



GOVERNMENT OF MEGHALAYA

EVALUATION STUDY ON
JHUM CONTROL PROGRAMME
THE KHARIJHORA REHABILITATION PROJECT

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JHUM CONTROL PROGRAMME

The Kharijhora Rehabilitation Project

Since inception, the State had put a premium on the need to control Jhum or shifting agriculture in order to save the Garo Hills from dangerous soil erosion and wean away the agriculturists from the suicidal course. It had taken the State Government four years of unrelenting effort to convince the Government of India of the necessity and soundness of the Scheme. The aims and objectives of the scheme for controlling Jhum have been spelt out in detail in the State Plan documents and various notes submitted in this regard by the State Government to the Government of India. The Scheme has now been also extended to Jhum areas of the other two districts as well.

In course of the past two years, 14 rehabilitation projects have been undertaken by the Soil Conservation Department. Eight of these projects are in the Garo Hills and three each in the Khasi and Jaintia Hills, according to the scheme, each project should resettle at least 50 jhum families in permanent cultivation in terraces reclaimed for the purpose. This number was of course never meant to be rigid but only to serve as model which would also be viable for enabling provision of other minimum needs like school and water supply in each resettlement project. All these projects are still in the on-going stage. A stage has not yet come in which the Department's work can be withdrawn and the colonies left to look after themselves. The scheme is, therefore, yet immature for evaluation of its lasting impact in any of the projects.

The Kharijhora project in the Garo Hills has been selected to study the experiences of the families now resettled compared to those still in Jhum. This project was preferred because of its comparative isolation insulating it from the usual influences of modernity susceptible to read side projects. Kharijhora is located 6-7 kilometres in the interior east of Adugiri, the nearest road point on the Tura-Dalu road. The approach road constructed earlier has been badly damaged. Kharijhora can now be reached only on foot. The Jhum villages studied are Romba-Sangital (Romba S.) comprising 13 households, Songsak-Nokatgiri (Songsak N.) 6 households and Soksa-Meringri (Soksa M.) 9 families. Romba S. is 2 kms. east of Kharijhora, Songsak N. 2 kms. north-east of Romba S. and Soksa M. another half kilometre farther.

In all, 26 families could be interviewed in the three Jhum villages and 32 families in Kharijhora. Quantification of the information was extremely difficult as the families have practically no idea of standard weights and measures. The fields were given in terms of basketfuls of varying sizes. The harvesting of paddy having been already over by August, the families could only vaguely recall the basketfuls of grain harvested. The paddy was harvested by plucking each ear as it ripened which process may extend upto one month in many cases. This system itself makes estimation by household enquiry difficult. The inexplicable thing was that the Jhum families seemed better informed in weights and measures than those at Kharijhora.

Kharijhora has its own Nokma. The territory under Kharijhora is fairly big. On the north it touches the foot hills of Tura and Nokrek ranges. On the east lie the territories of the three Jhum villages studied. On the west, the Siachiring stream forms the boundary. The south boundary runs across a low range from the Siachiring below Ronggettagiri to a point where the Rongkho stream touches Romba S. territory. To the naked eye, the territory should cover some 50 square kilometres. This region, Jhum and Non-jhum, is still fertile as observed from the re-growth of shrubs and trees on abandoned Jhums. This provides a marked contrast to a sight in Didran catchment and central plateau of the Khasi Hills. The Kharijhora project was started last year i.e. 1974-75. The project has made Kharijhora, the biggest village in the surrounding area and has increased the prestige of its Nokma. The Kharijhora Nokma at present has 32 families under his control. The Nokmas of the next four jhum villages together could marshall only 30 families. Kharijhora has now a population of 167 as against 101 in 1971. Romba S. Songsak N. and Soksa M. had a population of 141 in 1971. Their population now excluding 2 families is 131. We were told that another near-by village (Rangphanggiri) has been reduced to only 2 households with no Nokma at present.

