Control of rodents is advocated by the use of Zinc-Phosphide baits in the Package Programme. Our investigation in these villages revealed that none of the respondents adopted the improved method of controlling rodents by zinc-phosphide baiting since the innocent tribal farmers were afraid of using such a deadly poison to control the menace of rodents in their fields fearing that it might accidentally cause danger to the lives of men and their cattle in the process of using it. The existence of an alternative method of controlling rodents by means of less effective rat traps when the rodent infestation is heavy, discourages the use of zinc-phosphide baiting to end the menace of rodents in the paddy field.

The previous paragraphs furnish ~~conclusion~~ evidence that poor economic resources and ignorance of the tribals stand as an unsurmountable barrier in

in the adoption of various innovations envisaged under the Package Programme in the selected three villages. The implementation of improved agricultural practices costs more for the tribal farmers. A comparative study of the cost of cultivation in a demonstration plot and a controlled plot presented in the following table, reveals that the cultivation under Package Programme calls for more capital investment.

TABLE III: COST OF CULTIVATION OF PADDY PER ACRE IN DEMONSTRATION AND CONTROLLED PLOTS.

Sl.No.	Name of the operation	COST OF CULTIVATION FOR			
		Demonstration plot	Controlled tribal plot	Tribal non-tribal age programme.	Controlled tribal plot.
1.	2.	3. Rs	4. Rs	5. Rs	6. Rs
1.	Preparatory tillage	32	20	10	8
2.	Seed	13	10	5	3
3.	Sowing	16	15	10	8
4.	Chemical Fertilisers	50	50	40	20
5.	Organic manure	16			
6.	Inter-culture	11	6	6	5
7.	Insecticides and fungicides	6	--	--	--
8.	Irrigation	--	--	--	--
9.	Harvesting and threshing	26	25	20	15
10.	Others	4	3	3	2
Total:		174	129	94	61

In corollary to the cost of cultivation, the yields in Demonstration plot, controlled non-tribal holding, tribal holding under package programme and controlled tribal holding differs. To illustrate this, the yields per acre of paddy crop in different types of holdings is given below:

Type of Holding	Yield per acre in 1965-66.
Demonstration plot controlled	811 kgs .
Non-tribal holding	650 kgs.
Tribal holding	
a) under package	580 kgs
b) Non-package	400 kgs

But optimum results could not be obtained in many fields of the tribal farmers covered under Package Programme mainly because the tribal farmers did not scrupulously follow the advice of the extension personnel in the application of fertilizers, pesticides and other improved practices.

Most of the tribals still live hand to mouth. In such a subsistence economy there is scarcely any scope for savings. The natural calamities and social crisis push him at the verge of starvation.

In such help-less situations they turn towards the money lenders whose treachrous tactics perpetuates the depression of the tribals. In such a situation the cooperatives and Bl-ocks have treble role to play. The Co-operative movement has to concern itself with the discharge of outstanding debts, with the day to day needs of the tribals, including un-productive requirements and with the needs of development of agriculture under the Package Programme. But unfortunately the Cooperatives could not even meet the credit requirements of the tribal farmers participated in Package Programme at least to the extent recommended in the simple crop production plans mainly due to lack of sufficient borrowing capacity of the Cooperative Societies. The Co-operative Ce-ntral Banks are not coming forward to issue loans to the Cooperative Societies as the share capital of these societies is very meagre. Consequently there is lot of disparity between the credit supplied by the Coope-rative Society. On the whole only 27.98% of the credit requirements of cultivators could be met by the Cooperative Credit Societies. Further, the Cooperative Credit is not popular among the tribal farmers in these villages for it insists on repayment of loan within 6 months. Agriculture in these villages

