

Chapter - 5

VILLAGE-STUDY

For examining agricultural responses to land reforms and new technology on the village economy we have taken two villages namely Dangapara and Barohalia from Dhupguri block of Jalpaiguri district, West Bengal. These two villages are selected purposely and are such where adoption of new technology has been widespread and at the same time where land reform measures are preponderant.

Technologically advanced character of study-villages is indicated by the high percentage of cultivators devoting a substantial proportion of their cultivated area to the relatively more profitable crops like HYV-kharif, Boro paddy, potato (Appendix table A2). This is confirmed by the extensive uses of irrigation, fertiliser and modern agricultural implements such as tractor / power-tiller and pump-set which are indicated by the figures presented on the table noted above.

As regards, land reform measures in the study-villages, it has been observed that 58 percent of the total households in two villages have been benefited from such measures and from such other measures of the State which have been directed towards transforming agricultural sector. It should be noted here that the policy of agricultural transformation of the State has been related to development strategy followed in the state. The strategy is land reform based and entails provision of crucial non-land inputs like HYV seeds, irrigation, fertiliser and credit to poor farmers, so as to make them able to carry on

production activities. The operation of the decentralized district level planning in the State has permitted poor farmers through elected Panchayats to be involved in effective implementation of this strategy.

The survey covered all the 364 households in the two villages with a landholdings of 927.1 acres. It has been found that with the implementation of ceiling legislation and the distribution of surplus agricultural land among 61 landless households, a large number of households having land-ownership of less than 5 acres has been created in our Study-villages. Such measures have, at the same time, reduced landlessness in these villages substantially. It should be noted that in our study area a large number of households were a landless sharecropper prior to the distribution of surplus land. About 29 percent (105 out of 364) of the total households in two villages, taken for our Study were landless. This has, however, come down to 9.9 percent now (Table 5.1).

The ownership size class structure in the study-villages is presented in Table 5.1. It shows that:

- i) The small and marginal size holdings constitute 74.4 percent of the total ownership holdings and the area owned by them forms 53.4 of the total area owned by households.

Table: 5.1 Ownership Size-class Structure in Study-Villages.

Size class (in acres)	Percentage of Holdings	Percentage of Owned area (acres)	Concentration Ratio
Landless	9.9	-	-
Marginal	52.2	24.0	0.46
Up to 2.5)			
Small (2.5 to 5.0)	22.2	29.4	1.32
Medium (5.0 to 10)	11.0	27.8	2.53
Big (10.0 to 15.0)	4.7	18.8	3.91
Total	100.0	100.0	-

Average size: 2.55 acres

Note: Concentration ratio is defined as the ratio of percentage of owned area to percentage of household.

Source: Field Investigation.

- ii) The small and marginal size holdings constitute 74.4 percent of the total ownership holdings and the area owned by them forms 53.4 percent of the total owned by the households.

- iii) There is some concentration of land-ownership to a few big size-class of households. It is found that one-fifth of the total owned area is in the hands of only 4.7 percent of households.

The programme of barga recording, introduced in the study-villages, along with the programme of distribution of surplus land have secured access to land for a large number of landless households. It has been observed that in our study area 60.4 percent (32 out of 53) of tenants have recorded their names as bargadars. Such bargadars, whose barga holdings were previously insecure, have been assured heritable continuation of their barga holdings. While 89.3 percent (325 out of 364) of the total households have been found to hold some land as owners, 94.5 percent (344 out of 364) households have been able to operate land. In such larger participation of households' agricultural operation, the poorer households have been able to strengthen their position. It has been found that households operating land below 5.0 acres have formed 84.3 percent of the total operational holdings in the two villages and this group of farmers has been found to claim the largest share (56.1 percent) of the total operated area of the two villages (Table 5.2).

Table: 5.2 Operational Size Class Structure in Study-Villages

Size Class (in acres)	Percentage of Households	Percentage of operated area	Concentration ratio
Marginal (up to 2.5)	60.8	27.9	0.46
Small (2.5 to 5.0)	23.5	28.2	1.20
Medium (5.0 to 10.0)	10.8	26.8	2.48
Big (10.0 to 15.0)	4.9	17.1	3.48
Total	100.0	100.0	-

Average size: 2.69 acres.

Note: Concentration ratio is defined as the ratio of percentage of area operated to percentage of holdings.

Source: Field Investigation.