The average size of a family in Kharijhora is 5.22 as against 5.04 in the jhum villages. 55% of the population in Kharijhora is adult (above 15 years) as against 61 percent in the jhum villages. The sex ratio works out to 908 females per 1000 males in Kharijhora and 926 in the jhum villages. 50 percent of the children (0-15 years) in Kharijhora go to school as against 45% in the case of the jhum villages.

IMMIGRATION AND WILLINGNESS

On the records of the Nokma, there are 50 families in Kharijhora. 24 of these families have been brought from other villages. 11 families have come from villages of more than 10 kilometres from Kharijhora while some have come from as far as 40 kilometres. In the jhum villages, 4 families have come from other villages. All the Kharijhora cultivators have at first replied that they have joined the project out of their own conviction of the impending dangers of jhum. On closer discussion, it was admitted that some Government officials and public leaders had explained to them the benefits of a bigger and integrated community. We were also told that some people have sung praise of jhum tradition to them and persuaded against integrated community life in the projects. This might be one of the reasons why near-by jhum villages are reluctant to accept permanent cultivation in the terraces. Immigrant families have been invited to join the project by their Kharijhora friends and relatives. By accepting these families, the Kharijhora project has saved at least 60 hectares (21 bigha per family) annually elsewhere from jhuming.

More proximity to the project has not been the compelling reason for acceptance in the Kharijhora community. Working on the loose principles as at present, it is unlikely that the Kharijhora project will lead to a reduction in the number of jhum villages in the surrounding territories. In fact, nearby Kharijhora there is Rongphangiri with only 2 households which is striving for an identity of its own. As mutual suspicion subsides and fraternity improves and more reclaimed land becomes available in the projects, such villages will further shrink in size no doubt but may not altogether disappear. On the contrary, they might perpetuate as jhum would again become profitable with fewer families depending on them. This in turn would provide a temptation for the settled families to go back to jhum.

While there may be no bar for Jhum families to join a project anywhere, ways and means will have to be devised to regroup the remnants in near-by enlarged project communities. More intensive propaganda would be necessary to counter those preaching jhum tradition. The Department may consider the possibility of using its field workers in this regard. These workers may not be confined to work in

the projects alone. They could act as agents of influence to foster inter-village harmony so that more jhum families from neighbouring villages could be brought to the project area and elsewhere, to infiltrate and indoctrinate the jhum villages before any project is taken up.

LAND ALLOTMENT

On actual enumeration, only 32 households were found in Kharijhora as against 50 on records. The family on record is a family unit as more than one member of the same family was allotted land for cultivation in the reclaimed land. Daughters of marriageable age about to start separate establishment were likewise, given separate allotments. The allotment is made by the Nokma. The 100 hectares of reclaimed land in Kharijhora thus came to be allotted to the 50 families in the list. This system of allotting separate lands for members of some family is in keeping with the tradition also observed in the Jhum villages. On the average, each family cultivates 2 hectares (21 bighas) in the case of a jhum family. Quite many cultivators would like to have more terraced land as the 2 hectares allotted was considered insufficient. One cultivator of Kharijhora had in fact jhum in addition to terrace but not in the Kharijhora territory itself. The rest of the cultivators do not contemplate to take additional cultivation in jhum but would insist Government to reclaim more terraces for them. These cultivators are confident to convince Government of their need in this regard. We were told that the Kharijhora project was taken up on demand by them and therefore, there was no reason why Government should ignore their additional requirement. Even if Government do not come forward, this community contemplates to reclaim on its own the flat land of roughly 100 hectares just below the village. But on observing the tools and implements in use, this is likely to remain a wish at least for sometime to come. The community has held a meeting to consider afforestation of abandoned jhums in the territory with more economic species. We find no reason to doubt their earnest desire in this regard which is in the realm of their feasibility.

