POLICY PAPER 1

IMPACT OF TENANCY REFORMS ON PRODUCTION AND INCOME DISTRIBUTION - A CASE STUDY OF *OPERATION BARGA* IN WEST BENGAL

Edited by:

C.C.Maji
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Sasanka Sekhar Pal

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Impact of Tenancy Reforms on Production and Income Distribution - A Case Study of *Operation Barga* in West Bengal

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FOREWORD

West Bengal has made a significant progress in agricultural and rural development in the recent past. Land reforms in the State is claimed to be a factor. There are others who do not subscribe to this view. Without entering into the controversy it may be pointed out that production relations are universally considered an important determinant of production and productivity.

The large land owners traditionally dominated the rural scene and this was inextricably associated with the exploitative rural power structure and the social status. This was one of the basic reforms on the political agenda in the independence struggle and the West Bengal Estate Acquisition Act 1954 and the West Bengal Land Reforms Act 1956 sought to redress this constraint. Evaluations showed that in West Bengal and other states progress on this front was tardy.

The situation in West Bengal, however, took a radical turn with the assumption of power by the Left Front Government in 1977. Implementation of land reforms was placed on top of the political agenda. Remarkable success followed in terms of acquisition of surplus land and its distribution to the rural poor, especially the landless agricultural labourers. The Government of West Bengal initiated the programme called *Operation Barga* to record *bargadars* (tenants) and provide them with legal security. The programme has been a grand success in terms of the number of *bargadars* recorded. However, controversies and debates ensued in the late eighties about the nature and magnitude of the impact of *Operation Barga* on production, productivity, income, cropping pattern, cropping intensity, input use, employment, etc., on *barga* lands *vis-a-vis* non-*barga* lands.

This study proposed by Visva-Bharati University and financed by the Indian Council of Agricultural Research was conducted in the three important districts of West Bengal to examine the impact of *Operation Barga* through analysis of primary data. The original report

has been condensed, up-dated and edited with policy highlights at the National Centre for Agricultural Economics and Policy Research, and is being published as the maiden number of our Policy Paper Series. The report may not settle the on-going debate as to whether implementation of land reform and *Operation Barga* is the prime mover of economic development in the rural areas of West Bengal, especially of the poorer sections of the society. Nevertheless, it has made a valuable factual contribution. In conclusion, the contributions of the *Panchayats* and other grassroot level organisations in the up-swing of the rural economy of the state should be given due recognition.

March 1995
New Delhi

C.C.Maji
Director

PREFACE

Land reforms is an important instrument for the socio-economic transformation of a country like India, wherein, more that two-third of the population depends on agriculture, land distribution is skewed and tenancy is still very extensive. The need for land reforms was recognised even at the time of Indian Independence and has been reiterated in the successive Five Year Plans. Several progressive legislations where also passed to achieve this, especially during the 50's and 60's. The thrust of land reforms has been along three lines namely, land tenurial system, ceiling on land and distribution of surplus and consolidation of holdings. A review of the achievements on land reforms during the last five decades shows a very sordid picture. The tenancy reforms in general and the land ceiling legislation in particular, have been a failure to a large extent except in Kerala and West Bengal, where these reforms have been carried out almost thoroughly to meet the avowed objectives.The progress made by West Bengal in bringing the bargadars (share-croppers) on record (especially from 1978 onwards) is very remarkable. Thanks to the programme called *Operation Barga* implemented in 1978 by the Left Front Government that came to power in West Bengal in 1977.The idea behind this movement was to prevent the exploitation of the *bargadars* (share-croppers) by the land owners in matters pertaining to their right to tenancy on the lands they cultivate and to an equitable share of the produce, and thereby raising the level of agricultural production, standard of living and income of the *bargadars*.

The present policy paper is based on a study entitled **Impact of Tenancy Reforms on Production and Income Distribution - A Case study of *Operation Barga* in West Bengal** initiated in the year 1985 as an *ad-hoc* research project of Indian Council of Agricultural Research(ICAR). The detailed study report was submitted to the ICAR in 1992. As decided by the Council, the

National Centre for Agricultural Economics and Policy Research (NCAP) undertook the responsibility to abridge, analyse and synthesise the findings of the report for policy conclusions.

We have analysed the said report keeping in view the latest developments, and have extracted the major policy issues. We have also given our own perspectives to these issues. During the editing process some of the earlier conclusions might have been revised in the light of currently available information. Extensive discussions with the author of the original report had helped us in discharging our editorial responsibilities.

This policy paper is addressed to all those concerned with social and economic development. We hope that this report will help the readers in understanding the achievements and shortcomings of *Operation Barga* at the grassroot level and the underlying reasons. The policy directions emerging from the study if adopted sincerely, is expected to bring about positive results in the implementation of such an ambitious programme like *Operation Barga* which, we fear, may otherwise end up as a mere political programme.

New Delhi, India
March 1995

C.C.Maji
Rasheed Sulaiman V
Editors

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1

SUMMARY

Land reforms remains an unfinished task even after four and a half decades of our independence. Tenancy reforms and land ceiling legislations have been a failure to a large extent except in Kerala and West Bengal where these have been carried out almost thoroughly to meet the avowed objectives.

West Bengal alone accounts for 18.6 percent of surplus land distributed so far and 42 percent of the beneficiaries covered in the entire country. The progress made by West Bengal in bringing the *bargadars* (tenants/ share-croppers) on record (especially from 1978 onwards) has been remarkable.

The Left Front Government that came to power in West Bengal in 1977 decided to implement the post-independence land reform measures and in 1978 launched *Operation Barga* - a crash programme for recording *bargadars* in collaboration with the groups of beneficiaries and with the active support of the peasant organisations. Over 14 lakh *bargadars* have been recorded so far out of an estimated number of about 20 lakhs.

Operation Barga has bestowed on the *bardagars* the legal protection against eviction by the land lords. In addition, they have been entitled to the due share of the produce. Measures have also been taken to extend the package of economic assistance to the *bargadars*. In view of these improvements an empirical analysis of the impact of *Operation Barga* on agricultural production, productivity, employment, income including its distribution and on the qualitative improvement in the utilisation of *barga* land becomes imperative for

an objective evaluation of the programme. For this purpose, a field survey was conducted during the period 1986-88 in the three districts of Birbhum, Burdwan and Jalpaiguri in West Bengal for collection of relevant data.

The *bargadars* and the agricultural labourers belonging to the economically depressed class constituted 44.87 percent of the population of the three districts taken together. The numerical strength as well as the increasing socio-political awareness of these two classes of households contributed significantly to the successful implementation of *Operation Barga*. The number of unrecorded *bargadars* was only 2.78 percent of the total *bargadars*.

Most of the *bargadars* were small and marginal farmers. The percentage of small farmers was greater in the case of *barga* operated farm than other types of farm. Although farms under *barga* cultivation had almost the same access to irrigation facilities as others, it is reported that in many cases the recorded *bargadar* farms did not receive adequate irrigation in times of need. This is because most of the shallow tubewells and private pump sets which are necessary to exploit the groundwater sources (contributing to 43 percent of the gross irrigated area) were owned by other cultivators, mainly the owner cultivators. Lands of many poor farmers located within the command area of the private irrigation sources were deprived of timely irrigation facilities mainly because these farmers did not have enough money to purchase water at the prevailing (high) rates.

In the case of the recorded land-owning *bargadars*, the cropping intensity on the leased-in land was lower than that on owned land. Cropping intensity of the recorded landless *bargadars* was, however, the lowest in all the districts. The owner-operated farms had registered the highest yield in 47.87 percent of the villages in the case of local paddy followed closely by the unrecorded *bargadar* (47.37 percent). Similarly, the highest yield of HYV paddy was recorded on the unrecorded *bargadar* farms and owner-operated farms in 57.89 percent and 51.06 percent of the villages respectively. In other crops

too, the highest yields were obtained either by unrecorded *bargadars* (wheat, mustard and jute) or other cultivators (potato, *boro* paddy).

Most of the landless *bargadars* did not have any capital or bullock of their own. Although the recorded *bargadars* received short-term crop loans they did not get badly needed consumption loan. The unrecorded *bargadars* got consumption and all other types of assistance from their land owners, but were deprived of any assistance, financial or otherwise, from the land owners when they got their tenancy rights on *barga* land formally recorded. Provision of adequate and timely financial assistance to the recorded *bargadars* for cultivation and/or consumption would expectedly improve their efficiency and the over-all performance.

Interestingly, the unrecorded *bargadars* have not lost the confidence of their land owners (*jotdars*), who had the command over the labour input of these *bargadars* and normally receive a higher crop share than that received by other land owners from the recorded *bargadars*. These owners of land (cultivated by the unrecorded *bargadars*) also supplied material inputs like fertilizers, seeds, manures etc. creating a favourable condition for more efficient operation of this type of farms.

It is well known that crop shares and cost shares are closely related to each other and efficiency in farming is dependent on the pooling of resources and their optimum allocation between the relatively affluent landlord and the poor *bargadar*.

It is stated in the Share Tenancy Act that 50 percent of the gross produce will be received by the *bargadar* for offering manual labour on *barga*-operated farm, while 25 percent of the gross produce will go to the landowner as rent. The Act further provides that the remaining 25 percent of the gross produce will be distributed between the land owner and the *bargadar* in proportion to their share in cost of material inputs.

It was found that about 21 percent of the total recorded *bargadars* were not getting even the legally admissible 50 percent of the produce as their share. Eventhough *bargadars*, supplying bullock labour and cowdung manure to cultivate their *barga*-land are legally entitled to

receive more than 50 percent of the crop share, it was observed that in practice more than 60 percent of them had to remain satisfied with 50 percent or less of the produce as their share. It is to be noted that 77 percent of the *bargadars* who received 50 percent of the crop as their share supplied bullock power for farming operations implying that only about 23 percent of the *bargadars* received 50 percent of the crop in compensation for their manual labour only. Thus the performance of *Operation Barga* in terms of one of its objectives to ensure the *bargadars* of their legal share of the produce was highly unsatisfactory, even after a decade of its implementation.

There is, however, a positive side of it. Specifically, at least 30 percent of the recorded *bargadars*, were able to secure 50 percent of the crop share for their manual labour only as legally entitled. None of the unrecorded *bargadars* got even 50 percent of the produce. This implies that, *Operation Barga* could ensure justice, to atleast 30 percent of the *bargadars* which would not have been possible in the absence of such a programme.

A comparison of input use pattern among the different categories of farms shows that the use of material inputs on the *barga* land was always less than that on own land. It was also observed that the land-owning *bargadars* used smaller amount of material inputs on their *barga* land as compared to other categories of farmers. Although most of the recorded *bargadars* of the state got subsidised input loan, they did not apply adequate quantities of inputs on the *barga* land, implying the existence of some serious weakness inherent in the Share Tenancy Act, which the *Operation Barga* failed to remove.

The higher irrigation cost observed on the *barga* land (except wheat+mustard) was probably due to increased availability of irrigation facility on these lands as compared to the same on the *bargadars'* own land. Furthermore, the *bargadars* with own land consistently used more labour on their own land than on the *barga* land for all the crops without exception.

Inspite of the higher level of application of all inputs except irrigation, the land-owning *bargadars* could not get higher yield from his own land than that received by the owner-cultivators. This may be

attributed to the differential entrepreneurial input, specifically the superior decision-making ability of the land-owning cultivators which was lacking in the *bargadars* either because of their relatively low level of technical know-how or the inferior managerial ability or both. Better access of the land-owning farmers to both the input or output markets might provide an alternative explanation for this phenomenon.

The Annual Net Return (ANR) per unit of land is one of the important criterion for efficiency of different categories of farms. The ANR after deducting all costs in owner cultivators' farm was found to be about 25 percent higher than that obtained on the own land of the land-owning *bargadars*. However, the ANR earned by the landless *bargadars* and the land owning *bargadars* on their *barga* land was depressingly low. It is interesting to note that the same *bargadars* obtained 75 percent higher ANR on their own land than on their *barga* land. However, the ANR on the *barga* land of the *bargadars'* farms was not so low if the cost of family labour was not deducted from the gross return. The employment of family labour on the *barga* farms was much higher than that on the non-*barga* farms. This may be an important factor regarding the survival of the share tenancy system in a backward agriculture where alternative employmnent opportunities are almost non-existent.

Irrespective of the categories of farms, the return/cost ratios were the highest in local paddy. This high return was one of the important reasons for the predominance of local paddy in the *kharif* season in West Bengal. *Bargadars* who pay more than 25 percent of the produce as rent for the *barga* land were not normally interested in spending more money on material inputs in high-value crops in which the net return per rupee spent on inputs was lower even though the per hectare net returns were higher. The costs of material inputs and irrigation were very high in potato and in most of the cases, these costs could not be covered by 25 percent of the gross produce stipulated in the Share Tenancy Act as the share for the costs of these inputs. In the case of important capital intensive crops, the structure of crop-sharing and cost- sharing needs to be reviewed in accordance

with the total cost structure (i.e., material input costs , labour costs and other costs of production) of the concerned crop.

Thus the choice was really between higher return on expenditure and higher return per hectare. Lack of capital, both working and durable capital, on the farms of all categories the majority(91 percent) of which were below 2.0 ha acted as a serious constraint to grow crops with higher returns per ha which required more inputs including hired human labour.

The analysis in respect of cropping pattern, cropping intensity, input use pattern, land and labour productivity, net return per hectare and return/cost ratios revealed that the land-owning cultivators got a higher yield and higher return than those obtained by the *bargadars* on their *barga* land. Interestingly, the performance of the land-owning *bargadars* was better on their own land as compared to their *barga* land.

Operation Barga appeared to have offered tenurial security and occupancy rights to the *bargadars* on the land they used to cultivate on lease. They also got subsidised input loan for cultivation on their *barga* land. But lack of incentives and opportunities for developing entrepreneurial and managerial inputs on the *barga*-operated land remained an inherent weakness in the *barga* system of cultivation which the *Operation Barga* could not remove.

Prior to *Operation Barga*, the provisions of the Share Tenancy Act were only on paper and of no use to the *bargadars*,but the introduction of *Operation Barga* enforced strict implementation of these provisions giving rise to the expectations that (a) *Operation Barga* would replace the then existing different categories of share-croppers, (b) crop-sharing arrangements would go in favour of the *bargadars*, (c) a majority of the *bargadars* would receive their crop share to which they are entitled in the Share Tenancy Act, and (d) the performance in regard to production and productivity of these *bargadars* would improve.

