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AGRICULTURAL DEVELOPMENT IN TRIBAL AREA

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Vimal Shah

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FOREWORD

As recommended by the Advisory Committee of the Tribal Research and Training Institute regarding publications of the report of earlier completed research works, this report is being published in mimeographed form. If the workers, administrators, researchers, students as well as any person of tribal society could get useful material out of this report, the objectives in publishing it would be realised. I take this opportunity to congratulate each of the research personnel who has been associated with this research project.

Gujarat Vidyapith,
Ahmedabad-380014.

Dhirubhai Manibhai Desai
Vice-Chancellor

PREFACE

In order to impart primary practical knowledge of tribal areas and social survey technique to the trainees of this Institute, they were sent to visit the tribal areas to interview the tribals and to fill up a short schedule there.

Gramsevak trainees of 8th and 16th batch of the Institute collected the information for this survey from two Tribal Development Blocks - Khedbrahma in North Gujarat and Nani Vahiyal in South Gujarat in 1966 and 1968 respectively. This brief report provides insight on some aspects of changes in agricultural practices of the tribals living in the villages of these blocks.

The Institute acknowledges with appreciation the role played by the trainees of the above mentioned batches in this survey.

Siddharaj Solanki
Acting Director

Aim and Method of Enquiry .

Since last several years intensive efforts are being made for the development of tribal areas through the scheme of Tribal Development Block. Under this scheme the greatest attention has been paid on the development of agriculture. A number of programmes have been undertaken with a view to train tribal agriculturists into the methods of improved farming.

These include better cultivation practices, use of irrigation, use of chemical fertilizers, use of improved seeds, use of improved implements and use of pesticides. What impact has been made by these programmes in tribal areas was one of the objectives of a small study undertaken by the Institute. The main objective was to acquaint the trainees of the Institute with the tribal areas and with the changes that were taking place there. The time to be given to the study was limited, and the study was to be undertaken by the trainees who were not trained in research methods. Therefore, the questionnaire that was prepared for the purpose of the study was very simple. Most of the questions demanded the answer either in affirmative or in the negative, that is to say, they were closed questions; again, they avoided unnecessary strain on the memory of informants. Therefore, such statistics whose verification could not be undertaken then and there were avoided. Questions were asked only about some of the most obvious changes in agriculture. This made the task of investigator as well as of the informants very easy, yet the study aimed at giving a sufficient idea of the changes that were taking place in the sphere of agricultural practices.

This enquiry was undertaken in two tribal development blocks. One of them was Khedbrahmma SMP Block*. This block had been working since 1956. It was one of the first three special multi-purpose blocks started in Gujarat. Another block selected was Nani-Vahiyal T.D.Block* in Dharampur taluka. This block had been working since 1961. In both the blocks intensive agricultural development work was going on for last several years. They, therefore, provided sufficient back-ground for the purpose of this study.

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* Enquiry in Khedbrahma SMP Block was carried out in the year 1966 and in Nani-Vahiyal Block in the year 1968.

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From each block one village from every Gram-Sevak circle was selected, and from each village 30 families were selected. These families were so selected as to give sufficient representation to small, medium and large size holders. From Khedbrahmma Block 304 families were selected, while from Nani-Vahiyal Block 264 families were selected.

KHEDBRAHMMA BLOCK

In most of the tribal areas settled cultivation was practised during last 50 years. Before that most of the cultivation was of the shifting nature in which cultivation was undertaken in a cleared plot for about one or two years, and then it was left uncultivated for about 5 to 7 years when it got refertilized in the natural course. Then cultivation would be undertaken in another cleared plot. This plot would also be left uncultivated after this for a number of years. Thus, cultivation would be practised on new plots every time. It was therefore known as shifting cultivation. The method of this cultivation was also very primitive. Under this, land was never ploughed but heaps of waste material collected from the forest and branches of standing trees were spread over the land and burnt. Seeds were then sown with the help of an axe. No other care was taken before harvesting. This method of cultivation was known as "Slash and Burn Cultivation". This method did not require manure, implements or large scale labour. With scanty resources and scarce labour tribals used to undertake shifting cultivation on very extensive area. With the increase in population conditions began to change and it was found increasingly difficult to get sufficient area for shifting cultivation. This forced them to adopt settled cultivation. Again strict observance of forest laws also made it difficult for them to make unregulated use of forest. This compelled them to take to settled agriculture.