The figures of the table above reveal that the small and marginal farmers have appeared as the major operators of land in the Study-villages. This observation is in conformity with that which has been observed in our macro-study of the State as a whole. In the circumstances, the development of the village economy, as have been argued earlier, would largely be depended on the productive performance of the major operators of land. And since their productive performance would be largely depended on their access to new technology, we

are to consider their responses to new technology. It is to be noted that such land operators are 290 in number in our Study-villages and it is also to be that all the 93 cultivator-beneficiaries (61 land assignees and 32 recorded bargadars) belong to this major land-operating group.

Farmers' Responses to New Technology

We have a total of 344 farmers to produce crops in either or both season. Adoption of new technology by the farmers of the Study-villages has been quite considerable. This is perhaps clear by the data presented in Appendix Table A1. But responses of the beneficiaries of land reforms to new technology are not revealed by all those data. However, we have studied the responses of the cultivator beneficiaries to new technology. The analysis is presented separately for each season.

The degree of response to new technology has been judged by number of farmers shifting to HYV, area under HYV and shift to modern agricultural inputs. High degree of response of the cultivator-beneficiaries to new technology has been found in our Study-villages. This is perhaps indicated by shift of all such farmers to HYVs in Kharif season as well as in Rabi / Boro season (Table 5.3). We like to note that in the matter of response to HYVs in Kharif season no significant variation among farmers in our Study-villages has been found.

Table: 5.3 HYV Growers and HYV Area in the Group

Season	Growers to total	Area to total cultivated	Per cent
		Area	
Kharif	100.00	98.91	
Rabi / Boro	93.55	97.40	

Source: Field Investigation.

The response of these farmers to new technology has been very high is confirmed when the same is judged by proportion of area under HYV. It is observed from the above table that very high proportion of total area under cultivation in each season by these farmers has been brought under HYV cultivation. It should be noted here that some cultivators of this category have been found to lease out their own land partly or fully to some well-to-do cultivators during the rabi / boro season on fixed cash rent basis.

Modern inputs, viz. chemical fertilisers and pesticides that are crucial to the success of HYV programme, have also been considered. As regards the use of fertilisers, it has been found that all of the cultivator-beneficiaries have been found to use fertilisers and the level of their fertilisers use per acre is much high in *rabi /boro* season than that in *kharif* season. For instance, the average use of fertilisers in HYV rice cultivation has been found to be 98 kgs per acre in rabi /boro season as against 62 kgs per acre in *kharif* season.

The use of pesticides has been very common to the cultivators in our Study area. However, the proportion of the use of pesticides has been found to be 92 per cent for the cultivator-beneficiaries while the same has been calculated at 98.6 per cent for other farmers in the Study-villages. The pesticide use has been universal among farmers who cultivate HYV *boro* paddy crop.

Unlike HYV seeds, fertilisers and pesticides, investment in private irrigation facilities like pumps and tube-wells, and agro-machinery like tractor, power-tiller are indivisible. Besides, installation of these modern farm implements requires a minimum size of holding to be economic. The cultivator-beneficiaries are generally poor and they are at disadvantageous state, due to their poor economic condition, to own such costly modern inputs. In spite of all these obstacles the cultivator-beneficiaries have been found to use services from such mechanical farm inputs considerably (Table 5.4). It has been found that although the cultivator-beneficiaries could not be able to own all such costly farm implements to any significant extent, about 92.82 percent of them have been found to use pump-machine and shallow tube-well to irrigate their crop land. The percentage of the reform beneficiaries who have used tractor/power-tiller stood at about 87.28 (Table 5.4).

Table: 5.4 Ownership and Use of Pumps and Tractors/Power-tillers by Cultivator-beneficiaries in Study-Villages.

Item	Percentage own	Percentage of using
Pump-set/Shallow		
Tube-well	12.07	92.82
Tractor/Power-tiller	1.03	87.28

Source: Field Investigation.

It follows from all these observations that the beneficiaries of land reforms in our Study area have to a large extent responded to new technology. We like to note that our field observation does not provide evidence in support of the observation of Rudra (1981) that the bargadars, after recording of their tenancies, are not in a position to use more of modern inputs than before.