During the post-*Operation Barga* period new tenancy patterns emerged to suit the requirements of the socio-economic and political power structure of the rural society.Seven different types of tenancy

pattern depending on cost share and crop share were identified. Only 19.4 percent of the total *bargadars* received their entitled share of the produce. It is rather unfortunate that more than 80 percent of the *bargadars* did not receive their entitled crop share even after a long time of the implementation of the *Operation Barga*.

It is also suprising that the cropping intensity in the sub- categories of *bargadars* who received their entitled share of the produce as envisaged in the Share Tenancy Act was significantly lower.Their performance was not at all congenial for cultivation of the high-value, capital-intensive crops like potato and HYV paddy. During the *rabi* and the summer seasons these sub-categories of *bargadars* were not able to cultivate a sizable part of their land compared to other sub-categories of *bargadars* and had a very low gross return per hectare. A higher cropping intensity on the farms of the sub-categories of *bargadars* whoes share in the produce was lower than their entitlement contra-indicates the existence of any correlation between share of the *bargadars* in the produce and the cropping intensity.

The resource-poor *bargadars* were found to obtain the highest productivity as well as the highest net return per hectare in local paddy which was the most important crop in terms of area at the time of this study.

This clearly shows that the receipt of the entitled share of the produce alone may not necessarily bring about a more productive and efficient farming. Eventhough *Operation Barga* ensured the receipt of the entitled crop share to some extent it seems to have failed to increase production and productivity primarily because other related measures were not taken into consideration.

In the case of HYV paddy all types of *bargadars* and their landlords received a positive net return. But in the case of high valued and capital intensive crops like potato, the party supplying the material inputs, bullock power and irrigation charge received a negative net return in most of the cases.

About 50 percent of the sub-categories either of *bargadars* or their landlords would be affected if they were allowed to receive their net

return as envisaged in the Act . The existing provisions in the Share Tenancy Act do not serve very useful purpose for increased investment, a pre-requisite for enhancement of productivity in a backward labour-intensive agriculture of the State. On the contrary, it acts as a hindrance to augment agricultural production on the *barga* land. It is well known that most of the technological innovations in Indian agriculture are relatively capital intensive, and hence 25 percent of the gross produce provided in the Act as share of the material and other inputs (except human labour) is too inadequate to provide an incentive for investment in these crucial yield augmenting inputs to both the *bargadars* and the landlords. In other words, neither the *bargadar* nor their landlord is interested in investment in material and other inputs in exchange of a mere 25 percent of the gross produce as stipulated in the Act.

Crop-wise net return per hectare, calculated after taking into account the "rent" as an element of cost was positive in all types of paddy (i.e.,local paddy, HYV paddy, and *boro* paddy). But in majority of the cases the net return was negative in other crops like wheat+mustard, jute and potato. This might be one of the reasons for allocating a lower proportion of the *barga* land for these crops. It is quite likely that in the long run *bargadars* would be reluctant to grow such crops if their prices are not remunerative and the share in the produce remains unaltered. Even in the case of wheat +mustard and jute which required comparatively less working capital the share of the produce (25 percent) was too inadequate for meeting the cost of non-land and non-labour inputs after payment of statutory rent (25 percent of the produce) and labour cost (50 percent of the produce).This is also true for other crops. The poor performance on the *barga* land may be explained by the conflicting interests inherent in the implementation of the Share Tenancy Act.

In general, the share of the crops earmarked for meeting the cost of material inputs (other than rent of the land and wage of labour) fell short of the "requirement". It is quite likely that neither the *bargadar* nor the landlord would be inclined to spend more on material inputs than permitted by the 25 percent of share of the crop except by accident or ignorance. Productivity will suffer if the level of material

inputs is reduced resulting in a lower share of the produce in absolute terms which in turn would induce still lower level of material inputs and a vicious circle will ensue. The inevitable conclusion is that the system will breed inefficiency, resulting in lower productivity and perpetuate inequality in the distribution of farm income. Thus *Operation Barga* would defeat the very purpose for which it was launched *unless shares of the bargadars in the crops are based on cost structures and their variations over regions and crops, so that inputs including land, and non-land inputs (material inputs and labour) are paid according to their marginal productivities.* The Share Tenancy Act has taken for granted that the *bargadar* is responsible for employment of manual labour on the *barga* land. The Act is, however, silent in respect of fixing responsibility for supplying material inputs on the *barga* land. Naturally, the land owner's optimal strategy would be either not to invest in the material inputs or at most to restrict the spending in these inputs to 25 percent of the value of the produce which is set aside for meeting the cost of the material inputs.

The study concluded that *Operation Barga*, albeit partly successful in bringing about a change in the tenancy pattern, did not succeed in augmenting production and productivity on the *barga* land where the *bargadars* had been receiving the stipulated crop share. Furthermore,the crucial input of entrepreneurship continue to remain low because of the inherent conflict of interest in crop sharing mechanism coupled with the fact that the *bargadars* , especially the landless ones, intrinsically lack this input. However, the most remarkable achievement of the programme was that it enhanced social status of the *bargadars* and security of tenancy.

The unsatisfactory performance of even those *bargadars* who received their crop share as stipulated in the Act , was due mainly to their poor resource base and lack of access to modern technology and to capital market with the resultant inability to acquire material resources. Moreover, the imperfections in input markets also generally contributed to the poor performance of the *bargadars*. The State Government should take serious note of these short-comings and modify the tenancy laws to overcome them as early as possible.

Attempts at diversification of agriculture and allied activities should be initiated to strengthen the resource base of the *bargadars*.Otherwise, *Operation Barga* would end up as a mere political programme providing marginal impacts.

2

INTRODUCTION

Agriculture in India is the principal occupation of two-thirds of her population contributing one-third of the Gross Domestic Product(GDP). Land is,therefore,not only a major source of employment, income and livelihood, but also the basis of our social stratification, power structure, family organisation and even the belief system. Traditionally, the distribution of land in the state of West Bengal is highly skewed resulting in great income disparity among various sections of rural population. There is, therefore, a peremptory need for redistribution of land for providing the rural poor with the required means of production and for ensuring democratic rights to the peasantry and the bonded labour.The need for land reforms was recognised at the time of independence and has been reiterated in the successive Five-Year Plans. The main components of land reforms policy pursued since independence are: (1) abolition of intermediaries, (2) security of tenure for tenant cultivators, (3) redistribution of land by imposition of a ceiling on agricultural holdings, (4) consolidation of holdings and (5) updating of land records.

A review of the achievements on land reforms during the last seven Plans shows a very sordid picture. To quote government records, "the intermediary tenure have been abolished except in some selected pockets. Though ceiling legislations were enacted by all states(except Goa and North Eastern Region) in accordance with the National Guidelines of 1972, its success has been limited due to poor enforcement. In pursuance of the measures taken for tenancy reform, ownership has been conferred on a large number of tenants. In the states where ownership has not been conferred on tenants, legal provisions in tenancy laws provide for security of tenure to tenants and

share croppers against arbitrary eviction and payment of excess rent. However, in many parts of the country, oral tenancy and share cropping still prevail and such tenants and share croppers are too weak to assert their rights and to get relief under the legal provisions enacted for their benefit." [Ministry of Rural Development, Government of India, 1992].

"Inadequate impact of land reforms in many parts of the country has been on account of various factors such as loopholes and deficiencies in laws, insufficient administrative machinery, prolonged litigation, inability of rural poor to fight litigation, lack of awareness among the rural poor, tenants and share croppers about their rights and lack of regular monitoring of land reforms programme". [Agenda Note, Meeting of the Parliamentary Consultative Committee (10 May, 1989), Ministry of Agriculture, Government of India].

Out of the 73.52 lakh acres of land declared surplus, 50.49 lakh acres (68.68 percent) had been distributed by September, 1993 and 23.03 lakh acres (31.32 percent) are still to be distributed (Annual Report, (1993) Ministry of Rural Development, Government of India).

Even after 46 years of independence, the land reforms still remain an unfinished task, inspite of repeated promises made plan after plan and inspite of the repeated date-lines and time schedules worked out and announced with much fan fare.The tenancy reforms in general and land ceiling legislation in particular, have been a failure to a large extent except in Kerala and West Bengal where these reforms have been carried out almost thoroughly to meet the avowed objectives.

The success of land reforms in these states could be attributed to the organised peasant struggles, spread of progressive ideologies and above all the formation of state governments committed to these ideologies. A review of the achievements in implementation of land ceiling (one of the main tenets of land reforms) reveals the progress made by West Bengal *vis-a-vis* other states.

It is interesting to note that West Bengal alone accounts for 18.6 percent of surplus land distributed so far (Table 1) and 42 percent of the beneficiaries covered in the entire country. Moreover, the very

Table 1. Land ceiling achievements - State-wise

(Area in lakh acres) (30th Sep.,1993)

States /U.T.s	Area declared surplus	Area taken possession	Area taken possession as % of area declared surplus	Area distributed	Area distributed as % of area taken possession	Area distributed as % of area declared surplus	Beneficiaries
1	2	3	4	5	6	7	8
Andhra Pradesh	8.01	5.72	71.41	5.11	89.33	63.79	4.37
Assam	6.10	5.65	92.62	4.9	86.72	80.33	4.27
Bihar	4.75	4.00	84.21	2.79	69.75	58.74	3.30
Gujarat	2.48	1.56	62.90	1.30	83.33	52.42	0.30
Haryana	1.21	1.16	95.87	1.13	97.41	93.39	0.40
Himachal Pradesh	2.84	2.81	98.94	0.03	1.07	1.06	0.04
Jammu & Kashmir	4.56	4.50	98.68	4.50	100.00	98.68	4.50
Karnataka	2.74	1.60	58.39	1.17	73.12	42.70	0.72
Kerala	1.36	0.94	69.12	0.64	68.08	47.06	1.43
Madhya Pradesh	2.91	2.59	89.00	1.85	71.43	63.57	0.72
Maharashtra	7.23	6.48	89.63	5.57	85.95	77.04	1.39
Manipur	0.02	0.02	100.00	0.02	100.00	100.00	0.02
Orissa	1.74	1.63	93.68	1.51	92.64	86.78	1.30
Punjab	1.38	1.05	76.09	1.02	97.14	73.91	0.27
Rajasthan	6.10	5.52	90.49	4.4.	79.71	72.13	0.76
Tamil Nadu	1.85	1.71	92.43	1.50	87.72	81.08	1.24
Tripura	0.02	0.02	100.00	0.02	100.00	100.00	0.01
Uttar Pradesh	5.39	5.08	94.25	3.66	72.05	67.90	3.16
West Bengal	12.70	12.01	94.57	9.40	78.27	74.01	20.57
D & N Haveli	0.10	0.10	100.00	0.07	70.00	70.00	0.03
Delhi	0.01	0.00	0.00	0.00	0.00	0.00	0.00
Pondicherry	0.02	0.01	50.00	0.01	100.00	50.00	0.01
All India	73.52	64.16	87.27	50.49	78.69	68.67	48.81

Source: Annual Report (1993) Ministry of Rural Development, Government of India, New Delhi.

fact that 17.4 percent of the country's surplus land is found in a rather small state of West Bengal clearly shows that the provisions of ceiling laws have been implemented rather vigorously leaving little scope for *benami* or surreptitious transactions and fictitious ownership of land by big farmers.

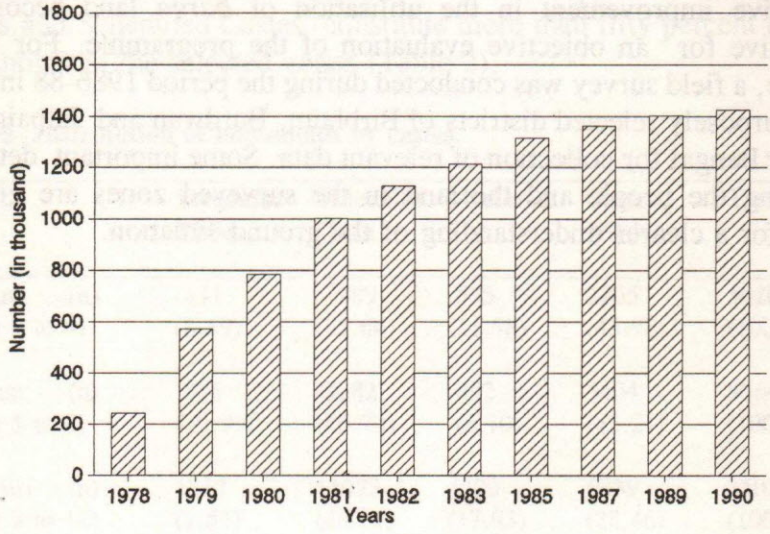
The progress made by West Bengal in bringing the tenants/ *bargadars* (share-croppers) on record (especially from 1978 onwards) is also remarkable. The recording of their status as *bargadars* was essential for ensuring the security of tenurial right and also for providing, among other things, access to institutional finance.

Though the Acts passed to safeguard the interest of the *bargadars* during the 50's and the 60's were progressive, their implementation and hence the impact was practically nil. The Act , especially the *Bargadar* Act 1972 was no doubt radical for safeguarding the interests of the share-croppers . But due to lack of effective implementation of the measures on the one hand and vigorous offensive measures undertaken by the landowners against the *bargadars* on the other, the provisions of the Act were of little use to the *bargadars*. While the arbitrary eviction of *bargadars* continued unabated, the stipulated shares in crops and costs were not followed at all.

There was hardly any legal record of rights on the part of the *bargadars* who had been cultivating lands of the land owners for a long time. Most of the share cropping agreements were oral in character and , therefore, there was no documentary evidence to support their claims. It was also noticed that few *bargadars* came forward to get their rights recorded as *bargadars* despite a clear-cut provision in the Act due to the fact that the rural society was mainly dominated by the land-owning class whose manoeuvrability and nexus with the bureaucracy scare away the *bargadars* (tenants) from getting their names recorded. So it was all the more important to protect the interests of these economically and socially vulnerable *bargadars* from the whimsical, unlawful, and exploitative acts of the land owners (*jotdars*).

Consequently, the peasant movements became aggressive. The Left Front Government that came to power in West Bengal in 1977 decided to implement the post-independence land reform measures and launched in 1978 a programme called *Operation Barga* -a crash scheme for recording *bargadars* in collaboration with the groups of beneficiaries and with the active support of the peasant organisations. The results of this new methodology have been fairly good (Figure 1).

Figure 1. Progress of *bargadar* registration in West Bengal



Source: Lieten,G.K.(1992) Continuity and Change in Rural West Bengal, Sage Publications,New Delhi.