is still 'gamble in rains', In the year of unfavourable weather the tribal cannot repay the loan within the stipulated period. There are certain social functions celebration of which sometimes disable the tribal to repay the loan within 6 months. As the loans advanced by the Cooperatives and Samithis are production oriented under Package Programme the tribal has to continue to depend upon the money lenders for credit for social functions like marriage, funeral ceremony etc., which are sine-qua-non to the tribal, at exorbitant rates of interest. Moreover the tribals complain of intricate and un-intelligible procedures, the irregularities and inordinate delays in the disbursement of credit at the Cooperatives and Blocks. The tribals cannot afford to call at the Samithi Office and Cooperative Credit Society headquarters frequently. This causes not only the loss of time, and money but entails dislocation in their agricultural operations also. All the above factors contributed to the low rate of borrowing of loans by the tribals farmers from the Cooperative Credit Societies and Samithi. A glance at the table given below drives home the glaring disparity between the credit recommended by the Extension Personnel to the

tribal farmers and the credit borrowed by the tribal farmers of the three sample villages:-

TABLE IV : CREDIT RECOMMENDED AND BORROWED.

S. No.	Village.	No. of cultivators	Credit recommended	Credit borrowed.	Percentage
1.	2.	3.	4.	5.	6.
1.	Rajanagaram	6	2550	410	16.07
2.	Tutigunta	6	2650	775	29.24
3.	Mamidigondi	6	2250	900	40.00

Total:		18	7450	2085	27.98

A glance at the following statement brings home the interplay of various factors in adoption or non-adoption of the various agricultural innovations under Package Programme. Some of the salient features emanating from the foregoing evaluation are also briefly summarised: -

Sl.No.	Name of the improved practice.	No. of factors involved	Response
1.	Cropping of tobacco chillies and sugarcane.	Multi-factorial	poor
2.	Fruit crops and vegetables	Bifactorial	Very poor
3.	Use of improved paddy seeds	Unifactorial	Good

<u>Sl. No.</u>	<u>Name of the improved practice</u>	<u>No. of factors involved.</u>	<u>Response</u>
1.	2.	3.	4.
4.	Seed treatment with fungicide	Unifactorial	Good
5.	Seed rate	-do-	Poor
6.	Season for sowing nurseries	Bifactorial	Good
7.	Spraying pesticides and fungicides on the nursery and main field	Multifactorial	Poor
8.	Application of farm yard manure in the nursery and main field.	-do-	Satisfactory
9.	Application of chemical fertilisers in the nursery and main field	-do-	Very poor
10.	Japanese method of transplantation	Bifactorial	Poor
11.	Rodent control with zinc phosphide baiting	-do-	Poor
12.	Use of improved agricultural implements	Multifactorial	Poor
13.	Borrowing loans from C cooperatives and Blocks	-do-	Poor

QUANTITATIVE ASSESSMENT OF THE DATA GIVEN IN THE ABOVE STATEMENT.

<u>Response</u>	<u>NO. OF FACTORS INVOLVED.</u>		
	<u>Unifactorial</u>	<u>Bifactorial</u>	<u>Multifactorial</u>
Good	2	1	--
Satisfactory	--	--	1
Poor	1	2	4
Very poor	--	1	1

The following table reveals at a glance the interplay of various factors in the adoption of agricultural innovations envisaged under Package Programme by the tribal farmers:-

TABLE V : FACTORS THAT PLAYED THEIR ROLE IN THE ADOPTION OF INNOVATIONS IN THE THREE SAMPLE TRIBAL VILLAGES.

Sl. No.	Name of improved practice.	Compatible with previous knowledge and skill	Giving quick and better results	Technological complexity.	Existence of local market	Local consumption.	Capital & labour intensive.	Time supply of cheap credit	Time supply of needed material	More susceptible to diseases	Need greater care	Prejudices
1.	2.	3	4.	5.	6	7	8	9	10	11	12	13
1.	Cropping of tobacco chillies & sugarcane	N	N	Y	N	Y	Y	N	N	Y	Y	N
2.	Fruit crops and vegetables	N	N	Y	N	N	N	N	N	Y	Y	N
3.	Use of improved 'rad'y' seed	N	Y	N	Y	N	N	N	Y	Y	Y	N
4.	Seed treatment with fungicide	N	N	N	X	X	N	X	N	X	X	N
5.	Seed rate	<u>Y</u>	Y	X	X	X	X	X	X	X	X	N
6.	Season for sowing nurseries	Y	Y	X	X	X	X	X	X	X	X	N
7.	Spraying pesticides & fungicides on the nursery and main field	N	Y	Y	X	X	Y	X	Y	X	X	N
8.	Application of farm yard manure	Y	Y	N	X	X	N	X	X	X	N	N
9.	Application of chemical fertilisers in the nursery & main field	N	Y	Y	X	X	Y	N	N	X	X	Y