Obvious advantages of settled agriculture persuaded them to adopt it in an increasing proportion. Yet, as it is said, old tradition die hard. Because of this, and also because of lack of resources and because of undulating land some of the tribal agriculturists were still practicing a type of cultivation which might be taken as relic of slash and burn cultivation. The changes that had been brought during last 10 years could be seen from the fact that while there were 144 cultivators (47.4 per cent) of the informants) who practised that type of cultivation 10 years ago, now there were only 26 (8.5 per cent) who followed this practise. This meant that that method was fast giving way to plough cultivation. Figures given in the following table about use of

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other improved practices supported our contention that a big change had taken place in the cultivation methods in this area.

TABLE I

Period	Plough Cultivation		Transplantation		Line sowing	
	No.of cultivators	Percentage	No.of cultivators	Percentage	No.of cultivators	Percentage
Before 10 years	182	60	3	1	-	-
At present	258	85	77	26	25	8.2

It could be seen from above table that number of cultivators doing plough cultivation had increased very much and substantial number of cultivators had adopted the methods of transplantation and line sowing. But even now as many as 23 per cent of the informants practised broadcasting or axe sowing which indicated how difficult was the task of agricultural development in tribal areas. There were certain areas, where, because land was extremely uneven, it was difficult to make use of the plough. There, agriculture was possible only by axe cultivation and broadcasting. In such areas, land development became most important. Unless that was done, it was not possible to adopt improved practices in agriculture.

When we examined the changes that had taken place in the field of irrigation, we found that the percentage of informants doing irrigation by any available means, had increased from 73 per cent to 90 per cent during the period. This meant that an overwhelming majority of cultivators were doing irrigation. There had been an obvious change in the methods of irrigation also. Previously only 26 per cent of the informents were using persian-wheel. This figure had now gone to 46 per cent. In the area there was not a single oil engine ten years back, now there were six oil engines.

Looking to the use of manures, it was found that previously there were 8 per cent of the cultivators who did not use even cow-dung manure, now there were none. At present only 18 per cent of the total informants were using cow-dung manure, the remaining used other manures along with cow-dung manure. As many as 50 per cent used chemical manures, where formerly only one cultivator was using it.

Percentage of informants using improved seeds had increased from 5 per cent to 98 per cent. Use of pesticides was being made by 40 per cent; previously none was using them. Use of improved implements also bore the same story. From zero percent the percentage had gone to 56 per cent during the period. Thus it was found that there was an overall development in agriculture.

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Changes in cropping pattern also showed similar trends. Though number of cultivators growing inferior cereals had not decreased, there has been a definite increase in the number of cultivators growing such high value cereals as wheat and paddy. Almost every cultivator was now growing cash crops. Previously their percentage was only 20 per cent. Most of the cultivators grew cotton, ground-nut and castor seeds as cash crops. Some cultivators had even started growing such crops as sugarcane and tobacco. The percentage of informants growing fruits and vegetables had also increased considerably, from 7 per cent to 57 per cent.

Results shown by agricultural development programmes undertaken by the tribal development Block showed possibility of a very good future for the agriculture of this area. It equally indicated the need for sustained efforts. The results only indicated direction of the change, they did not give any idea about the extent of change. A cultivator hardly irrigating two gunthas of land or a cultivator using some quantity of chemical manure only in cash crops such as cotton had been included under the number of cultivators adopting irrigation or using chemical manures. Unless we have a definite idea of the proportion of these uses we could not say anything about the extent of change. But we could without any hesitation, say that the direction of agricultural development of the area had been opened, and important changes were placed under it.