REACTION IN NEIGHBOURING JHUM VILLAGES

The jhum Villages are divided on the efficiency of terrace cultivation. Permanent villages though depending on Jhum do have some permanent cultivation on homesteads in the villages. Homestead lands extend upto a bigha and were planted with perennial crops like banana, areca and jackfruit. These villages think they will have to leave these crops behind in case they are resettled in the terraces. The villages Sangsak N. and Soksa M. would like to shift to permanent cultivation if terraces are created in their area even though the slopes are steeper.

In contrast, Romba S. has no faith whatsoever in the terraces. The cultivators think that Jhum which they have practised for generations is quite efficient and simple and permits use of their simple tools. As Jhum has sustained them for unknown generations, they cannot see any reason why someday it can forsake them, at least the present generation which they feel is too old to change the life style for the lure of the terraces. They fear of conversion although some of them have accepted Christian sons-in-law. Kharijhora accommodates both christian and non-christian families. Romba S. has noted that in terraces, the top soil is buried deeper down and therefore, it will not be possible with their simple tools to scratch for the fertile soil in the terrace. On the suggestion that power tiller could be used, the cultivators fear that the noise it gives out would offend the second god. What Romba S. has seen in nearby Kharijhora was the luxuriant crop with no grain, a fantastic weed and a regimented cropping pattern. Above all, they fear that the freedom to cultivate as much land as one can would be lost. In the Jhum they would clear as much as 4 hectares where as in the terrace they would have to be content with only half as much. There was a veiled suggestion that those satisfied with only so little cultivation must be less enterprising people.

There is no truth about fear of freedom of crop pattern in Kharijhora. The cultivators were free to choose what crop to grow in the reclaimed land. The Department only advised what crops would be more beneficial to them. In fact the crop pattern is same practically in Kharijhora as in Jhum. The paddy crop in Kharijhora this year failed to reach the expectations. The causes were (1) late sowing on account of late arrival of the machineries to plough the terraces (2) stoppage of irrigation due to damage of the dam which has yet to be restored and (3) attack by insects/pests at the flowering stage. One or two cultivators lost their crops also due to wild pigs which is also a menace to jhums. Even with these

handicaps, the yield in the terraces was found to be higher than in the jhums. On the basis of household information, this is 50 percent more than in the jhums. Weed of course is a problem less in jhum than in the terraces. There is truth regarding loss of top soil in the terraces especially in steeper slopes necessitating fertilizers to ensure uniform growth of short-rooted crops. An improved method of reclamation has to be devised so that the top soil is retained on the surface of each terraces. In Kharijhora, however, this has not been a problem as the land is comparatively flat with a maximum incline of about 20°.

HOUSES

The 50 families in Kharijhora are settled in houses constructed with subsidy from Government. Each family is allotted a store-cum-bed rooms house and a kitchen. In the Jhum Village, the same house serves all these purposes. There is no marked difference in the floor area of a house in the project and in the jhum village. Since more than one family on record reside in the same house in the project, some of the houses at Kharijhora are lying idle and unattended till the daughters to be married start their own establishment. Since these houses are of bamboo and thatch, some of them may not last till the marriage. Maintenance and reconstruction would of course be done by the families themselves.

SCHOOLS

In Kharijhora, there is one L.P. School. 37 children or 50% go to school. In Romba S. also there is a school with 8-9 pupils. In the other two villages there is no school but 14 children are sent to schools in near-by villages 2-3 Kms. away. School going is left to the wish of the children in both groups of families which is responsible for the lower enrolment. The Romba S. teacher is paid Rs.40/- p.m. by the Catholic Mission while the Kharijhora teacher is paid Rs.140/- p.m. by the District Council. Both the teachers take up part time cultivation. The one in Romba S. also practises jhum and the other at Kharijhora cultivates in the terraces.