TABLE V: (Continued)

	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.	13.
Japanese method of transplantation	N	N	Y	X	X	Y	N	X	N	Y	N	
Rodent control with dincosphid baiting	N	Y	Y	X	X	N	X	Y	X	Y	Y	
Use of improved agricultural implements	N	N	Y	X	X	N	N	N	X	Y	Y	

Y = Yes

N = No

X = Not applicable.

C O N C L U S I O N :-

The Intensive Agricultural District Programme was embarked upon the Polavaram Tribal Development Block with the titanic task of transforming the traditional agriculture by educating the farmers for the collective adoption of the improved agricultural practices by working up a break through in their attitude towards the traditional agricultural practices. To accomplish this objective, a package of improved agricultural practices was developed for all the major crops of the block. An intensive activity and impressive extension programme in 47 villages of the block was gradually launched for this purpose. Huge amounts of money and Herculean efforts by the extension personnel were directed towards this goal. But the results in the tribal villages were not encouraging.

The case studies conducted in three tribal villages covered by the Package Programme in Polavaram Block unfold multiple factors whose interplay led to the low response in the adoption of agricultural innovations introduced under Package Programme. The developmental functionaries of the Programme seemed to have mistakenly thought that demonstrations and

free or subsidised supply of seeds and materials alone would wean the tradition-bound tribals from their antiquated and less productive agricultural practices and make them adopt all the improved agricultural practices . They totally lost sight of various social, cultural and economic factors which stood in the way of adoption of the agricultural innovations by the tribal farmers. Cognizance of these factors by the Programme Personnel at an early stage would have considerably increased the response rate and made the impact of Package Programme in these villages more perceptible. It is never too late for a Programme Official to realise the importance of the social, cultural and economic factors enumerated in the previous pages and explore various means to bypass these barriers to pave the way for effective implementation of Package Programme . Constant and patient persuasion by the Extension Personnel is necessary to make the tribals to take to the improved agricultural practices of Package Programme.

Timely and adequate supply of subsidies to the tribals conducting demonstration plots, of improved seeds, im plements, fertilisers, pesticides and fungicides etc., will encourage the tradition-bound tribal farmer to adopt the agricultural innovations. The

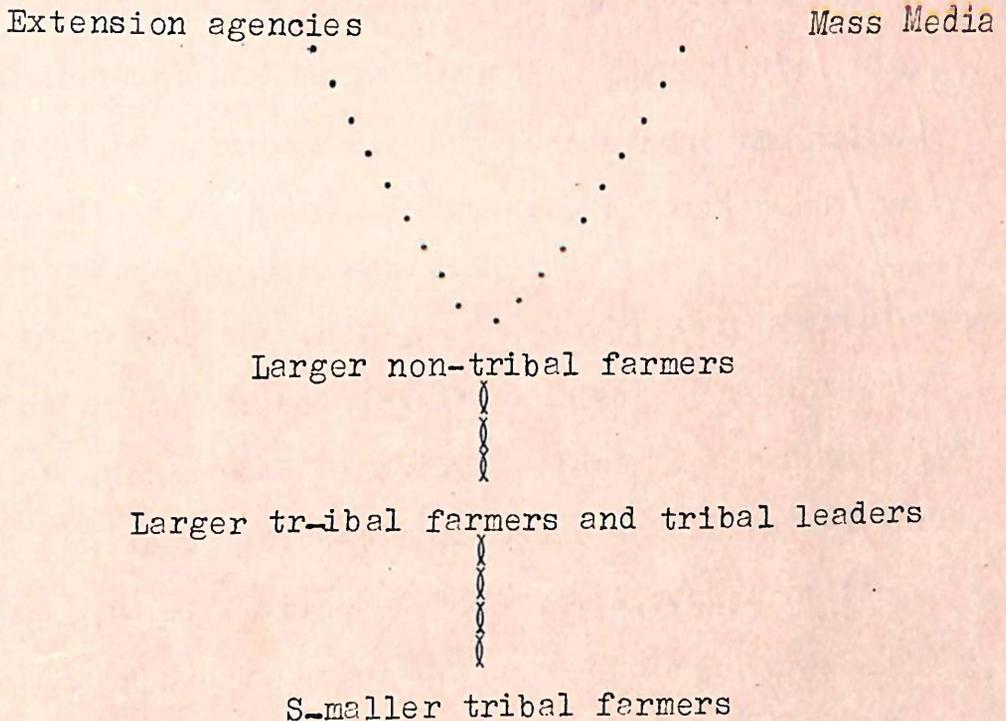
supply of the seeds and materials in the tribal village instead of at the Block headquarters may further enhance the response rate among the reluctant tribal farmers.