Over 14 lakh *bargadars* have been recorded so far out of an estimated number of about 20 lakhs. Besides, the Government also succeeded in persuading the nationalised banks to extend credit facilities to the *bargadars* and lessees of vested lands for purpose of cultivation. The idea behind this movement was not only to prevent the exploitation of the *bargadars* by the land owners but also to assure them of their legal rights on the lands they cultivate and at the same

time to raise the level of agricultural production and their standard of living and income.

The *Operation Barga* has bestowed on the *bardagars* the legal protection against eviction by the landlords. In addition, they have been entitled to the due share of the produce. Measures have also been taken to extend the package of economic assistance to the *bargadars*. In view of these improvements an empirical analysis of the impact of *Operation Barga* on agricultural production, productivity and employment, income including its distribution and on the qualitative improvement in the utilisation of *barga* land becomes imperative for an objective evaluation of the programme. For this purpose, a field survey was conducted during the period 1986-88 in the three purposely selected districts of Birbhum, Burdwan and Jalpaiguri in West Bengal for collection of relevant data. Some important details regarding the people and the land in the surveyed zones are given below for a clearer understanding of the ground situation.

3

PROFILE OF THE STUDY AREA

The importance of the different castes in the economic transformation of any society cannot be over emphasised. Scheduled Tribes and Scheduled Castes constitute more than fifty percent of the households in the selected zones (Table 2).

Table 2. Distribution of households by castes.

District		Scheduled Tribe	Scheduled Caste	Muslim	Caste Hindus	Total
Birbhum	(n)	431	1789	595	2205	5020
(Zones 1 to 4)		(8.59)	(35.64)	(11.58)	(43.92)	(100.00)
Burdwan	(n)	886	3282	492	3404	8064
(Zones 5 to 8)		(10.99)	(40.70)	(6.10)	(42.21)	(100.00)
Jalpaiguri	(n)	1812	11073	4309	6839	24033
(Zones 9 to 12)		(7.54)	(46.07)	(17.93)	(28.46)	(100.00)
Total	(n)	3129	16144	5396	12448	37117
(Zones 1 to 12)		(8.43)	(43.49)	(14.54)	(33.54)	(100.00)

Note:(1) Figures in the parantheses denote percentages.
(2) A zone represents a cluster of villages selected for the survey.

It may be seen that scheduled caste households dominated the other households in Jalpaiguri district, at least in the study area. The proportions of these households in the total households were also high in Birbhum (35.64 percent) and Burdwan (40.70 percent). Tribal households was found to be the highest in Burdwan district (10.99

percent) while Muslim households formed a substantial part(17.93) in Jalpaiguri.

Table 3. Distribution of households by primary occupation in surveyed zones.

Occupation	Districts			
	Birbhum	Burdwan	Jalpaiguri	Total
Owner-cultivator	824 (16.41)	909 (11.27)	7011 (29.17)	8744 (23.56)
Land owner partly leased out	333 (6.63)	330 (4.09)	946 (3.94)	1609 (4.33)
Land owner totally leased out	244 (4.86)	630 (7.81)	61 (0.25)	935 (2.52)
Bargadar with land	529 (10.54)	1011 (12.54)	1180 (4.91)	2720 (7.33)
Landless *bargadars*	368 (7.33)	448 (5.56)	707 (2.94)	1523 (4.10)
Landless agricultural labour	1303 (25.96)	1809 (22.43)	5367 (22.33)	8479 (22.84)
Agricultural labour with land	419 (8.35)	935 (11.59)	2568 (10.69)	3922 (10.57)
Others	1000 (19.92)	1992 (24.71)	6193 (25.77)	9185 (24.75)
Total	5020 (100.00)	8064 (100.00)	24033 (100.00)	37117 (100.00)

Table 3 shows that more than one-third of the total households were those of agricultural labourers. Out of these labourer households two-thirds have no land of their own. In these three districts, 11.43 percent of the total households are those of the *bargadars* with or without land of their own.

Table 4. Distribution of households by nature of ownership and cultivation

	Birbhum	Burdwan	Jalpaiguri	Total
No. of land-owning households	2349	3815	11766	17930
No. of cultivating households	2473	3633	12412	18518
No. of tenant households	897	1459	1887	4243
Households owning but not cultivating land	244	630	61	935
Percentage of total households as tenants	36.27	40.16	15.20	22.91
Percentage of households owning but not cultivating land to total households owning land	10.38	16.51	0.52	5.21

Note: Calculated on the assumption that agricultural labour households owning land cultivate their land themselves without leasing it out.

Table 4 clearly reveals the importance of *barga* cultivation in the state of West Bengal in general and in the selected districts in particular. Out of the total of 18518 cultivating households, there were 4243 (22.91 percent) tenant households in 1988. The proportion of *barga* households varied from 15.20 percent in Jalpaiguri to 40.16 percent in Burdwan, with Birbhum recording 36.27 percent. These figures indicate the importance and urgency of tenancy reforms for (a) removal of social and economic injustice and (b) increasing agricultural production and productivity. The table also reveals that 10.3 percent, 16.51 percent and 0.52 percent of the land-owning households did not take part in personal cultivation in the districts of Birbhum, Burdwan and Jalpaiguri respectively in 1988. Personal cultivation of land owned by the households was almost ensured in Jalpaiguri.

The class alliance in the rural power structure provides some insight into how the relatively lower percentage of poor *bargadars* fought the powerful land owners' interest. The *bargadars* and the agricultural labourers are both economically depressed. Many of the working members of the *bargadars* family are also working as agricultural labourers. The two classes are close to each other because

Table 5. Association of castes and occupation of the households.

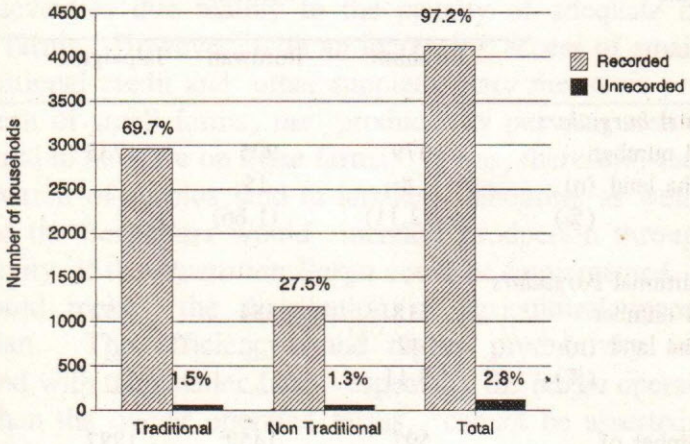
Occupation	Scheduled Tribe	Scheduled Caste	Muslim	Caste Hindus	Total
Owner cultivator	572 (18.28)	4549 (28.18)	1085 (20.11)	2538 (20.39)	8744 (23.56)
Land owner partly leased out	48 (1.53)	574 (3.56)	334 (6.19)	653 (5.24)	1606 (4.34)
Land owner totally leased out	—	42 (0.26)	23 (0.43)	870 (6.99)	935 (2.52)
Bargadars with land	228 (7.29)	1498 (9.28)	367 (6.80)	627 (5.04)	2720 (7.33)
Landless *bargadars*	204 (6.52)	841 (5.21)	316 (5.85)	162 (1.30)	1523 (4.10)
Landless agril. labour	1246 (39.82)	4378 (27.12)	1710 (31.69)	1145 (9.20)	8479 (22.84)
Agril. labour with land	602 (19.24)	2093 (12.96)	689 (12.77)	538 (4.32)	3992 (10.57)
Other	229 (7.32)	2169 (13.43)	872 (16.16)	5915 (47.52)	9118 (24.56)
Total	3129 (100.00)	16144 (100.00)	5396 (100.00)	12448 (100.00)	37117 (100.00)

of various social and economic reasons. The percentage of these two classes of households were 52.18 percent in Birbhum, 52.12 percent in Burdwan, 40.87 percent in Jalpaiguri and 44.87 percent for the three districts taken together (Table 3). Moreover 72.87 percent of the scheduled tribe households, 54.57 percent of the scheduled caste households and 57.11 percent of the muslim households belonged to these two categories (i.e., *bargadars* and agricultural labourers) of households (Table 5).

The numerical strength as well as the increasing socio-political awareness of these two classes of households in the scheduled castes and scheduled tribe and minority community contributed significantly to the successful implementation of the *Operation Barga*.

The number of unrecorded *bargadars* is only 2.78 percent of the total *bargadars* for the three districts (Figure 2).

Figure 2. Distribution of households by types of *bargadars*



The traditional *bargadars* are those who cultivate the leased-in-land with the help of their own bullocks and obtain a share of the produce. This system is very common and has been continuing for a

long time. The percentage of traditional *bargadars* was more than 71 percent of the total *bargadars*. The other type of *bargadars* are called "non-traditional" as this type is not commonly found in West Bengal. They contribute only manual labour for the cultivation on the leased-in land and have no bullock power of their own.

Among the non-traditional *bargadars* the *krishans* of Birbhum need special mention. These unrecorded *krishans* are dependent on their land owners not only for bullock power and material inputs, but also for consumption loans (both in kind and cash) required for sustaining their family during the period of cultivation.

Before the introduction of *Operation Barga* measures, some *bargadars* used to cultivate land owners' land under different terms and contracts dictated by the powerful land owners and were treated as farm labourers employed on an annual contract. Introduction of

Table 6. Number and percentage of *bargadars* with more than 2.0 ha. of leased-in land

Sl.No.	Items	Districts			
		Birbhum	Burdwan	Jalpaiguri	Total
1.	Traditional *bargadars*				
	(a) Total number	379	905	1735	3019
	(b) >2 ha land (n)	8	15	—	23
	(%)	(2.11)	(1.66)	—	(0.76)
2.	Non-traditional *bargadars*				
	(a) Total number	518	554	152	1224
	(b) >2 ha land (n)	42	—	—	42
	(%)	8.11	—	—	3.43
3.	Total number of *bargadars* (Traditional + Non-traditional)	597	1459	1887	4243
	>2 ha land (n)	50	15	—	65
	(%)	5.57	1.03	—	1.53

Operation Barga has provided these *bargadars*(*Krishans*) with an opportunity to record their names as share croppers. The leased-in land of most of these *bargadars* measured less than 2.0 hectares (Table 6). Only a negligible proportion (1.53 percent) of the *bargadars* in the surveyed zones had more than 2.0 hectares of leased-in land.

The percentage of tenant households having more than 2.0 ha of leased-in land was the highest (5.57) in the district of Birbhum. It is intriguing that only in the district of Birbhum, 8.11 percent of the non-traditional *bargadars* cultivate more than 2.0 ha of leased-in-land. Indeed all these non-traditional *bargadars* are *krishans* converted to *bargadars* after *Operation Barga*.

Further, most of these *bargadars* were small and marginal farmers. The percentage of small farmers was greater in the case of *barga* operated farm than other types of farm. Earlier studies based on farm management data indicated that small farms were more efficient in terms of productivity per unit area.However, the trend observed in the Farm Management studies was reversed with the advent of the capital intensive HYV technology in the late sixties and early seventies due mainly to the paucity of adequate capital on smaller farms. However, with an increasing access of small farmers to institutional credit and other supplementary measures provided to the benefit of small farms, the productivity per unit area has again been found to be more on these farms. It was, therefore, thought that redistribution of surplus land to landless labourers as well as small farms of the *bargadars* would increase production through higher productivity if the *Operation Barga* could be implemented. Besides, this would make the distribution of agricultural income more egalitarian. The efficiency and higher productivity, reportedly associated with the smaller farm, especially the *barga* operated farms rather than the owner operated farms, cannot be asserted, without examining various other aspects of the *Operation Barga*.

4

NATURE OF *BARGA* CULTIVATION

Land use pattern in the selected districts are given in Table 7.

Table 7. Land use in agriculture by districts/zones

District	Net cultivated area (ha)	Net irrigated area (ha)	Gross cropped area (ha)	Net irrigated area as % of net cultivated area	Cropping intensity (%)
Birbhum (Zones 1 to 4)	2355.2	1070.4	3441.68	45.45	146.13
Burdwan (Zones 5 to 8)	3410.4	1006.0	5025.37	34.48	147.35
Jalpaiguri (Zones 9 to 12)	11054.0	294.8	17498.04	2.67	158.30
All districts (12 Zones)	16819.6	2371.2	25965.09	14.10	157.50

It may be seen that only 14.1 percent of net cultivated area is irrigated for the three districts taken together. It is not surprising that the intensity of cropping in Jalpaiguri is the highest (158.30 percent) even though only 2.67 percent of the net cultivated area is under irrigation because irrigation is not so important in this district as in Birbhum and Burdwan due to high rainfall(> 3000 mm) starting earlier in the month of April and extending upto September. Furthermore, the soil has a high water retentivity enabling the farmers

to grow jute and paddy in that sequence with the available rain water. The *barga* cultivated lands are by no means of inferior quality compared to the owner cultivated lands in respect of irrigation facilities (Table 8). The percentage of net cultivated area irrigated varies widely among the zones within the districts.

Table 8. Zone-wise irrigation facilities by types of cultivation.

(Area in hectares)

Zone No.	Land cultivated by					
	bargadars			other cultivators		
	Net cultivated area	Area irrigated	% of net cultivated area irrigated	Net cultivated area	Area irrigated	% of net cultivated area irrigated
Birbhum						
1.	177.69	167.02	93.99	557.91	524.98	94.08
2.	167.89	86.33	51.42	284.50	145.67	51.20
3.	240.78	39.68	16.48	474.02	76.32	16.10
4.	286.50	19.53	6.82	165.89	10.87	6.55
Burdwan						
1.	252.54	159.30	63.08	311.86	197.09	63.20
2.	437.25	87.77	20.07	303.14	60.63	20.00
3.	236.75	117.68	49.71	423.64	221.52	50.40
4.	169.99	21.39	12.61	1275.61	148.61	11.65
Jalpaiguri						
1.	276.17	10.55	3.82	2807.83	89.85	3.20
2.	620.72	11.67	1.88	2795.68	50.34	1.80
3.	611.35	5.51	0.90	1963.05	16.49	0.84
4.	379.70	21.62	5.70	1599.50	88.77	5.55

The cropping intensity in the different types of farms is given in Table 9.