LIVESTOCK

Cattle and poultry are kept both at Kharijhora and in the jhum villages. The milk is for the infants and household consumption. In Kharijhora, one cultivator supplies milk to some other households as well. Poultry and eggs are sometimes sold but not as a regular source of income. Cattle look healthy and well fed in both the groups. To the lay men, they should give good beef. In Kharijhora, they are tethered while in the jhum villages they are tended to graze. In the

Jhum villages pigs and goats are also found, the former are allowed free to roam. In Kharijhora, rearing of pigs is forbidden by the community due to fear of damage to crops. They, however, appreciate the suggestion that keeping pigs in enclosures might be paying in utilizing the tapioca and pumpkins grown in abundance. There was no sign of improved breeding in any livestock. All these villages have not seen a veterinary man.

HEALTH AND SANITATION

The type of drinking water supply is same in Kharijhora and in the jhum villages. Water supply is from springs and when these dry up from streams. Water supply was not adequate from this point. All these villages prefer small ring wells. The families interviewed cannot recollect of any water borne disease having affected them which suggests that the quality of drinking water is quite good. There was no occurrence of small pox. The people have been vaccinated. We were told that health personnel visited these villages regularly. Kharijhora has pit latrines which are absent in the jhum villages.

COTTAGE INDUSTRY, ETC.

Cottage industry consists only of bamboo works like baskets and other appliances for the household. Wooden plough is made only by one cultivator at Kharijhora. The other agricultural implements were purchased from the markets. There is no sewing machine in any of the villages. The clothes are all purchased. The families at Kharijhora are comparatively better dressed than those in the jhums. A man at Kharijhora at least wears a black bakini or under wear and quite a number are with shorts and vests. In the jhum villages, the loin cloth is more common. Most women put on a sort of a sarong and Blouse in these villages. Both at Kharijhora and the Jhum villages, some women could still be seen in their traditional topless dress. There are two radio sets in Kharijhora but none in any of the jhum villages.

The people in both groups drink the local brew. Drinking was more liberal in the jhum villages and more restrained in Kharijhora. In Kharijhora, we were told there was no brewing this year although there was no restriction. The reason given was need to conserve grain due to less harvest this year.

EMPLOYMENT

There is no wage labour in Kharijhora. Every member of the family is engaged in own ~~own~~ cultivation in the terraces or in the home stead gardens or in domestic work. The baggages of the enquiry party on return journey were carried out of respect and payment was refused.

In Sangsak N. and Soksa M. also there was also no wage labour during enquiry. But during the off season, some persons worked on wage in collection of road metals 7-8 kilometres from the villages and some went to places near Tura to extract bamboo from the jungles for sale.

In Romba S., 2 families have worked as labourers for the greater part of this year. These families worked in group and no distinction was made between male and female. Sometimes member from other families joined this group. During the work season, they were given meals and at harvest a share of the crops. On rough calculation the wage rate works out to Rs. 3.50 per day. These two families have earlier cleared and planted 30 high-as (4 hectares app.) each of jhum. But on pressure of work of close relatives, they have abandoned most of their own cultivation and attended to only about 3 highas each. For the last one week these two families were without employment but were maintained by their close relatives. Another man worked outside the village in road maintenance on monthly payment.

No body in Kharijhora as also in the jhum villages would reply that they were unemployed. They would say they were not working for some days but that does not mean they were seeking work though they might or might not be available for work. In fact, any suggestion that they could be without work would hurt their pride. In this situation, it is virtually impossible to evaluate employment and unemployment in terms of standard concepts. The christian would say he worked at least 5 days in the field and 6 days a week when he does not go to the market and rests only on Sunday. The non-christian does not take rest at all except on market days and festivals. On further discussion, however, it could be inferred that cultivators were not adequately occupied for at least 3 weeks before the slash is burned, 3 weeks after paddy sowing and 6 weeks after paddy harvest. During these periods they would of course be doing something one or two hours a day attending minor crops or other works of minor consequence.