A detailed survey of a village named Patadia of this area was made by the Agro Economic Research Centre at Vallabh Vidyanagar in 1961. The results of this survey were almost similar to ours. Important changes had taken place according to this survey in respect of cultivation practices, use of improved seeds, use of manures, use of improved implements, cultivation of cash crops such as cotton etc. But it was found that the extent of these changes was larger in the case of bigger cultivators while it was smaller in the case of small cultivators. For example use of chemical manures by different size holders was found to be as follows:

Sr. No.	Cultivators	Use of chemical manures per hectare in terms of paisa
1.	With 2 hectares of land	2
2.	Cultivators with 2 to 6 hectares of land	14
3.	Cultivators with more than 6 hectares of land	72

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This use of manures was only confined to cotton. Total agricultural expenses including cow-dung manures, chemical manures, seeds, labour, etc. per hectare also increased with the size of cultivated holdings. Smaller cultivators had Rs.6.60 as per hectare expenditure, medium cultivators had Rs.7.19, while bigger cultivators had Rs.13.79. Thus, though the change in agriculture was found to have spread in all types of cultivators, the extent was not the same. Patadia was one of the best village of the block as far as agricultural development was concerned. Things were bound to be worse in other villages. It was true that this survey was made in 1961, conditions had changed to a greater extent sine then as could be seen from our results.[1]

NANI-VAHIYAL BLOCK

In comparison to the Khedbrahmma block agricultural development in Nani-Vahiyal Block was much slower. The number of farmers practising the type of cultivation which could be taken as relic of slash and burn cultivation had actually increased in this block from 217 to 228 out of a total of 266 informants during the last decade. It was true that this was due to the peculiar circumstances prevailing in this area. Only 24 per cent of the total land was cultivable, while as much as 53 per cent was either under forest or waste land. As cultivable land was very small, people also cultivated land under forest which was given for this purpose on one year lease. In the land being under forest and given under one year lease, the agriculturist was not inclined to make any permanent improvement in it. This land was so uneven that it was almost impossible to bring it under plough cultivation. Hence the traditional type of cultivation was widely ptacticed. During the last decade on account of large increase in population, land pressure had increased, and increasing proportion of forest land was being brought under cultivation. This could explain why the percentage of cultivators practicing traditional method had increased from 82 per cent to 85 per cent of total informants during the period. But alongwith this, we also found that use of plough had increased in cultivating land. Percentage of informants using plough had increased from 41 per cent to 65 per cent and the percentage of cultivators practising transplantation had also increased from 43 per cent to 81 per cent. Number of informants doing irrigation had also increased from 8 to 45, that is to say, from 3 per cent to 17 per cent of the total informants. Rainfall in this area has always been quite heavy and more than sufficient

1. Patadia, A Tribal village Economy in transition, by M.C.Shetty, Agro Economic Research Centre, Vallabh Vidyanagar, Mimeographed.

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for Kharif crops, but irrigation was under taken for growing Rabi crops. It was true that proportion of cultivators growing Rabi crops was still very small. Use of persian-wheel and oil engine had also increased. Previously there was not a single oil engine in the block. Now there were 8. Well-to-do-cultivators had put up oil engine on their wells with the help of the block. Speaking for the block as a whole, one could not say that a sufficient enthusiastic atmosphere for undertaking irrigation had been created.

Conditions were much better in respect of the use of manures. Percentage of cultivators not using any manure had come down from 27 to 2 of the total informants which meant that almost everybody was not using cow-dung manure. Percentage jof cultivators using other manures had also increased from 14 to 60. As many as 38 per cent were using chemical manures. The percentage of cultivators using improved seeds had also increased from 4 to 47, which meant that there has been a good change in this field also. Though the number of cultivators using pesticides was very small (4 per cent) one could take the satisfaction that the ice has been broken. Same was the case with the use of improved implements. Previously nobody was using them, now 17 per cent of the informants were using them.

As far as cropping pattern was concerned, no change had taken place because of the peculiar conditions of this area. The number of cultivators growing inferior cereals has slightly increased. Previously their percentage was 95, today it is 100.

The greatest bottleneck in respedt of land development was that most of the area was under forest. There, land for cultivation was being given only on one year lease. The agriculturist was naturally not inclined to undertake land development in the land. The State Government also did not want to release this land from the forest, hence it was not inclined to give it on long term basis. On account of this vicious circle, agricultural development of this block had many limitations.