The cultivator-beneficiaries are observed to remain in very poor position (Table 5.4) in possessing modern inputs like pump-set and tractor/ power-tiller. Besides, it would be unrealistic to think that poor farmers can be accommodated to modern agriculture as owner-cultivators or as recorded tenant. Naturally, it seems important to examine as to how these farmers have been able to raise their ability to adopt new technology that requires larger volume of purchased inputs. Similarly, it is also relevant to examine as to how it has been possible for them to use mechanical inputs, in spite of the fact a large number of the users are

either small or marginal farmers without having proper means to employ such. We now try to consider these questions in the following paragraphs.

It has been observed that the cultivator-beneficiaries have been benefited from the formal credit institutions like bank and co-operatives in terms of sanction of crop loans for production purposes. To receive crop loans landed deeds were demanded by such credit institutions as collateral of loans. The '*patta*' of land distributed to the assignees of surplus agricultural land as well as '*barga* deeds' given to the bargadars who have recorded their *barga* holdings have been used as collateral of the crop loans. Land reforms have, thus, created access of the rural poor to the formal credit institutions. The availability of institutional credit has largely helped the cultivator-beneficiaries to raise their ability in purchasing inputs required for adoption of new technology.

We have also attempted to examine tenurial conditions in the Study-villages in order to understand how far the terms and conditions of tenancy have been helping to tenants in the matter of their responses to new technology after *barga* recording. It should be noted that the programme '*Operation Barga*' has been introduced in the State for entering the names of bargadars into revenue record in order to protect them against rent-enhancement and eviction by the landowners. The main objectives of the programme are:

- a) to provide security of tenure to tenants;
- b) to raise the share in favour of the tenants; and

c) to enable the tenants to obtain institutional credit using tenancy contract as a collateral.

In our Study-villages we have encountered 68 tenant households. We discuss terms and conditions of tenurial contracts with respect to these tenant households. We have already stated that the recorded tenants have obtained institutional credit using tenancy contracts as collateral. Now, we discuss the two other matters in the following manner.

However, before going to that discussion we like to present season-wise data about types of tenancy in these villages. The data on the proportion of different tenancy arrangements are presented in Table 5.5. It is observed that the share-crop tenancy arrangement is predominant in the *kharif* season. Fixed produce lease contract and fixed cash lease contract have been found to exist in the *kharif* season but very few amount of land has been brought under these two types of tenancy arrangements.

On the other hand, fixed cash tenancy arrangement is found to be dominant form of tenancy arrangement in the *Rabi/Boro* season in our Study area. It has been reported that fixed cash tenancy contract has been introduced in this region with the introduction of Potato and Boro paddy cultivation.

Table: 5.5 Distribution of Leased-in Land by Types of Tenancy

Season	Proportion of leased-in area under		
	Crop Sharing	Fixed produce contract	Fixed cash contract
Kharif	96.60	3.13	0.27
Rabi/ Boro	28.58	5.20	66.22

Source: Field Investigation.

The share-crop tenancy arrangement which has been found to be the dominant form of tenancy arrangement during the *Kharif* season has not been found to pre-dominate in *Rabi/Boro* season. Only 28.58 percent of leased-in land are under share-crop arrangement as against in *Rabi/Boro* season as against 96.60 percent in *Kharif* season. It should be noted that the crop-sharing tenancy arrangement was the single dominant form of tenancy arrangement in our Study area for all seasons before the introduction of Boro paddy and Potato cultivation. The present tenancy arrangement indicates that technological changes have a considerable influence on the type of tenancy. The emergence of fixed cash tenancy contracts is seemed one of the contributions of introduction of new technology in the Study-villages.

We may discuss now the matter of security of tenancy with respect to the tenants observed in our Study-villages. As regards the security of tenancy it may be said that tenurial security should be judged with respect to tenancy in the

traditional crop only. This is, because, the Tenancy Law of the State was enacted with a view to provide security to such tenant only. It may be noted that the term *bargadar* usually means tenant involved in cultivation of traditional crop only (Khasnabis, 1981).

Table 5.6 shows status of tenure in study villages with respect to cultivation of crops season-wise. The figures presented in the table show that 66.7 percent of tenants who produce only traditional crop have been recorded. This indicates that most of tenants have obtained security of tenure as per the enacted Tenancy Law. For traditional and Boro/rabi crops, tenurial security of 57.1 percent of tenants have been protected. It is found that tenants producing only Rabi/Boro crops have not been recorded in our Study-villages. This indicates that tenants producing only Rabi/Boro crops have not been protected from eviction.