Table 9. Cropping intensity by types of farms

(percentage)

District	Landless *bargadars'* *barga* land	Land-owning *bargadars'* Own land	Land-owning *bargadars'* *barga* land	Land owner with partly leased out land	Owner culti-vator	*Barga-dar* (Un-recorded	Other farms	Total
Birbhum (Zones 1 to 4)	113.77	136.08	125.60	126.23	166.77	181.50	166.94	145.70
Burdwan (Zones 5 to 8)	113.18	154.56	139.67	153.10	173.74	158.13	123.29	148.14
Jalpaiguri (Zones 9 to 12)	129.46	147.04	141.34	146.53	163.40	131.55	160.67	158.30
Total	356.41	437.68	406.51	425.86	503.81	471.18	405.90	442.14

Ranking of cropping intensity by types of farms was more or less, in the same order. It was the highest on the farms of owner cultivators in the district of Burdwan and Jalpaiguri followed by unrecorded *bargadars* in Burdwan & other farms in Jalpaiguri. In the district of Birbhum, the unrecorded *bargadars* had the highest cropping intensity (181.50 percent), closely, followed by other farms and owner cultivators. In the case of the recorded land-owning *bargadars* the copping intensity on the leased-in land was lower than that on the own land. Cropping intensity of the recorded landless *bargadars* was, however, the lowest in all the districts.

After the introduction of the *Operation Barga* the farms of the recorded *krishans* and of the recorded landless *bargadars* have been affected largely. These two categories of *bargadars* do not possess any land, capital, or bullock power of their own. The only asset of most of them is their manual labour. Though the recorded *bargadars* receive short-term crop loan at a low rate of interest they, especially the *krishans* and the landless ones, badly need consumption loan. The

unrecorded *bargadars* get consumption loan and all other types of assistance from their land owners. But these very *bargadars* are deprived of any assistance, financial or otherwise, from the land owners when they get their tenancy rights on *barga* land formally recorded. In order to meet their immediate consumption need most of the poor *bargadars* find no other alternative than to sell their manual labour to other farmers instead of working on their own farms during the *rabi* and the summer season. Provision of adequate and timely financial assistance to the recorded *bargadars* for cultivation and/or consumption will expectedly improve their efficiency and the over-all performance.

Ranking of the farms, based on the highest yield obtained for different crops in the villages where it is grown, is given in Table 10.

It may be seen that the owner-operated farms had registered the highest yield in 47.87 percent of the villages in the case of local paddy followed closely by the unrecorded *bargadars* (47.37 percent). Similarly, the highest yield of HYV paddy was recorded on the unrecorded *bargadar* farms and owner-operated farms in 57.89 percent and 51.06 percent of the villages respectively. In other crops too, the highest yields were obtained either by unrecorded *bargadars* (wheat, mustard and jute) or other cultivators (potato, *boro* paddy).

It is interesting to note that the unrecorded *bargadars* have not lost the confidence of their land owners (*jotdars*), who have the command over the labour input of these *bargadars* and normally receive a higher crop share than that received by other land owners from the recorded *bargadars*. These owners of land cultivated by the unrecorded *bargadars* also supply material inputs like fertilizers, seeds, manures ,etc. creating a favourable condition for more efficient operation of this type of farms.

Although farms under *barga* cultivation had almost the same access to irrigation facilities as other farms(Table 8) it is reported that in many cases the recorded *bargadar* farms did not receive adequate irrigation at times of need. It is worth noting that ground water source (deep tubewells and shallow tubewells) accounted for about 43 percent

Table 10. Ranking of highest yield of main crops by types of farms

Types of Farms	Percentage of villages recording highest yield obtained under various types of farms					
	Local Paddy	HYV Paddy	Wheat + Mustard	Potato	*Boro* Paddy	Jute
Cat - I	1.14 (VII)	1.14 (VI)	3.41 (VI)	3.41 (VI)	1.14 (VI)	4.54 (V)
Cat - II (O.L)	10.84 (IV)	4.82 (V)	8.43 (V)	27.71 (III)	7.23 (IV)	8.43 (IV)
Cat - II (L.L)	1.20 (VI)	—	2.41 (VII)	—	—	—
Cat - III	20.21 (III)	15.96 (III)	9.57 (IV)	7.45 (V)	6.38 (V)	9.57 (III)
Cat - IV	47.87 (I)	51.06 (II)	54.25 (II)	47.87 (I)	69.15 (I)	22.34 (II)
Cat - V	47.37 (II)	57.89 (I)	57.89 (I)	42.11 (I)	42.11 (II)	36.84 (I)
Cat - VI	10.63 (V)	15.96 (III)	11.70 (III)	8.51 (IV)	8.51 (III)	4.26 (I)

Note:(1) Cat-I : Landless *bargadars* - *Barga* land
Cat-II(LL) : Land-owing *bargadars* - *Barga* land
Cat-II(OL) : Land-owning *bargadars* - Own land
Cat-III : Land -owner (with partly leased-out land)
Cat-IV : Owner cultivator(with neither leased-in nor leased-out and)
Cat-V : Unrecorded *bargadars*
Cat-VI : Other farms

(2) The percentage figures need not add upto 100 as in several cases, the highest yield is obtained by different types of farms in the same village for a particular crop.

of the gross irrigated area in all the zones taken together. Furthermore, privately owned shallow tube-wells and pumps sets for lift irrigation accounts for more than a half of the gross irrigated area (Figure 3). Besides, most of these shallow tube wells and private pump sets are owned by other cultivators, comprising mainly of the owner cultivators and other categories of land owners (Figure 4).

Figure 3. Source-wise irrigated area

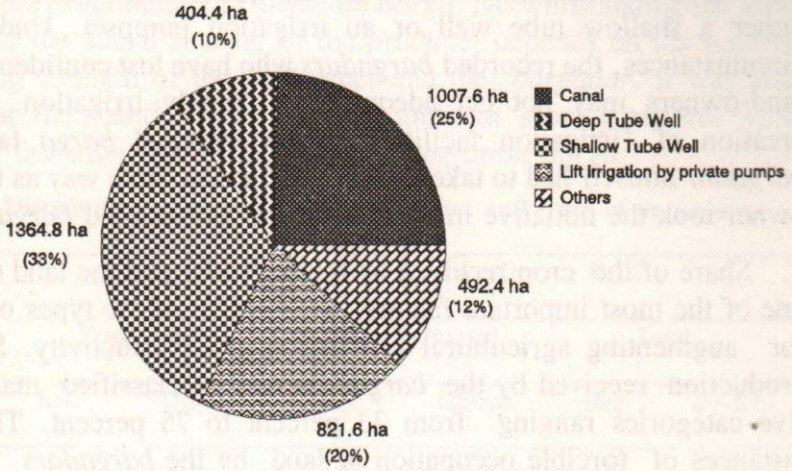
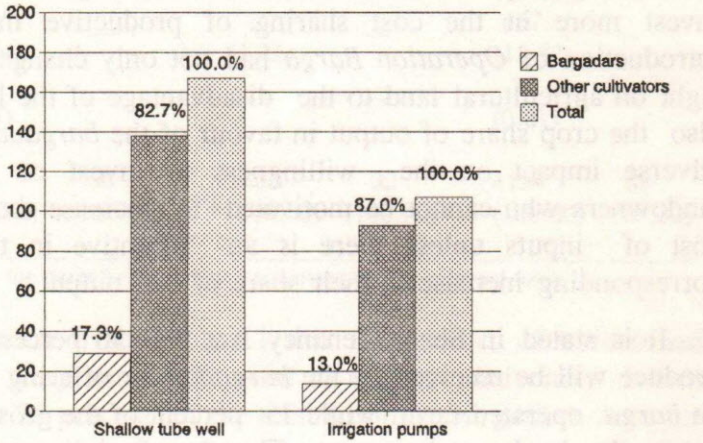


Figure 4. Distribution of shallow tube wells and irrigation pumps



Only 17 percent of the shallow tube well and 13 percent of the irrigation pumpsets were owned by the *bargadars*. Further investigation revealed that none of the landless *bargadars* owned either a shallow tube well or an irrigation pumpset. Under these circumstances, the recorded *bargadars* who have lost confidence of the land-owners may not get adequate and timely irrigation. For the creation of irrigation facilities on the recorded *barga* farms the *bargadar* himself had to take the initiative in the same way as the land-owner took the initiative in the case of the unrecorded *barga* farms.

Share of the crop received by the *bargadar* and the land owner is one of the most important factors, irrespective of the types of farms, for augmenting agricultural production and productivity. Share of production received by the *bargadars* may be classified mainly into five categories ranging from 33 percent to 75 percent. There are instances of forcible occupation of land by the *bargadars* with the entire production (100 percent) being appropriated by them as their share. It is well known that crop shares and cost shares are closely related to each other and efficiency in farming is dependent on the pooling of resources and their optimum allocation between the relatively affluent landlord and the poor *bargadar*. One way to achieve higher production would be to encourage the land owner to invest more in the cost sharing of productive inputs. But the introduction of *Operation Barga* had not only changed the property right on agricultural land to the disadvantage of the land owner but also the crop share of output in favour of the *bargadar*. This has an adverse impact on the willingness to invest on land by the landowners who cannot be motivated to increase their share in the cost of inputs unless there is an incentive in the form of a corresponding increase in their share of the output.

It is stated in Share Tenancy Act that 50 percent of the gross produce will be received by the *bargadar* for offering manual labour on *barga* operated farm, while 25 percent of the gross produce will go to the landowner as rent. The Act further provides that the remaining 25 percent of the gross produce will be distributed between the land owner and *bargadar* in proportion to their share in cost of material inputs.

It was observed that many of the *bargadars* did not offer the share of the produce to the land owner (Table 11) during the initial phase of the programme of *Operation Barga*. Notwithstanding the legal provision, the actual sharing of the produce depends on the relative bargaining strength of the landowner and the *bargadar*. It was also found that the traditional crop sharing and cost sharing patterns were changing fast after the introduction of *Operation Barga*.

Table 11. Distribution of *bargadars* by crop share and types of *bargadars*

	B A R G A D A R S					
Share (%)	Traditional		Non-traditional		Total	
	Rec	Un-rec	Rec	Un-rec	Rec	Un-rec
33	1	—	33	13	34	13
	(0.03)		(2.78)	(40.62)	(0.82)	(14.77)
40	41	6	800	19	841	25
	(1.38)	(10.7)	(67.34)	(59.38)	(20.25)	(28.41)
50	1741	44	336	—	2077	44
	(58.71)	(78.58)	(28.28)		(50.00)	(50.00)
60	507	6	4	—	511	6
	(17.09)	(10.71)	(0.34)		(12.30)	(7.00)
75	642	—	15	—	657	—
	(21.64)		(1.26)		(15.82)	
100	34	—	—	—	34	—
	(1.15)				(0.81)	
Total	2966	56	1188	32	4154	88
	(100.00)	(100.00)	(100.00)	(100.00)	(100.00)	(100.00)

Note: The figures in the parantheses denote percentages to the relevant totals

It may be seen from Table 11 that the number of unrecorded *bargadars* was very small compared to the recorded ones. It was found that about 21 percent of the total recorded *bargadars* were not getting even the legally admissible 50 percent of the produce as their share. It is to be noted that more than 70 percent of the non-traditional (recorded) *bargadars* belonged to this category. These *krishan bargadars* are entitled to get 50 percent of the gross produce as compensation for their manual labour only. The traditional

bargadars, supplying bullock labour and cowdung manure to the farm under their *barga* operation were entitled to receive, more than 50 percent of the crop share. However, in practice, more than 60 percent of them had to remain satisfied with 50 percent of the produce as their share. Thus the performance of *Operation Barga* in terms of one of its objectives to ensure the *bargadars* of their legal share of the produce was highly unsatisfactory, even after a decade of its implementation.

There is, however, a positive side of it. Specifically, at least 30 percent of the non-traditional (recorded) *bargadars*, were able to secure 50 percent of the crop share which was legally due to them. None of the unrecorded *bargadars* got even 50 percent of the produce. This implies that, *Operation Barga* could ensure justice, to atleast 30 percent of the *bargadars* which would not have been possible in the absence of such a programme.

The study reveals that the recorded *bargadars* were constantly under social and economic pressure from the land owning class. Most of the land owners did not co-operate with them. Table 12 shows that only two thirds of the total *bargadars* possessed bullock power of their own. The rest, being dependent on their land owners for supply of bullock power, could not claim more than 50 percent of the produce

Table 12. Percentage of produce received by *bargadars* as their share *vis-a-vis* the supply.

Share in produce (percentage)	No. Of *bargadars*	No. of *bargadars* supplying bullock power	Percentage of crop share *bargadars* supplying bullock power
33.00	47	0	0.00
40.00	866	0	0.00
50.00	2121	1648	77.70
60.00	517	517	100.00
75.00	657	657	100.00
100.00	34	34	100.00
Total	4242	2856	67.33

as their share. Thus the *bargadars* who received lower share of crop did not supply bullock power. It is to be noted that 77 percent of the *bargadars* who received 50 percent of the crop as their share supplied bullock power for farming operations implying that only about 23 percent of the *bargadars* received 50 percent of the crop in compensation of their manual labour only.

Another constraint for augmenting the productivity of *barga* operated farms was the dearth of material inputs. After the introduction of *Operation Barga* many of the land owners stopped

Table 13. Distribution of *bargadars* by crop share and cost share-Zone total

Share in crop produce (%)	No. of *bargadars*			% of cost shared by *bargadars* (excluding manual labour)						
	Rec	Un-rec.	Total	0	33	40	50	60	75	100
33	34 (0.82)	13 (14.77)	47 (1.11)	47 (100.0)	-	-	-	-	-	-
40	811 (19.52)	25 (28.41)	836 (19.71)	836 (100.0)	-	-	-	-	-	-
50	2077 (50.00)	44 (50.00)	2121 (50.00)	1442 (67.99)	-	-	679 (32.01)	-	-	-
60	511 (12.30)	6 (6.82)	517 (12.19)	197 (38.10)	-	-	253 (48.94)	67 (12.96)	-	-
75	687 (16.54)	-	687 (16.19)	-	-	-	-	-	-	687 (100)
100	34 (0.82)	-	34 (0.80)	-	-	-	-	-	-	34 (100)
Total	4154 (100.0)	88 (100.0)	4242 (100.0)	2522 (59.45)			932 (21.97)	67 (1.58)	-	721 (17.0)

Note: (1) Rec=Recorded,
Un-rec=Unrecorded
(2)The figures in the paranthese denote percentage to the relevant totals.

supplying material inputs to their *bargadars*. Table 13 shows the association of crop shares with cost shares.