For preparing the soil, the Jhum family has to start clearing from about the middle of November till about the end of January. In late February and March burning and scratching the soil would take place. In the terraces, tilling of the soil starts from February. In the Kharijhora area, sowing or planting the seed is about the same time both in the terraces and in the Jhums. There is thus a clear gain of about 2 months' time in terrace in this operation. We were told that in Kharijhora, this period would be utilized in attending and collecting the second crops they have now sown or being planted. Some of the terraces have already been ploughed with bullocks and some with hand tools. However, Kharijhora is still yet to see cultivators in all the terraces for the second crops but there is ~~unmistakable~~ ^{unmistakable} sign that the idea is catching up. With more intensive use, the terraces should ensure fuller employment of the labour force.

AGRICULTURAL IMPLEMENTS

The implements used by the cultivators at Kharijhora and in the Jhum villages are same. In Kharijhora, however, there has been less use of the outlass for the obvious reason. For digging the soil, a small pick is used by both the groups. In Kharijhora, a plough, spade and crobar could also be seen but not in use by all cultivators. Without the hoe and spade, it is doubtful if soil preparation in the terraces would be as efficient as required and would necessitate continuation of power tillers and tractors by Government. None of the cultivators at Kharijhora has purchased a power tiller but a few would like to do so and learn to operate provided they are afforded the means.

In case Government tractors and power tillers are delayed again at Kharijhora, the cultivators will have to simply wait or fall back upon the pick. In case of the former, they would get cause to blame Government for late sowing. It is desirable that they should be told in advance as to when the machineries can be expected especially when the damaged approach to Kharijhora is yet to be restored. The wider impact of delay and uncertainty is bound to be unfavourable for future expansion of the project.

CROPPING PATTERN

The cropping pattern is practically the same in Kharijhora and in the jhum villages. Paddy, maize, millet, pumpkins, melons, tapioca, chillies, brinjal, sweet potato and cotton are grown by both the groups. Mesta is also grown in the jhums but not yet in Kharijhora. Only a few families in Kharijhora have grown cotton this year. The families are contemplating growing of permanent crops like banana, areca and fruits like the permanent jhum

villages. During the enquiry, mustard seed has been sown in some of the terraces - this crop is absent in jhum.

The crops are grown mixed both at Kharijhora and in the jhums. Sweet-potato and oilseeds are taken up as second crops in Kharijhora. In homesteads, tapioca and yam are taken up in purer form. In the terraces, tapioca is grown on the boundaries. In a cropping fashion like this, it was indeed a task of separating the statistics of each crop. On eye observation, it would appear that three-fourths of the cultivation is under paddy. It was impossible to guess they are under other crops scattered in the cultivation during the course of this short enquiry.

The impression one gains during this enquiry is that Kharijhora offers a far more greater potential for introduction of new crops. In fact, high yielding variety of paddy and tapioca has been grown side by side the traditional varieties besides oilseeds as an additional crop. This potential is indispensable for modernization of the crop pattern.

The jhum villages are not keen on high yielding varieties because they said they are less tasty than the traditional varieties and have no faith in them.

CROP PRODUCTION

As mentioned earlier, it is very difficult to assess by household enquiry the yield of the crop due to the apparent ignorance of the families in regard to weights and measures. The procedure of harvesting paddy in Kharijhora and in the jhum villages is the same. This is by plucking each ripe ear of the grain basket by basket every day. Harvest of a field by this process may extend to anything like two weeks to one month depending on how fast the grain ripens.

During this period part of the grain would also be consumed. So by the end of the harvest, the cultivator could hardly say how many basketfuls he has harvested, not to speak of 2 months after the harvest. The baskets themselves vary in size and from family to family. The smallest of them would hold about 30 kilos. of paddy and the biggest as much as 120 kilos. Assessment of paddy yield in the terraces and in the jhums should be a subject of a separate enquiry at the appropriate seasons. The harvest was already over when we visited the project and there was no scope to conduct crop cutting experiment even in the crudest form. The manner in which the crops are grown mixed also renders guessing the area under crop difficult.