For a smaller tribal farmer the adoption of innovations in agriculture is an economic proposition and if it does not yield anticipated results it entails a lot of dislocation and brings distress for the tribal farmer's family. The Cooperatives and Samithis have to extend their helping hand to the tribal farmers by advancing money loans on such terms as to wean the tribals from the chronic dependence on the usurious money lenders. Adequate funds should be made available by the Central Cooperative Banks and the Government to enable the Cooperative Credit Societies and Samithis to advance both productive and unproductive loans to the tribals on liberal terms to enable him to clear off his outstanding debts, to meet the expenditure on social functions and the agricultural investment. Further, there should be 'seasonability' in the timing of disbursement and recovery of loans, so as to ensure the credit provided by the Cooperatives and Samithis will not be mis-used by the tribals. It is told that the money lender diligently visits the villages of his tribal debtors at the time of harvest and

carries away their produce, leaving the Cooperatives and Samithis in the lurch. The problems of security credit worthiness, and recovery find best solution in the establishment of grain golas or Banks which can ameliorate the economic conditions of tribals by providing cheap credit in the form of grain loans and by eliminating usurious money lenders. The administrative delays and intricate procedural niceties are to be cut down in issuing loans. Frequent visits of the tribals for loans to the Cooperatives and Samithis can be avoided by entrusting the disbursement and recovery of loans to the Village Level Workers of the concerned villages.

Importance of communication in the adoption of innovation can not be ignored. Information on Improved Agricultural practices from the extension agencies and mass media in tribal areas first reaches the larger non tribal farmers and then to the larger tribal farmers and tribal leaders from whom the information gets transmitted to smaller farmers. Thus there is time lag in reaching the information to the smaller tribal farmers. Many tribal farmers in the three villages were not aware that the pesticides are freely supplied under Intensive Agricultural District Programme. The

diffusion of information on improved agricultural practices and allied matters from the extension agencies in the tribal areas thus assumes Y shaped communication pattern:



The knowledge based on the careful design and study of communication pattern for diffusion of information on agricultural innovations in tribal areas will therefore be helpful in the successful implementation of Package Programme in Polavaram Block.

In the end, it may be recalled that the adoption of an agricultural innovation by tribal farmers

is an expression of his behaviour. The personality of the tribal farmers influences and determines the orientation of such a behaviour and its associated motivational processes. The personality of an individual has three important ingredients, viz., level of aspiration, change-proneness and value-orientation, which influence, condition and determine the adoption behavior of a farmer. The measurement of the three important personality characteristics of the tribal farmers - level of aspiration, change proneness and value orientation and study of the inter-relationship of these psychological variables and estimation of the relationships of the adoption behaviour with the psychological variables will therefore be not only of immense help for successful implementation of Package Programme but also sufficiently potential to unfold new vistas in the researches of adoption of agricultural innovations by aboriginal agriculturists.

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