Bargadars receiving 75 percent of the produce and above as their share were found to bear the entire cost of production while 38 percent of those receiving 60 percent did not pay any cost of the material inputs employed on their *barga* -operated farms. About 68 percent of *bargadars* receiving 50 percent of the crop as their share did not bear any cost of production except manual labour. However, 32 percent of the *bargadars* bearing 50 percent of the cost got only 50 percent of the output as their share. Thus, only about 60 percent of the *bargadars* received their due share as envisaged in the Share Tenancy Act, even a decade after the *Operation Barga* was introduced.

It may be seen that only a half of the total *bargadars* actually required input loans while the majority (83.09 percent) were in need of consumption loan (Table 14). It is interesting to note that not only all the *bargadars* who actually required input loan received it, but a large number of *bargadars* who did not require it also received the subsidized loan.

Table 14. Credit requirement

Total number of *bargadars*	4242	
Bargadars requiring:-		
(1) input loan	2096	(49.41%)
(2) consumption loan	3525	(83.09%)
Source of Finance		
(1) Land owner		
(a) input loan	513	(24.47%)
(b) consumption loan	681	(19.32%)
(2) Institutional loan	2979	(142.12%)
(3) Other sources		
(a) input loan	7	(0.33%)
(b) consumption loan	202	(5.73%)

Note: Figure in the parentheses denote the percentage to the relevant totals

The explanation for such an anomaly could not be readily provided by anyone during the investigation. It is not understood why *bargadars* who were not in need of the input loans applied for it in the first place. One of the plausible reasons is that the *bargadars* got the loan, even though they did not need it, probably for the purpose of relenting at a higher interest rate. Secondly, the *bargadars* might have applied for input loan to use it for other unproductive purposes including consumption. This, however, calls for further investigations.

The table also reveals that about 83.00 percent of the total *bargadars* required consumption loan. However, only one-fourth of these needy *bargadars* received consumption loan from either their land-owners or other sources. Inadequacy of consumption loan from the private sources and its total absence in the institutional sources posed serious constraints to increasing agricultural production.

5

FARMING PERFORMANCE - *BARGADARS* Vs LAND-OWNERS

The input use pattern and productivity on *barga* operated land was compared with those on other categories of farms with a view to examine the impact of the provision of tenurial security under the *Operation Barga* on these lands.

Table 15 reveals that the average cultivated area of the different categories of farms did not vary much. In general,the average farm

Table 15. Average cultivated area of different categories of farms.

(hectares)

Categories of farms	Districts			
	Birbhum	Burdwan	Jalpaiguri	Over-all
Cat - I	1.35	1.33	1.00	1.23
Cat - II	1.48	1.45	1.42	1.45
Cat - III	1.27	0.94	2.02	1.58
Cat - IV	1.48	1.33	1.54	1.54

size of either of the categories of *bargadars* was slightly smaller than that of the other two categories of the land-owning cultivators. However, the average size of farms of both the categories of *bargadars* was larger than that of the land owners who had leased-out a part of this land in both Birbhum and Burdwan districts. This slight difference in farm size per se is not expected to have any significant impact on input use, cropping pattern, production, productivity and employment on different categories of farms.

Out of the 835 *bargadars*, 56 percent did not own any land (Table 16). The rest of the *bargadars* owned, on an average, 0.40 ha land per household. The average leased-in land per *barga* household was 1.05 ha for the land-owning *bargadars*, while that of the landless *bargadars* was 1.23 ha. Thus, on an average, a landless *bargadar*

Table 16. Average land per *barga* household

(hectares)

Category	No	%	Average land per *barga* household		
			owned	leased-in	operational
Landless *bargadars*	467	55.93	--	1.23	1.23
Land-owning *bargadars*	368	44.07	0.40	1.05	1.45
Total	835	100.00	0.18	1.15	1.33

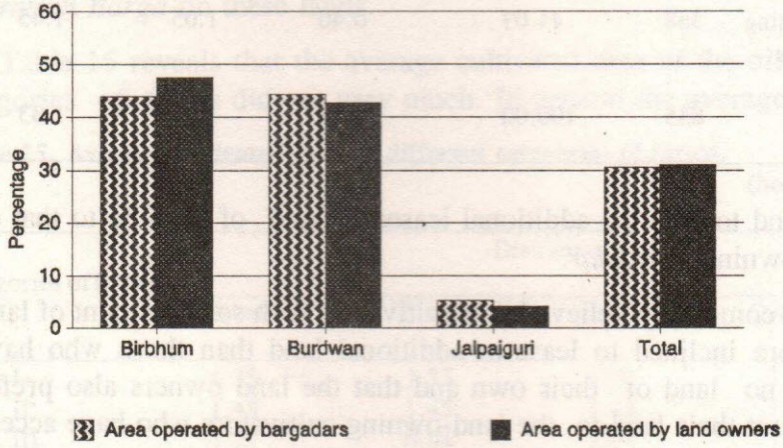
was found to have an additional leased-in land of 0.18 ha to that of a land-owning *bargadar*.

It is commonly believed that cultivators with some amount of land are more inclined to lease-in additional land than those who have little or no land of their own and that the land owners also prefer leasing out their land to the land-owning cultivators who have access to other input resources. But contrary to this belief it was found that the land owners preferred the landless cultivators who had no material inputs of their own to the land owning *bargadars* in leasing out their lands. The apparent contradiction could be explained by the desire of the land owners for control over all inputs including labour to maximise their returns. Being aware of the importance of the act of decision making and the command over inputs in production process, the land owners naturally preferred the landless *bargadars* who had least bargaining power and were dependent on them for supply of material inputs as well as for their consumption requirement. Land owners took the advantage of the poor economic conditions of these *bargadars* and freely imposed their decisions on them in regard to

choice of crops and the technology including the level and type of inputs. Furthermore, there was a tendency on the part of the land owners to decide on a level of technology which used more labour input in substitution of material inputs in the production process to maximise their profit.

Irrigation is a crucial input for augmenting agricultural production. In all the three districts included in the study there were hardly any variation in the percentage of net cultivated area irrigated on the farms of the *bargadars* and land-owning cultivators (Figure 5).

Figure 5. Net cultivated area irrigated.



The earlier analysis on irrigation based on village level data (Table 7) also arrived at this conclusion. Thus it follows that differences in agricultural production and productivity among the different categories of farmers in terms of the variation in their farm size and irrigation facilities have to be almost zero.

Marginal and small farmers belonging to the *bargadar* categories and constituting 86 percent of the total *bargadars* were found to

cultivate 72.09 percent of the total cultivated area, while the marginal and small farmers of other land owning categories constituted 76.71 percent of the total farmers and cultivated only 52.40 percent of the net cultivated area (Table 17).

Table 17. Distribution of cultivated area by farm size.

Categories of farmers	Farm size (ha) Marginal 0.01 to 1.00	Small 1.01 to 2.00	Others >2.00	Total
Bargadars				
(n)	302	416	117	835
(%)	36.17	49.82	14.01	100
% of area	18.20	53.89	27.91	100
Land owners				
(n)	111	136	75	322
(%)	34.47	42.24	23.19	100
% of area	11.92	40.48	47.60	100

The modern technology, being relatively more capital intensive, created a higher demand for capital for both investment in irrigation and other durable farm machinery and purchase of productive inputs like seeds, fertilisers, etc. Most of the marginal and small farmers of both categories ie., the *bargadars* and the land-owning cultivators had to depend, for input loan, primarily on the traditional village money lenders, land owners or financial institutions. Moreover, for consumption loan, 86 percent of the small and marginal farmers had also to depend either on their land owners or on the village *mahajans*. Prior to the implementation of the *Operation Barga* the landowners were mainly responsible for providing loans to their poor *bargadars*,but as already mentioned,the land owners did neither provide consumption loan nor their draught animals to the *bargadars* after the implementation of *Operation Barga*.

Considering the gravity of the situation the Government of West Bengal made a provision for subsidised input loan to the recorded *bargadars*. But the provision for term-loan was not satisfactory. Only a small percentage of *bargadars* were provided with term-loan to

purchase draught animals. *Operation Barga* enabled an additional 20 percent of the *bargadars* to procure their own draught animals (Table 18). No provision could, however, be made by the government for consumption loan to these *bargadars*.

Table 18. Distribution of draught animals of *bargadars* under study before and after *Operation Barga*.

Sample districts	No of *barga* households	No. of households having draught animals	
		before *operation barga*	after *operation barga*
n	835	372	545
%	100.00	44.55	65.27

The extent of cultivated area under different crops by the various categories of farmers and their cropping intensity is given in Table 19.

It is important to note that cropping intensity was higher in respect of their own land than the same in case of the leased-in-land. It was observed that even the *bargadars* with poor resource base performed better on their own land in terms of cropping pattern. This also holds for the land-owning *bargadars* on their own land. In sum, the cropping intensity on their own land was found to be higher in all categories of farms than that on the *barga* land of same group of farms. The cropping intensity on the *barga* land of the land owning *bargadars* was almost equal to that observed on the *barga* land cultivated by landless *bargadars*. During *rabi* and summer, land-owning *bargadars* cultivate a greater percentage of their own land than other categories of farmers presumably to utilise their family labour fully and to generate a higher return on their farm.

Considering the adoption of HYV paddy as an index of progressive farming, it was observed that the performance of owner-cultivators was the best. For this category of farmers percentage of the total paddy area under HYV paddy during *kharif* was much higher (9.58 percent) than those on other categories of farms (1.40 percent to 5.10

Table 19. Cropping pattern and cropping intensity by categories of farmers

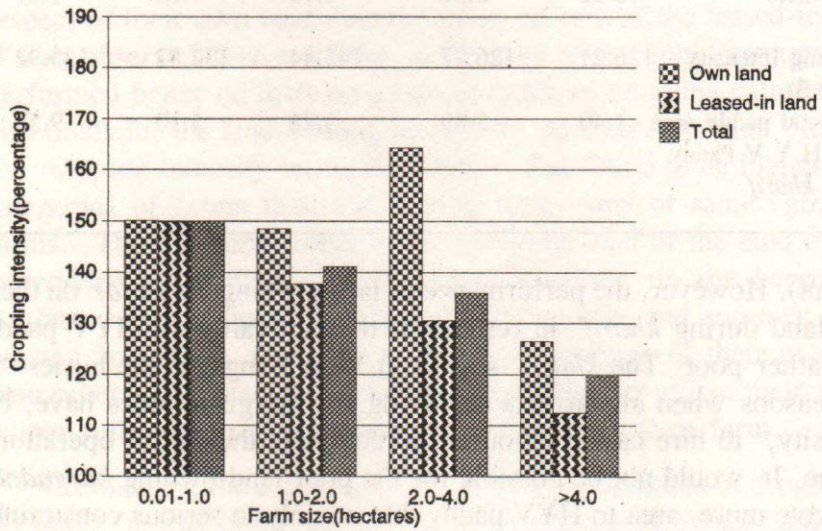
Items/categories of farms	(Percentage of net cultivated area)				
	Cat - I	Cat - II (LL)	Cat - II (OL)	Cat - III	Cat - IV
1) *Kharif*	96.11	97.81	92.62	86.30	92.96
a) Local. Paddy	94.51	94.28	89.28	81.74	83.02
b) H.Y.V. Paddy	1.34	3.41	3.03	4.39	8.80
c) Others	0.26	0.12	0.3	10.17	1.14
2) *Rabi*	11.71	9.65	24.15	19.53	21.36
a) Wheat+Mustard	7.46	5.0	10.20	9.90	8.59
b) Potato	2.44	2.98	8.24	5.51	8.70
c) Others	1.81	1.59	5.71	4.12	4.07
3) Summer	18.39	19.31	26.67	26.99	19.60
a) *Boro* Paddy	11.14	11.38	12.32	13.48	11.26
b) Jute	7.03	7.62	7.61	9.46	6.47
c) Others	0.22	0.31	6.74	4.05	1.87
Cropping Intensity (1+2+3)	126.21	126.77	143.44	132.82	133.92
% of total paddy area under H.Y.V Paddy during *kharif*	1.40	3.49	3.28	5.10	9.58

percent). However, the performance of land-owning *bargadar* on their own land during *kharif* in respect of the cultivation of HYV paddy was rather poor. The *kharif* season in West Bengal is the busiest of all seasons when all farmers including the marginal ones have, by necessity, to hire casual labourers to complete their farm operations in time. It would not be possible for the poor land-owning *bargadars* to devote more area to HYV paddy due mainly to serious constraints on material inputs,human labour and also on working capital. It is, therefore, necessary to ensure timely supply of these inputs and working capital to the resource-poor *bargadars*, both landless and

land-owning, so that modern varieties of paddy and the new technology could be adopted by them to increase their income and employment.

During the summer season the land-owners who leased out a part of their land cultivated *boro* paddy and jute on a relatively larger portion of their farms than their counterparts in other categories of farms. As agricultural labour was available in plenty during the summer season, these farmers with adequate material resources and an easy access to and a command over irrigation, the key input for any agricultural production in this season, could devote a larger area of their land to *boro* paddy and jute. Lands of many poor farmers located within the command area of the private irrigation sources, generally owned and operated by relatively well-to-do owner-cultivators, were deprived of the irrigation facilities mainly because these poor farmers did not have enough money to purchase water at an exorbitant rate. However, the overall performance on

Figure 6. Cropping intensity in *barga* land and own land by farm size.



owner-cultivator farms as judged by the cropping pattern and the cropping intensity was found to be comparatively better than that on any other type of farms. It was revealed from the cropping pattern that the owner-cultivators were more interested in both labour-using and capital-intensive high-value crops. It was further observed that the cropping intensity and the farm size were inversely related (Figure 6). i.e., the smaller the farm size, the higher was the cropping intensity.

It may also be noted that the cropping intensity on own land for all the farm sizes is always higher than that on the *barga* land.

Average cost of material inputs on different categories of farms is given in Table 20.

Table 20. Average cost of material inputs (seed + manure + fertiliser) by categories of farms

(Rs/ha)

Crops	Cat - I	Cat - II (LL)	Cat - II (OL)	Cat - III	Cat - IV
Local Paddy	305	267	329	360	506
HYV Paddy	587	718	1011	943	949
Wheat+Mustard	755	740	1231	1151	1101
Potato	3803	3573	6672	5392	6529
Boro Paddy	899	546	1207	828	1169
Jute	513	422	775	692	1261

A comparison of input use pattern among the different categories of farms shows that the use of material inputs on the *barga* land was always less than that on the own land. It was also observed that the land-owning *bargadars* used smaller amount of material inputs on their *barga* land as compared to other categories of farmers. Table 26 reveals an interesting fact that inspite of resource constraints, material inputs cost per hectare was the highest on land-owning *bargadars* own land except in the case of jute and local paddy while it was the lowest on his *barga* land. It was observed that this category of land-owning *bargadars* receive subsidized *barga* loan. But, instead of investing

the full amount of the loan on the *barga* land they were found to divert a substantial part of the loan for investment on their own land.