Due to good rains, everybody was growing paddy as before. Some more cultivators had started growing wheat. Previously their percentage was 2, now it was 8. Percentage of cultivators growing cash crops such as cotton, sugarcane, tobacco had increased from 3 to 12. Thus, though there had been some changes in cropping pattern, it was very small. It was because of the local conditions in respect of land. As traditional method of cultivation could be easily performed in most of the area, inferior cereals could be grown there. As long as land development was not undertaken on a massive scale in this area, a big change in its agriculture would not be possible.

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We have already seen that within these limitations the agriculturists of this block have introduced certain changes in their agriculture. There was another reason why the change was slower in this block. In Khedbrahmma block there was a good proportion of non-tribal cultivators who have settled there and taken a lead in agricultural development activities. This had benefitted the tribal cultivators also of that block. Nani-Vahiyal Block had no such advantage.

Almost the entire population of this block was tribal which had very little risk-bearing capacity. This would also partly explain why the agricultural development was slower in this block.

There was one more reason for the difference. Khedbrahmma Block had started working in 1956 while Nani-Vahiyal had started working in 1961. Thus the latter had a shorter period of working. Again Khedbrahmma Block, being a SMP Block, got more funds from the Government than Nani-Vahiyal block as it was only a T.D.Block. From the point of view of communication also Nani-Vahiyal Block was much more difficult on account of which block activities had a smaller spread. In Khedbrahmma Block the main population was of Bhil-Garasia who have been acculturated since long. In Nani-Vahiyal the main population was of Warlis and Koknas who have come in contact with the Hindu people to a very small extent. All these reasons accounted for the slower change in agricultural development in Nani-Vahiyal Block.

With a view to show the changes the figures of households have been given in Annextures. As it is likely that the same household might have used more than one method, it might have figured more than once and therefore their total might be more than the number of total informants.

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TABLE II — Household Studied:304

KHEDBRAHMMA BLOCK

1. Methods of Cultivations	Before 10 years (No.of Households)	At present (No.of Households)
Slash & Burn manner	114	26
Broad-Casting	5	43
Ploughing	182	258
Transplantation	3	77
Line-sowing	-	25
2. IRRIGATION		
No.of cultivators doing irrigation	223	275
No.of persian-wheels	80	137
No.of Oil Engines	-	6
3. MANURES		
Non users	23	-
Using only (Cow-dung manure)	274	54
Using cow-dung & other manures	7	250
Using Chemical manures	1	157
4. USING IMPROVED SEEDS	14	296
5. USING PESTICIDES	-	121
6. USING IMPROVED IMPLEMENTS	1	168
7. CHANGING IN CROPPING PATTERN		
Inferior cereals growers	283	282
Paddy growers	241	281
Wheat growers	224	275
Pulses growers	251	282
Cash crops growers	60	301
Cotton growers	31	252
Ground Nut Growers	5	68
Oil Seeds "	33	176
Sugar cane "	-	5
Tobacco "	-	3
Fruits & Vegetables growers	21	172

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TABLE III — Household Studied:364

NANI-VAHIYAL BLOCK

1. Methods of Cultivations	Before 10 years (No.of Households)	At present (No.of Households)
Slash & Burn manner	217	228
Broadcasting	211	226
Ploughing	110	172
Transplantation	114	216
2. IRRIGATION		
No.of cultivators doing irrigation	8	45
No.of Persian-wheels	3	4
No.of Oil engines	-	8
3. MANURES		
Non users	72	6
Using only cow-dung manures	153	99
Using cow-dung & Other manures	39	159
Using chemical manures	-	102
4. USING IMPROVED SEEDS	10	151
5. USING PESTICIDES	-	10
6. USING IMPROVED IMPLEMENTS	-	45
7. CHANGING IN CROPPING PATTERN		
Inferior cereals Growers	255	263
Paddy "	229	252
Wheat "	5	22
Pulses "	219	253
Cash crops "	8	32
Cotton "	-	5
Ground Nut "	7	20
Oil seeds "	3	19
Sugar cane "	3	8
Tobacco "	3	3
Fruits & Vegetables "	2	34

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