According to the Soil Conservation Department, each family is allotted 2 hectares (15 bighas app.) of terraced or reclaimed land. The actual allotment was, however, left to the Nokma as in the tradition in the jhums. To the families in Kharijhora this 2 hectares is only 8-10 bighas. According to Soil conservation Department, this understatement was motivated by the desire to get more land.

The manner of mixed cropping in a cultivation is practically same in Kharijhora as in the jhums. By observation, the area occupied by paddy could be put at 75% of the area planted. Relying upon household information and after making allowance for understatement and error on account of the peculiar procedure of harvesting, the paddy crop in Kharijhora failed this year both in the terraces and in the jhums. The yield rate per hectare works out to 683 Kgs. in the terraces and 475 Kgs. in the jhums as against the 779 kgs. per hectare of autumn paddy (clean rice) in the District. The stipulated yield of the terraces is three times that of jhums. Part of the terraces in Kharijhora also used high yielding variety this year apart from chemical fertilizers.

All the cultivators blamed late sowing as one of the causes of the crop failing to reach the expected yield. Because of late sowing, the crop merely attained great heights but bore less grain. The late sowing was due to late arrival of the tractors and power tillers to plough the fields. The crop in the terraces was then adversely disturbed in mid-growth by sudden stoppage of irrigation on account of the intake dam having been washed away. The insufficient rain thereafter could not compensate the loss of irrigation which has not been restored till enquiry. Then at the flowering stage, the crop was attacked by insect pest for which no step was taken to control it. Part of the terraces were also raided by wild pigs when the crop was ripening. The insufficient rain, the insects and the wild pigs were common to the jhum also in this area.

Even under these conditions, the yield rate of paddy in the terraces at Kharijhora was 50% more than in the jhums.

In this hurried enquiry it was not possible to assess the yield rate of other crops in terms of area. Since many common traits could still be found as between the terraces community and the neighbouring jhum families, the average harvest per family is given below.

In kilograms

	<u>Kharijhora</u>	<u>Jhum villages</u>
1. Paddy	1119	1001
2. Msize	67	98
3. Millet	84	51
4. Cotton	15	65
5. Mesta	-	331
6. Tapioca	242	388
7. Chillies	18	10
8. Sweet Potato	74	-
9. Pumpkins, melons, brinjal & other vegetables.	418	421

INDEBTEDNESS

There was no professional money lending both in Kharijhora and in the jhum villages. 7 families in Kharijhora and 11 families in the jhum villages had debts with friends and relatives only. All these loans are of less than one-year duration. The better position of Kharijhora is explained by the fact that the major part of the cultivation, seed and fertilizer is borne by the Government.

No security is demanded for the loans taken. Relationship and intimacy are the sole criteria of credit-worthiness. In the event of dispute, the Nokma settles the cases. The loans taken are both for cultivation and consumption needs. Poorer families resorted to loans when the grain stocks run out and pay back at or after harvest. No formal interest is charged on these loans but on repayment, extra varying upto 25% is given along with the principal.

Outstanding loans range from Rs.100 to Rs.200/- in Kharijhora and from Rs.200 to Rs.625 in the jhum villages. The average debt works out to Rs.34 per family in Kharijhora and to Rs.140 in the jhum villages. Per indebted family, the amount comes to Rs.143 in Kharijhora and Rs.345 in the jhum villages.

9 out of 13 families in Romba S. and 2 out of 6 in Soksa M. are in debt. Sangsak N. is free of debt. Romba S. is the staunch antagonist of terrace cultivation.