It was found that for all the major crops except potato the irrigation cost was the highest in the owner-cultivators' farm(Table 21). Furthermore, the cost was higher on the *barga* land than on the own land of the land-owning *bargadars* in all the crops with wheat + mustard as an exception.

Table 21. Average cost of irrigation input by categories of farms

(Rs./ha)

Crops	Cat - I	Cat - II (LL)	Cat - II (OL)	Cat - III	Cat - IV
Local Paddy	7.97	7.45	6.60	14.72	27.47
HYV Paddy	22.52	47.67	46.7	37.02	62.87
Wheat+Mustard	85.10	82.35	110.75	99.25	155.25
Potato	240.80	331.20	251.00	167.25	296.27
Boro Paddy	338.85	403.17	324.10	246.67	438.50
Jute	—	—	23.27	0.30	9.10

The higher irrigation cost on *barga* land (except wheat+mustard) was probably due to increased availability of irrigation facility on these lands as compared to the same on the *bargadars'* own land. This again confirms the earlier findings based on village level data (Table 7) that the quality of land leased-out for cultivation to the *bargadars* was not necessarily of inferior quality in terms of irrigation availability. Despite the better irrigation facility and the facility of subsidized *barga* loan, application of material inputs on the *barga* land was lower than that on the own land of the *bargadars*. This fact may be attributed to the lack of sufficient incentives inherent in the *barga* system.

According to the Tenancy Reform Act, the *bargadar* is responsible for the supply of the entire human labour input on the *barga* land while the other material inputs including seeds, manures, fertilisers and also bullock labour and irrigation charges, etc are to be supplied either by the *bargadar* or by the land owner, or by both. Generally,

Table 22. Labour input by categories of farms

(Labour days/ha).

Crops	Cat - I	Cat - II (LL)	Cat - II (OL)	Cat - III	Cat - IV
Local Paddy	112	108	114	105	112
HYV Paddy	139	129	141	137	144
Wheat+Mustard	100	104	108	99	105
Potato	214	192	216	212	209
*Boro*Paddy	128	130	136	122	136
Jute	163	159	190	167	175

the landowners do not object to the use of more labour input on the *barga* lands by the *bargadars* because of economic substitution between labour and other material inputs. But Table 22 reveals that the *bargadars* with own land consistently used more labour on their own land than on the *barga* land for all the crops without exception. This clearly demonstrates that the landed *bargadars* were more interested in substituting labour, especially, the family labour, for material inputs on their own land from which the increased productivity was not required to be shared with the landlords. It may be noted here that family labour constituted the major part of the total labour used for cultivation of all crops on the farms of both types of *bargadars*.

Cost per hectare for six major crops was calculated by adding the costs of material inputs, irrigation, bullock labour, hired and family human labour. Family human labour cost was imputed at the market wage rate for hired human labour. In all the six crops, the tenant farmers i.e., landed as well as landless *bargadars* were generally found to apply lower quantities of inputs than the other land-owning farmers with the result that the cost of cultivation of the concerned crop was usually lower on the *barga* lands than on the own lands (Table 23).

Most of the recorded *bargadars* of the state got subsidised input loan but a large part of the loan was not utilised for cultivation on

Table 23. Cost of variable inputs including family labour

(Rs./ha)

Crops	Cat - I	Cat - II (LL)	Cat - II (OL)	Cat - III	Cat - IV
Local Paddy	2186	2067	2268	2108	2428
HYV Paddy	2899	2856	3279	3175	3336
Wheat+Mustard	2569	2618	3160	2886	3068
Potato	7743	7591	10624	9118	10435
*Boro*Paddy	3445	3294	3783	3105	3895
Jute	3104	2655	3905	3318	3526

barga land. The *bargadars* did not apply adequate quantities of the inputs on the *barga* land implying the existence of some serious weakness inherent in the Share Tenancy System , which the *Operation Barga* failed to remove.

Yield per hectare was calculated both in physical and monetary terms. The market harvest price of the concerned crop was considered for computation of monetary yield. (Table 24).

Table 24. Per hectare yield of crops by categories of farms

(Rs. and Quintals)

Crops		Cat - I	Cat - II (LL)	Cat - II (OL)	Cat - III	Cat - IV
Local Paddy		19.70	18.50	26.75	22.75	28.63
		3877	3524	5237	4452	5689
HYV Paddy		28.32	27.80	30.25	29.47	35.40
		4839	4576	4859	4643	5668
Boro Paddy		33.47	27.67	30.67	24.70	36.72
		5693	4209	4990	4252	6123
Wheat+ Mustard	Rs.	2928	3382	2434	3789	4157
Potato	Rs.	9409	8314	13688	14766	14547
Jute	Rs.	2677	3076	3049	4246	3553

Note: Yield of paddy (qtl.) is shown in the first row and in value term (Rs.) in the second row. Yield of other crops is in monetary terms only. The value of by-product of paddy has been added to the value of yield of the grain in the second row.

Gross return i.e. the value of grain yield and the by-product of paddy irrespective of the variety and season, was the highest in the case of owner-cultivators . The land-owning *bargadars* on their own land also did well during *kharif* season when irrigation was not so much a constraint to higher productivity especially in the assured rainfall areas of West Bengal. In the case of HYV paddy the land-owning *bargadars* got the second best yield on their own land. In *boro* paddy the landless *bargadars* received the second best yield even though the use of material inputs as well as irrigation was the third as may be seen from Tables 20 and 21. This analysis shows that application of more inputs alone could not ensure the highest yield. The timeliness of input use and close supervision in farming must have ensured better yields here as the landless *bargadars* had no other alternatives to dilute their attention as compared to other types of cultivators.

Inspite of the higher level of application of all inputs except irrigation, the land-owning *bargadars* could not get higher yield from his own land than that received by the owner-cultivators. This may be attributed to the entrepreneurial inputs, specifically the superior decision making ability of the land-owning cultivators which was lacking in *bargadars* either because of their relatively low level of technical know-how and the inferior managerial ability or both. Better access of the land-owning farmers, than both the categories of *bargadars*, to both the input or output markets might be the other reasons to explain this phenomenon.

The return per hectare of jute and potato were found to be the highest in the case of land-owners with partly leased-out land and with enough resources at their command. These two crops are both capital and labour-intensive at the same time. But it is interesting to note that higher yield was obtained without application of higher doses of inputs. This may probably be due to their easy access to the controlled irrigation and capital and labour markets. Furthermore, these crops are very sensitive to not only the quantity of inputs but also to the time and method of their application. Timely application of all inputs and close personal supervision may be the secret behind this success. Analysis of labour productivity also supports the earlier

findings in regard to the performance of the different categories of farms as given in Table 25.

Table 25. Cropwise average productivity of human labour day.

(Rs./labour day)

Crops	Cat - I	Cat - II (LL)	Cat - II (OL)	Cat - III	Cat - IV
Local Paddy	27.83	26.19	38.74	35.04	41.84
HYV Paddy	26.88	26.06	23.93	23.49	28.97
Boro Paddy	30.34	19.78	21.63	22.15	29.12
Wheat+Mustard	16.38	20.13	6.08	21.92	23.16
Potato	20.56	16.55	26.96	39.33	32.53
Jute	10.16	13.44	8.84	18.33	10.10

Note: Productivity per labour day has been computed by first deducting the cost of all inputs (except human labour) from the gross return and then dividing by the number of labour days per hectare.

In case of local paddy, the most important crop covering a wide area ranging from 82 percent to 95 percent of the net cultivated area of different categories of farmers, labour productivity was the highest on the farm of owner cultivator. The land-owning *bargadars* ranked second in this respect on their own land. It was found to be the highest on the landless *bargadars* farms in the case of *boro* paddy, on the owner cultivator farms in the case of wheat and mustard, and on land owners (with partly leased-out land) farms in the case of potato and jute.

The Annual Net Return (ANR) per unit of land is one of the important criterion for efficiency of different categories of farms. In order to obtain ANR for each category of farms, the Total Net Return (TNR) received by a given farm category, from all the crops cultivated during a year was divided by the net cultivated area of the concerned farm category. Net return from each crop was calculated by deducting all input costs including the imputed cost of the family labour from the gross return.

The ANR after deducting all costs[Column 2 of Table 26 in Cat. IV farm was found to be about 25 percent higher than that obtained on farms in Cat. II(O.L). However, the ANR earned by the landless

Table 26. Annual net return (ANR) on various categories of farms

(Rs / ha)

Categories of farms	Annual Net Return		Imputed cost family labour [Col.3-Col.2]
	[Gross return minus All input costs including family labour]	[Gross return minus All input costs excluding family labour]	
(1)	(2)	(3)	(4)
Cat. I	2054	3507	1453
Cat. II(L.L)	1849	3065	1215
Cat. II(O.L)	3248	4928	1680
Cat. III	3167	3503	336
Cat. IV	4011	4993	981

bargadars [Cat.I] and the land owning *bargadars* Cat. II (L.L) on their *barga* land was rather depressingly low. It is interesting to note that the same *bargadars* obtained 75 percent higher ANR on their own land [Cat II(OL)] than on their *barga* land [Cat II (LL)]. Still the sharing contract system survives, that too after paying high rent to the owners, which in most cases are more than one-fourth of the gross produce. The reason could be found from column 3 of Table 26 wherein ANR excluding the cost of family labour is given.

The ANR on the *barga* land of the *bargadars* farms was not so low if the cost of family labour was not deducted from the gross return (Col.3 of Table 26). The employment of family labour on the *barga* farms of Cat. I and Cat. II [both (L.L) and (O.L)] was much higher than that on the non-*barga* categories of farms, i.e., Categories III & IV. This may be an important factor regarding the survival of the share tenancy system in a backward agriculture where alternative employmnent opportunities are almost non-existent. Most of the family members of *barga*dars are agricultural workers. Having no other alternative opportunity these workers prefer employment on their own farms. Higher level of self employment of family labour on these farms do not involve any extra cost, though it cannot fully compensate the differences in the ANR between the *barga* and the owners.

Return-Cost ratios have been worked out for different crops and for various categories of farms (Table 27).

Table 27. Cropwise return-cost ratios by categories of farms.

Main Crops	Categories of farms				
	Cat - I	Cat - II (LL)	Cat - II (OL)	Cat - III	Cat - IV
Local. Paddy	1.82	1.70	2.31	2.11	2.34
HYV Paddy	1.68	1.60	1.48	1.46	1.70
Wheat+Mustard	1.14	1.29	0.77	1.31	1.36
Potato	1.22	1.10	1.29	1.56	1.39
Boro Paddy	1.65	1.28	1.32	1.37	1.57
Jute	0.86	1.16	0.78	1.28	1.01

Note: Cost includes compensation for all material inputs, irrigation, bullock power and human labour.

Irrespective of the categories of farms, the return/cost ratios were the highest in local paddy. This high return to expenditure in the variable inputs was one of important reasons for the predominance of local paddy in the *kharif* season in West Bengal. *Bargadars* who pay more that 25 percent of the produce as rent for the *barga* land were not normally interested in spending more money on material inputs in high-value crops in which the net return per rupee spent on inputs was lower even though the per hectare net returns were higher. The reason for a higher return on expenditure in inputs in local paddy, like the labour productivity, lay in the fact that, of all the crops included in this study, the level of expenditure (as well as labour) was the lowest. Thus the choice was really between higher return on expenditure and higher return per hectare. Lack of capital, both working and durable capital, on the farms of all categories the majority(91 percent) of which were below 2.0 ha acted as a serious constraint to grow crops with higher returns per hectare which required more inputs including hired human labour.

The foregoing analysis in respect of cropping pattern, cropping intensity, input use pattern, land and labour productivity, net return per hectare and return/cost ratios reveals that the land-owning

cultivators got a higher yield and higher return than those obatined by the *bargadars* on their *barga* land. This may be due mainly to better quality of entrepreneurial inputs of the land-owning cultivators than on the *barga* lands of the *bargadars*. Even the performance of the land-owning *bargadars* was better on their own land as compared to their *barga* land.

Operation barga appeared to have offered tenurial security and occupancy rights to the *bargadars* on the land they used to cultivate on lease. Furthermore, the *bargadars* were free to substitute cheaper or farm-grown factors of production including family labour for relatively costly and purchased inputs on their *barga* land. They also got subsidised input loan for the cultivation of their *barga* land. But lack of incentives and opportunities for developing entrepreneurial and managerial inputs on the *barga* operated land remained an inherent weakness in the *barga* system of cultivation which the *Operation Barga* could not remove.

With a view to examining the resource use efficiency, Marginal Value Products (MVP) of the inputs were derived with the help of estimated production function and compared with the price of the respective inputs. Under the standard assumptions about the market and the unrestricted supply of the concerned input the necessary condition for efficient use of the input defined in terms of profit maximisation requires that the input be employed upto the level where its MVP equals its marginal cost of procurement or the price. A ratio of MVP to input price greater than unity indicates that the input is under-employed and it could be enhanced, if available,to increase profit while a ratio less than unity indicates that the particular input is over-employed pointing to the need for a reduction in its level of employment and thereby increase the profitability. The ratio of MVP and the price of the inputs are given in Table 28.

It may be obseved that the level of employment of input X1 (expenditure on seed,manure and chemical fertiliser), as revealed from Table 28, was suboptimal due partly to the scarcity of working capital / credit, a part of which was used for consumption purpose and partly to the inherent weakness in the sharing contract system.

It is very difficult to say, which of the above two constraints played a critical role for the under-employment of the input.