Table: 5.6 Status of Tenure in Study-Villages by Crop Season

Crop Season	Recorded	Unrecorded	Total
Traditional only (Kharif)	12(66.7)	6(33.3)	18(100.0)
Traditional and Rabi/Boro	20(57.1)	15(42.9)	35(100.0)
Rabi/Boro	-	15(100.0)	15(100.0)
Total	32(47.1)	36(52.9)	68(100.0)

Note: The figures in the parentheses are percentages of row total

Source: Field Investigation.

It has been found that there has been an increase in the tenant's share of crop in our Study area. As regards the share of crop, the tenancy law stipulates that the produce will be shared between the landowner and the bargadar and the sharing arrangements are:

- (i) a share in the proportion of 50:50 (lessee : lessor) in case where the lessor supplies all inputs excepting labour; and
- (ii) a share in the proportion of 75:25 (lessee: lessor) in all other cases.

In our Study area, it has been observed that the tenants under share-crop contracts have been able to achieve larger share of the crop. It should be noted that the crop sharing proportion prevailed in the Study area before implementation of 'Operation Barga' was 40:60 (lessee:lessor). At present, the predominant pattern of crop sharing for the traditional crop in our Study area has been one where 50 per cent of the crop goes to a tenant. It may be noted here that the State's land reform effort involving rural masses has created a situation in our Study villages in which the tenants who have not been brought under record have been able to enjoy larger share of the crop. It has been found that 16 unrecorded tenants are now enjoying 50 percent of the crop and one such tenant is enjoying 75 per cent of the crop. As a whole 73.6 per cent (39 out of 53) of the tenants who produce traditional crop are now enjoying 50 per cent of the crop and 9 tenants (17 per cent) are retaining with them 75 per cent of the crop (Table 5.7). The recording of tenancy is seemed one of the causes of

improvement in crop sharing proportion. Such improvement in the crop sharing proportion has perhaps raised economic ability of the tenants significantly.

Hence, it is clear that the tenurial conditions have been improved in our Study-villages after the recording of the bargadars. The improvement in tenurial conditions has certainly raised economic ability of the tenants of the Study-villages and as a result of that they have perhaps been able to respond to new technology to the extent as has been observed earlier.

Table: 5.7 Tenant-Landlord Crop Shares in Study-Villages (For traditional crop only).

Crop-share(tenant:landlord)							
Tenant type	No share	40:60	50:50	60:40	75:25	F. P.	Total
Recorded	-	-	23	1	8	-	32
Un recorded	1	1	16	-	1	2	21
Total	1	1	39	1	9	2	53

Note: Figures in parentheses indicate percentages; F.D. denotes Fixed Produce.

Source: Field Investigation.

It has been found that Pump-sets have been found supplied by the department of agriculture, Government of West Bengal to the poor farmers, taking 5-7 such farmers in a group and sanctioning one set for each group. 16 pump-sets have, thus, been supplied in our Study-villages.

There has been created a market for supply of mechanical input services in our Study area. It has been found that some farmers hire out irrigation water and tractor/power-tiller services to others in terms of money. The poor farmers have taken opportunity of such hire market and have been able to use services of mechanical farm inputs.

Moreover, mini-kits containing improved seeds fertilisers etc. have been distributed among beneficiaries of land reforms and other small and marginal farmers. It is found that about 58 per cent of cultivators have been benefited from the mini-kits distribution.

These, among others, have perhaps helped the cultivator-beneficiaries as well as other small and marginal farmers in two villages, taken for our Study, in the matter their response to new technology. But, institutional credits available to the poor farmers have not been adequate. It has been found in our field inquiry that the smaller farmers including cultivator-beneficiaries have approached for credit to agricultural traders-cum-money lenders and village 'Arotdars' of farm produce against advance sale of their produce. The price considered on such advance sale of produce was the average price of last three-year harvesting

prices. Some of the cultivators have reported to lease out land to others particularly, in cultivation of commercial crops being failed to collect credit necessary for cultivation of such crops.

However, the provision of crucial non-land farm inputs to the beneficiaries of land reforms and other small and marginal farmers has been largely implemented in our Study-villages. The Panchayats have been effectively involved in the matter. As we have found that the provision of crucial non-land farm inputs has largely been related to land reform, it may be said that land reform programmes have helped the small and marginal farmers as well as the cultivator-beneficiaries to a large extent and in a numerous ways in adopting new agricultural technology.