: INCOME AND EXPENDITURE :

On the basis of household information, the jhum families derived more cash income during the last one year from sale of the produce than those at Kharijhora. On the average, the monthly cash income per family works out to Rs.51.35 for the jhum villages

and Rs.37.89 for Kharijhora for the last one year. This is explained by the fact that the crops grown at Kharijhora were not yet available for sale during the last one year since the project itself was started only last year. But from now on this picture is likely to be reversed. For the last 30 days, a Kharijhora family could have earned Rs.38.47 from sale of the produce as against Rs.31.73 in the case of a jhum family, 8 jhum families had not sold anything during the last 30 days as against 6 such families in Kharijhora.

The household cash expenditure per month works out to Rs.32.78 in Kharijhora and Rs.44.81 in the jhum villages. The main items of cash expenditure are cloth, kerosene, implements, dry fish, salt, sugar and gur, tobacco and foodgrains.

CONCLUSION AND SUGGESTIONS:

On the whole, the Jhum control scheme in Kharijhora has made a good beginning. To the extent the families now settled in the project no longer practised jhum and to the extent jhumming in the project community territory is not allowed, the scheme has succeeded in the primary aim of checking soil erosion. Kharijhora has emerged as an enlarged community as a result of a single department working with this limited aim. It would be necessary for other departments also to follow-up this spade work of the Soil Conservation Department by taking up work for animal husbandry, poultry, cottage industry, credit facilities, etc. to hasten the process of transformation of the regrouped jhum families into a well-balanced community.

2. The mere setting up of a project like Kharijhora is unlikely to stop jhum in the areas surrounding the territory so long as remnant families are allowed to exist in the nearby villages which have shrunk in size. The demonstration effect of the project and the discretion of the project nokma to select the families alone are not sufficient to attract the neighbouring jhum families to the project area. On the contrary, the continued existence of the shrunken jhum villages side by side the project would be a strong temptation for many of the project families to go back to the jhum. Effort should, therefore, be made to integrate such remaining jhum families in a nearby project or elsewhere, if necessary, by measures involving some amount of compulsion.

3. Kharijhora is now a community, by and large, of friends, relative and like-minded families with common bonds for cultivation in the reclaimed land. The families have also started thinking of a collective approach for reclamation of additional lands, afforestation and maintenance of irrigation. As the community begins to prosper

the items of collective work could be enlarged. In Kharijhora with the families working in close cooperation the jhum control project has, consciously or unconsciously, prepared a nursery in which higher forms of collective society can be aimed and nurtured.

4. Since the projects taken up in these initial years are the torch bearer of the longer-term programme, they should not be allowed to fail as they did in Kharijhora this year on account of damaged irrigation, late ploughing and insect pests the factors which can be controlled now to a large extent. During the three years of Government responsibility at least, each project should be fostered with due attention in all the stages of cultivation. Whenever the Soil Conservation Department apprehends that work is beyond its capacity, it should requisition the help of Agriculture and other departments.

5. The fleet of tractors and power tillers should be strengthened so that the Department can fulfil the ploughing commitments on all the projects undertaken in time. The present pattern of Government doing all the ploughing for the first three years of each project is sowing the seed of too-much dependence on the Government. During this period advance preparation should also be made so that the regrouped farmers are not left in the lurch at the end of the three years when Government machineries are withdrawn. The community should be encouraged to procure and own the machines collectively to ensure that soil preparation remains as efficient. The more enterprising cultivators may be taught to operate the machines so that the Community can look after itself. As a standby for delay and non-availability of the machines, the cultivators should be taught the use of heavier tools like the hoe and spade and bullock plough.

6. The intake bund for irrigation at Khrijhore should be replaced by a more permanent structure capable to withstand the torrent during summer for the obvious reason that the growth of crops should not be hampered by intermitten breach of the bund.

7. In terraces where irrigation is not possible, new crops suitable for dry farming should be introduced and planting of perennial crops should be encouraged by the Department supplying seeds and saplings.

8. In order to enable the regrouped cultivators to meet their credit needs, it is essential that there should be facilities for cooperative credit in each project started. The Soil Conservation Department may explore this possibility by drawing on the expertise of the Cooperation Department.