Table 28. Ratios of MVP and price of the input

Categories of farms	X1 and X2 inputs for local paddy				X1, X2 and X3 inputs for potato		
	Advanced Zones		Backward Zones		Advanced Zones		
	R	A	T	I	O	S	
	X1	X2	X1	X2	X1	X2	X3
I							
Barga land [Cat I + II LL]	1.36	1.32	1.36	1.58	1.27	0.81	1.28
Own land [Cat II(OL)+III+IV]	1.20	0.53	1.19	0.90	0.97	0.57	0.57
II							
Bargadars' barga land [Cat-II (LL)	1.41	1.43	1.45	1.90	1.33	0.92	1.33
Bargadars' own land [Cat-II (OL)]	1.25	0.29	1.28	0.88	1.08	0.51	1.04

Note:-(1) For Local Paddy
Y = Value of output (Rs/acre)
X1 = Value of seed + manure + chemical fertiliser (Rs./acre)
X2 = Human labour days per acre
(2) For Potato
Y = Value of output (Rs/acre)
X1 = Value of seed + manure + chemical fertiliser (Rs./acre)
X2 = Human labour days per acre
X3 = Irrigation cost (Rs./acre)

If one looks into the ratio of X2 (human labour) for local paddy i.e.,labour days, one will find that the inherent weakness in the sharing contract system is the dominant constraint for under employment of any of the input resources. As observed earlier, the proportion of family labour employed in the farms of *bargadars* (leased-in / owned) was higher as compared to the other categories of farms (Table 26). The opportunity cost of these family labour days is

well below the market wage rate. They could have overcome the dearth of capital by employing more labour on their *barga* land. A higher MVP on the *barga* land than on the own land suggests that human labour should be withdrawn from own land and employed in the *barga* land in order to increase the overall prfitability of the farm as a whole. Thus, under-employment and over-employment of labour on the *barga*-operated and own land co-existed resulting in inefficient use of this critical resource.

The same conclusion holds true for potato also. In general, resources were applied more on own land than on the *barga* land by the *bargadars* resulting in an overall sub-optimality of resource use. On the *barga* land the MVP and FC ratio of X1 (i.e., seed, manure and fertiliser) and X3 (i.e.,irrigation charge) inputs are 1.27 and 1.28 respectively. In the case of own land these are 0.97 and 0.99 respectively. A comparison of the ratio between *bargadars' barga* land and own land also reveals a similar trend. In the *barga* land, the ratio of X1 and X3 is 1.33. In the case of own land, these are 1.08 and 1.04 respectively. It clearly shows that these resources were not utilised efficiently. Under-employment was pronounced more in the *barga* land than on the own land. But the input X2 (labour days) was over-employed in all the categories of farms (ratio less than unity). It was less efficiently used on own land than on the *barga* land. During *rabi* season, use of family labour on own farm reached the highest level in absence of lack of employment opportunities elsewhere. Resources could be used more efficiently, if these resources are diverted from own land to *barga* land and from potato to local paddy so that the MVPs are equal among inputs, crops and categories of farms.

Farmers normally do not require consumption loan during the period of potato sowing as that coincide with the harvest time of *kharif* . Furthermore, there are also provisions for extending *barga* loan and other types of crop loan facilities to the farmers during *rabi*. Inspite of these facts, material inputs and irrigation were found to be under-employed in potato, an important commercial crop, on the *barga* operated land. This again confirms the inherent weakness of the

sharing contract system behind the under employment of these inputs on the *barga* operated land.

The costs of material inputs and irrigation were very high in potato cultivation and in most of the cases, these costs could not be covered by 25 percent of the gross produce stipulated in the Share Tenancy Act as the share for the costs of these resources. In the case of important capital intensive crops, crop sharing and cost sharing structure needs to be reviewed in accordance with the total cost structure (i.e., material input costs , labour costs and other costs of production) of the concerned crop.

Lack of access to some of the resources like under-ground water (shallow tube wells), improved seeds, etc. besides working capital were found to be important factors responsible for under employment of material inputs and irrigation in potato by the *bargadars* both on their *barga* land as well as own land. Most of the reliable sources of irrigation such as shallow tubewells, etc. were not owned by the *bargadars* who had to bear a higher cost for providing irrigation on their land as they had to pay the price for irrigation water to the land owners who owned and controlled these sources of irrigation especially during the dry *rabi* season. Similarly, the land owners generally used their home grown seeds of potato which accounted for a sizeable proportion of the total cost whereas the *bargadars* were not in a position to store a part of their produce for use as seed in the next year and had to purchase it at a much higher price.

In the case of potato, input X2 was used more efficiently on the *barga* land, but this had failed to compensate for the under-employment of material inputs and irrigation. The relatively poor performance of the *bargadars* may be due either to their poor resource base or lack of their access to input markets including credit and technical know how. Besides, most of these *bargadars*, with or without land of their own, did not have adequate experience in the farm decision making involving a very complicated process, especially under uncertainity. But it is also true as is evident from the analysis that the use of inputs continued to remain critically low in *barga* land because of inherent conflict of interest in the crop sharing mechanism.

6

TENANCY PATTERN AND FARM EFFICIENCY

There is no doubt that Operation *Barga* measures improved the status of the *bargadars* by confirming tenurial security to the tillers, supplying subsidized input loan and offering legal rights to receive a fair share of the produce. However, the performance of the *bargadars* on their *barga* land did not compare favourably with that achieved by other categories of cultivators on their own land. It is intriguing that, inspite of its alleged inefficiency and other problems, the sharecropping in agriculture is widely practised in different parts of the world. In our politico-economic system ownership of land can neither be easily transferred to the actual tillers, nor can the share tenancy system be totally abolished. Furthermore, where share-cropping system of cultivation happens to be an important component of an optimal mix of contracts from the view point of both the tenants and the landlord, it is imperative to make a sustained effort to improve upon this system so that production, productivity and the earnings of both the parties may be increased.

The predominant types of tenancy pattern before *Operation Barga* are given in Table 29.

The Tenancy Act of 1972 are no doubt radical in as much as the crop sharing arrangements are made favourable to the *bargadars* . According to this legislation, 25 percent of the gross produce is to be given to the land owner as rent. The *bargadars* who are supposed to bear the human labour cost are entitled to get 50 percent of the output in exchange. The remaining 25 percent of the total output which is set aside for covering the non-land and the non-labour costs is supposed to be distributed according to each party's relative share in the total material input costs.

Table 29. Predominant tenancy patterns before *Operation Barga* in West Bengal.

Sl. No.	Name of the tenancy sub-system	Share of crop received by the *bargadar*	Share of cost (other than human labour) paid by the *bargadar*	Remarks
1	*Krishani*	33.33	Nil	One third of the gross produce except by-product
2	*Pancha-ardha*	40.00	a) Bullock power 100% b) Other inputs Nil	2/5 of gross produce
3	*Adhi*	50.00	a) Bullock power 100% b) manure 100% (no other-inputs)	Most prevalent type
4	*Ulta Pancha-ardha*	60.00	a) Bullock power100% b) manure 100% c) Other inputs 50%	3/5th of the gross produce
5	*Tebhaga*	66.67	All inputs 100%	This was intr-oduced in the area where the tebhaga movement was strong

Note: In all the cases the *bargadar* is responsible for the supply of entire human labour on the *barga* land

Prior to the *Operation Barga*, the provisions of the Share Tenancy Act were only on paper and of no use to the *bargadars*, but the introduction of *Operation Barga* has enforced strict implementation of these provisions giving rise to the expectations that (a) *Operation Barga* would replace the then existing different categories of share-croppers, (b) crop-sharing arrangements would go in favour of the *bargadars*, (c) a majority of the *bargadars* would

receive their crop share to which they are entitled in the Share Tenancy Act, and (d) the performance in regard to production and productivity of these *bargadars* would improve.

During the post-*Operation Barga* period, the new tenancy patterns emerged to suit the requirements of the socio-economic and political power structure of the rural society. The principal types of tenancy pattern prevailing after the *Operation Barga* is given in Table 30.

Table 30. Major tenancy patterns prevailing after *Operation Barga*

Sub-categories of bargadars	Share of crop received by *bargadars* (%)	Share of cost paid by *bargadars*			No of households	Net cultivated area (ha)
		Manual labour (%)	Bullock power (%)	Material inputs (%)		
I	33.33	100.00	—	—	52 (6.24)	73.28 (7.47)
II	40.00	100.00	—	—	106 (12.73)	171.62 (17.49)
III	50.00	100.00	—	—	88 (10.56)	95.54 (9.73)
IV	50.00	100.00	100.00	—	319 (38.30)	334.16 (34.04)
V	50.00	100.00	100.00	50.00	168 (20.17)	177.42 (18.08)
VI	60.00	100.00	100.00	50.00	26 (3.12)	31.08 (3.17)
VII	75.00	100.00	100.00	100.00	57 (6.84)	63.00 (6.42)
VIII	100.00	100.00	100.00	100.00	17 (2.04)	35.35 (3.60)
Total					833 (100.00)	981.45 (100.00)

Note: (1) Cost of material input includes irrigation charges also.
(2) The figures in parantheses denote percentages.
(3) *Bargadars* of sub-category VIII do not give any share to their land owners and the *barga* land under this category is disputed and forcibly occupied by the *bargadars*.

A comparison between Table 29 and 30 reveals that Sub-Category I *bargadars* are the same as *Krishani* system prevalent before the *Operation Barga*. Sub-categories III, VI and VII of Table 30 are better off than *Adhi, Panch-Adhi* and *Tebhaga* types of tenancy respectively in the sense that the crop share recieved by the *bargadars* improved (remained unchanged) while the cost share contributed by them remained the same (declined). *Bargadars* under Sub-catagories IV and V are, by and large , the same as those under *Pancha-Ardha*. *Operation Barga* does not seem to have made any dramatic change in sharing of crops and costs although it has revolutionised production relation by providing legal security of tenancy.

Of the *bargadars* in the first three sub-categories who did not supply bullock power, only those in Sub-category III received 50 percent of the gross produce to which they were entitled as per the Share Tenancy Act, in exchange of the manual labour provided by them on the *barga* land. But the *bargadars* under Sub-categories I and II received less share of the produce than they were legally entitled. Of all the *bargadars* those belonging to Sub-categories I and VI were the most deprived in terms of crop and cost sharing.

Bargadars in Sub-categories III, VII and VIII were found to receive their entitled share of the crop. These three sub-categories constituted less than one-fifth i.e., 19.4 percent of the total *bargadars*. It is rather unfortunate that more than 80 percent of the *bargadars* did not receive the crop share to which they were entitled even after a long time of the implementation of the *Operation Barga*.

Table 31 shows the cropping pattern and cropping intensity of different sub-categories of *bargadars*. In Group A the cropping intensity of sub-category IV was higher (135.84) than that of any other sub-categories of that group, while it was the highest (153.23) in the case of sub-category VI of Group B among all the sub-categories of *bargadars* of both the Groups A and B. But it is surprising that the cropping intensity in the sub-categories of *bargadars* of the Group A and B who received their entitled share of the produce as envisaged in the Share Tenancy Act was significantly lower. On the contrary, the cropping intensity was higher in the case of the sub-categories of *bargadars* who received lower crop share than their entitlement. The

performance of these sub-categories (III, VII and VIII) of *bargadars* receiving crop share to which they were entitled was not at all congenial for cultivation of the high-value, capital-intensive crops like potato and HYV paddy. During the *rabi* and the summer seasons these

Table 31. Cropping pattern and cropping intensity

Sub categories of *bargadars*	Net culti-vated area	% of area under crop to net cultivated area						Cropping Intensity
		Kharif		*Rabi*		Summer		
	(ha)	Local Paddy	HYV. Paddy	Wheat + Mustard	Potato	*Boro* Paddy	Jute	(%)
Group A: Landless *bargadars*								
I	58.50	93.86	2.34	10.77	3.64	12.75	0.31	127.10
II	134.61	97.15	1.09	18.34	8.70	13.32	—	110.18
III	50.87	91.29	0.98	4.03	1.59	5.01	8.70	113.53
IV	166.01	91.00	2.20	8.27	2.10	17.06	12.12	135.84
V	92.66	91.13	1.14	7.22	2.50	13.96	11.43	130.43
VI	23.64	92.81	1.59	9.36	6.65	12.40	2.34	129.90
VII	39.73	92.55	0.15	7.48	0.95	5.52	6.96	115.59
VIII	30.09	88.50	—	1.96	0.09	7.24	10.16	110.79
Group B: Land owning *bargadars*								
I	14.77	97.27	2.00	11.37	10.37	10.61	—	134.93
II	37.01	97.75	0.39	4.77	4.35	1.06	—	109.18
III	44.67	93.55	2.38	2.20	0.33	9.57	7.21	116.21
IV	168.14	90.42	4.83	5.40	1.87	14.43	9.75	129.28
V	84.76	93.18	2.49	3.98	3.25	11.09	8.75	126.56
VI	7.44	93.98	3.55	5.32	28.12	4.95	10.97	153.23
VII	23.26	94.76	3.18	7.03	0.52	9.94	1.60	118.36
VIII	5.26	92.62	1.52	2.81	—	8.06	12.70	117.72

sub-categories of *bargadars* were not able to cultivate a sizable percentage of area cultivated by other sub-categories of *bargadars*. This clearly shows that the receipt of the entitled share of the produce alone may not necessarily bring about an improved performance in farming. *Operation Barga* though ensured the receipt of the crop

Table 32. Cropwise input use pattern by sub-categories of *bargadars*

(Rs./ha)

Items		Sub-categories of *bargadars*							
Crop		I	II	III	IV	V	VI	VII	VIII
Group A: Land less *bargadars*									
Local	(a)	2315	2089	2264	2275	2350	2515	1972	2110
Paddy	(b)	61	62	69	68	67	67	60	70
HYV	(a)	2792	2817	3434	2864	3091	5476	2363	--
Paddy	(b)	61	59	58	62	64	65	54	--
Wheat+	(a)	3051	2586	2260	2665	2275	2665	2283	2307
Mustard	(b)	41	48	57	51	49	49	53	52
Potato	(a)	8943	10970	12046	10865	10268	10048	8011	5147
	(b)	31	28	25	26	29	29	36	35
Boro-	(a)	3721	3834	2438	3273	2585	3078	2758	2193
Paddy	(b)	50	47	58	47	49	56	52	56
Jute	(a)	2909	--	3070	3531	3212	2869	3039	2881
	(b)	66	--	68	58	63	64	67	65
Group B: Land-owning *bargadars*									
Local	(a)	2158	2103	2032	2096	2060	2074	2116	1900
Paddy	(b)	63	64	67	66	68	67	62	70
HYV	(a)	3410	3223	2933	2879	2733	3064	2715	1731
Paddy	(b)	53	52	65	64	57	55	62	61
Wheat+	(a)	2654	2474	2579	2754	2494	3163	2270	1822
Mustard	(b)	45	50	52	51	50	52	50	59
Potato	(a)	10402	10959	6437	8391	9810	10617	6358	—
	(b)	28	28	41	31	29	28	33	—
Boro-	(a)	3521	3663	3146	3010	2970	3122	3380	2090
Paddy	(b)	53	49	60	55	55	45	54	63
Jute	(a)	—	—	2814	2466	2957	2854	3131	2972
	(b)	—	—	60	47	63	59	65	64

Note: (a) denotes total cost(i.e.,labour+bullock power + seed + fert. + manure + irrigation cost)

(b) denotes % of total cost on human labour

share to some extent seems to have failed to increase production and productivity primarily because other related measures were not taken into consideration.

Table 32 shows the application of inputs for six major crops, viz. local paddy, HYV paddy, wheat+mustard, potato, *boro* paddy and jute. Labour cost was calculated at the prevailing market rate for casual labour. Cost of inputs like seed, fertilisers, manure, irrigation and bullock power were computed in terms of rupees per hectare. In most of the cases the cost of human labour input per hectare was comparatively less in the Sub-categories VII and VIII and that of material inputs was lower in the Sub-categories III and VIII, than those in other sub-categories. Table 32 reveals that in the majority of the cases the performance of *bargadars* of Sub-categories III, VII and VIII in respect of application of total inputs was not at all satisfactory as compared to that in other sub-categories of *bargadars* such as I, IV, V and VI who received less share of the produce than their entitlement. This confirms that receipt of due share of the crop as per the legal entitlement by the *bargadars* is neither a necessary nor a sufficient condition for increased investment in material resources on the *barga* land for rapid growth in production and productivity.

Yield and annual gross return per hectare for six major crops is given in Table 33. The *bargadars* who actually received their entitled share of the crop did not have any clear yield advantage except in wheat+mustard in Sub-category VII of Group B, and potato in Sub-category III of Group A as compared to that of the other sub-categories of *bargadars*.

The *bargadars* in Sub-category I in both the above groups(landless and land owning), who were the poorest in terms of their resource endowment, had obtained the highest productivity of local paddy which was the most important crop in terms of area covered at the time of this study. Gross return per hectare was also very low for the earlier mentioned Sub-categories of *bargadars* (i.e., III, VII and VIII) who enjoyed their entitled share in the produce while it was significantly higher in the case of the Sub categories I and VI in both the groups A and B.

Table 33. Per hectare yield of crops(in value terms) and annual gross return of sub-categories of *bargadars*

(Rs./ha)

Category of *bargadars*	*Kharif*		*Rabi*		Summer		All crops
	Local Paddy	HYV. Paddy	Wheat+ Mustard	Potato	*Boro* Paddy	Jute	
Group A: Landless *bargadars*							
I	4455	5880	2665	12900	7802	3122	6430
II	4275	4932	2460	13895	7850	--	5044
III	3362	5675	2750	14740	3387	2675	4064
IV	3537	5277	3222	12855	4617	2935	5283
V	3632	6072	2992	13517	4945	3057	5309
VI	3930	9760	2892	12357	7345	3182	6219
VII	3810	5167	2262	10577	4502	2597	4430
VIII	2932	--	2095	3500	2002	2992	1569
Group B: Land-owning *bargadars*							
I	4517	5585	2505	12905	7642	--	7282
II	4127	4277	2975	13307	6760	--	4913
III	3600	6572	3615	8040	4355	2652	4307
IV	3720	6410	3492	10592	4507	3080	5297
V	3792	6710	3572	12317	4785	3112	5428
VI	4197	4890	3370	13017	6010	3452	9224
VII	4037	6062	3977	9582	6290	3282	5174
VIII	2542	2237	1952	--	1682	2905	2947

Note: Annual gross return per hectare for all crops was computed by dividing the value of total production of all crops (Rs.) by the net cultivated area (ha)

The crop wise net return per hectare (value of gross production minus total cost) for the the selected crops are given in Table 34 (excluding the cost of family labour)and Table 35 (including the cost of family labour). In the case of local paddy, the *bargadars* belonging to the Sub-category I of both the Groups A and B could achieve higher net return per hectare.(Table 34).The performance of this sub-category in terms of net return per hectare for the majority

of the crops was also good. *Bargadars* of Sub-category VI came next in terms of net return per hectare.

Table 34. Crop-wise return by sub-categories of *bargadars* net of all costs excluding family labour.

(Rs./ha)

Crops	Sub-categories of *bargadars*							
	I	II	III	IV	V	VI	VII	VIII
Group A: Landless *bargadars*								
Local Paddy	3192	3102	2410	2417	2490	2792	2667	2090
HYV Paddy	4520	3670	3725	3795	4505	6667	4235	--
Wheat+Mustard	595	840	1595	1625	1282	1230	930	762
Potato	6315	5802	5720	4612	8815	5937	4880	167
Boro Paddy	5527	5535	2042	2547	2870	5067	2945	802
Jute	1562	--	1240	990	985	1275	1142	1507
Group B: Land-owning *bargadars*								
Local Paddy	3427	2942	2465	2557	2597	3200	2852	2542
HYV Paddy	3622	2297	4950	4795	5025	2940	4557	1307
Wheat+Mustard	642	1385	2127	1767	2017	1787	2355	907
Potato	5100	5135	4025	4337	5005	5142	4610	--
Boro Paddy	5485	4500	2682	2767	3075	3895	4550	620
Jute	--	--	1380	1737	1252	2127	1352	1465

The *bargadars* of Sub-category I were also found to have higher net return per hectare in most of the crops (Table 35) even after the deduction of the imputed cost from the gross return.

As already mentioned it was these *bargadars* under Sub categories I and VI who were the most deprived of the lot in terms of their shares in crop and cost of cultivation. Unfavourable terms of crop and cost sharing contracts could not be expected to provide enough incentive to the *bargadars* of these sub-categories for an additional investment and for making farming more efficient. In these cases the share of the crop and cost was such as to induce the land owners to supply yield-increasing inputs which more often than offset the negative effect of the unfavourable shares of the *bargadars* in crops and costs. In fact, these sub-categories of tenancies were not much

different from those practised before the *Operation Barga* and consequently did not change the input sharing pattern as well as the decision making process.

Table 35. Crop-wise return by sub-categories of *bargadars* net of all costs including family labour.

(Rs./ha)

Crops	Sub-categories of *bargadars*							
	I	II	III	IV	V	VI	VII	VIII
Group A: Landless *bargadars*								
Local Paddy	2140	2185	1120	1262	1282	1415	1837	822
HYV Paddy	3087	2115	2240	2412	2980	4282	2805	--
Wheat+Mustard	-387	-125	490	557	217	227	-20	-212
Potato	3955	2925	2695	1990	3250	2310	2567	-164
Boro Paddy	4080	4015	900	1345	2360	4267	1745	-190
Jute	212	--	-395	-597	-155	312	-442	105
Group B: Land owning *bargadars*								
Local Paddy	2360	2025	1567	1625	1732	2122	1922	642
HYV Paddy	2175	1055	3640	3530	3977	1900	3447	507
Wheat+Mustard	-150	500	1035	737	1077	207	1707	130
Potato	2502	2347	1652	2200	2507	2400	3225	
Boro Paddy	4120	3097	1207	1497	1815	2887	2910	-407
Jute	--	--	-162	615	155	597	152	-67

Furthermore, the power structure prevailing in the rural areas of the State explains, at least partly, the better performance of these less previleged *bargadars* as compared to their more privileged counterparts. Despite the rule of the Left Front Government in the State there has not been any significant qualitative change in the power axis in the rural areas. One of the plausible reasons for the old power axis to continue in the rural Bengal is that the land owners have gradually changed their political loyalty obviously for socio-economic convenience. The land owners still dominate the rural power structure and also excercise control over these *bargadars*. Under the present system, the weak bargaining power of the *bargadars* is often exploited by the landlords through extraction

of more variable inputs than legally permissible. These privileged land owning class also come forward in their own interest and play a crucial role in the decision making process. They extend their full co-operation to the *bargadars* and make sure that these *bargadars*

Table 36. Local paddy: Net return, entitlement and actual received

(Rs./ha)

Sub-categories of *bargadars*	Net return	Net return as per entitlement		Net return actually received by	
		Bargadars	Land owners	*Bargadars*	Land owners
Group A Landless *bargadars*					
I	2140	805	1335	62	2077
II	2185	835	1350	407	1777
III	1120	112	1007	112	1007
IV	1262	317	945	-217	1480
V	1282	342	940	-337	1660
VI	1415	762	652	25	1390
VII	1837	885	952	885	952
Group B Land-owning *bargadars*					
I	2360	885	1475	132	2227
II	2025	710	1315	297	1727
III	1567	427	1140	427	1140
IV	1625	610	1015	32	1592
V	1732	722	1010	-225	19957
VI	2122	992	1130	597	1525
VII	1922	912	1010	912	1010

Note: (1) Net return = Gross return minus cost of all inputs including human labour
(2) Entitled net return = Share of gross return as per entitlement minus cost acually shared.
(3) Actual net return = Share of gross return actually received minus cost actually shared.

invest a reasonable quantity of inputs on their *barga* land. This confirms that a cordial production relation between the owners and the workers is one of the most important factors for improvement in

the production process even in an imperfect and non-competitive market with various types of risks and uncertainties.

In order to understand the level of performance of the sub-categories of *bargadars* , the share entitlement of both the parties in the net return as per the Act *vis-a-vis* the net return actually received by them has been calculated and presented in Table 36.

Table 37. HYV Paddy : Net return, entitlement and actual received

(Rs./ha)

Sub-categories of *bargadars*	Net return	Net return as per entitlement		Net return actually received by	
		Bargadars	Land owners	*Bargadars*	Land owners
Group A Landless *bargadars*					
I	3087	1227	9820	247	2840
II	2115	795	1320	300	1815
III	2240	815	1425	815	1425
IV	2412	952	1460	360	2052
V	2980	945	2035	257	2722
VI	4282	1702	2580	880	3402
VII	2805	1512	1292	1512	1292
Group B: Land-owning *bargadars*					
I	2175	977	1197	45	2130
II	1055	450	605	22	1032
III	3640	1460	2270	1370	2270
IV	3530	1607	1922	900	2630
V	3977	2152	1825	962	3015
VI	1900	650	1250	1137	762
VII	3347	1832	1515	733	1515

Although the landlords in both Group A and Group B did actually receive positive net return ranging from Rs.952 to Rs.2227 the *bargadars* realised a positive net return in all but three cases(Sub-categories IV and V in Group A and Sub-category V in Group B). It may be reminded here that except Sub-category VII in both the Groups A and B all other categories of *bargadars* do not have any legal sanction. Specifically, these categories emerged on the scene on

the basis of convenience and mutual consent of the landlords and the *bargadars* conditioned by local circumstances. It is surprising to note that besides Sub-category VII the *bargadars* in Sub-category III actually received their entitled share of the crop as per the agreement with the landlords irrespective of the Groups. Except in three cases, all types of *bargadars* received a positive net return in local paddy (Table 36).

In the case of HYV paddy all types of *bargadars* and their landlords received a positive net return (Table 37).As in the case of local paddy, the *bargadars* in Sub-category III and Sub-category VII actually received their entitled share in the produce. The same is true for *boro* paddy (Table 38) where the *bargadars* in Sub-category IV in Group A and Category V in Group B received a negative net return.

Table 38. *Boro* Paddy : Net return, entitlement and actual received

(Rs./ha)

Sub-categories of *bargadars*	Net return	Net return as per entitlement		Net return actually received by	
		Bargadars	Land owners	*Bargadars*	Land owners
Group A Landless *bargadars*					
I	4080	2037	2042	737	3342
II	4015	2105	1910	1320	2695
III	900	710	190	710	190
IV	1345	502	842	-27	1372
V	2360	1150	1210	312	2047
VI	4267	2292	1975	1720	2547
VII	1745	620	1125	620	1125
Group B: Land-owning *bargadars*					
I	4120	1927	2192	655	3465
II	3097	1585	1512	907	2190
III	1207	267	940	267	940
IV	1497	510	987	107	1390
V	1815	655	1160	-157	1972
VI	2887	1447	1440	1030	1857
VII	2910	1337	1572	1337	1572

In the case of *boro* paddy , two sub-categories of *bargadars* suffered a loss (Table 38). The net returns actually received by the *bargadars* in Sub-category IV in Group A and Sub-category V in Group B were Rs.-27 and Rs.-157 respectively although the net returns to which they were entitled were Rs.842 and Rs.1160.

But in the case of high valued and capital intensive crops like potato, the party supplying the material inputs, bullock power and irrigation charge received a negative net retutn in most of the cases (Table 39).

Table 39. Potato : Net return, entitlement and actual received

(Rs./Ha)

Sub-categories of *bargadars*	Net return	Net return as per entitlement		Net return actually received by	
		Bargadars	Land owners	*Bargadars*	Land owners
Group A Landless *bargadars*					
I	3955	3610	345	1460	2495
II	2925	3857	-932	2467	457
III	2695	4280	-1585	4280	-1585
IV	1990	2632	-642	2025	-35
V	3250	580	2670	-360	3610
VI	2310	975	1330	-770	3005
VII	2567	-77	2645	-77	2645
Group B: Land-owning *bargadars*					
I	2502	3495	-992	1470	1157
II	2347	3597	-1250	2265	82
III	1602	1340	262	1340	262
IV	2200	2227	27	1745	455
V	2507	1100	1407	652	1855
VI	2400	1082	1317	557	1842
VII	3225	830	2395	830	2395

About 50 percent of the sub-categories either of *bargadars* or their landlords would be affected if they were allowed to receive their net

return as envisaged in the Act . The existing provisions in the Share Tenancy Act do not serve very useful purpose for increased investment, a pre-requisite for enhancement of productivity in a backward labour-intensive agriculture of the State. On the contrary, it acts as a hindrance to augment agricultural production on the *barga* land. It is well known that most of the technological innovations in Indian agriculture are relatively capital intensive, and hence 25 percent of the gross produce provided in the Act as share of the material and other inputs (except human labour) is too inadequate to provide an incentive for investment in these crucial yield augmenting

Table 40. Return on input costs (except labour) as per Share Tenancy Act

Sub-categories of *bargadars*	Net return as % of input cost (except labour)						% of annual return on material input
	Local Paddy	HYV Paddy	Wheat+ Mustard	Potato	*Boro* Paddy	Jute	
Group A : Landless *bargadars*							
I	24.79	36.15	-62.58	-47.18	4.99	-21.06	3.77
II	35.71	7.74	-53.44	-55.92	-2.50	--	10.65
III	42.36	0.45	-27.94	-58.86	-18.3	-31.28	2.89
IV	21.65	24.15	-37.98	-59.69	-33.17	-49.93	-1.28
V	20.19	38.52	-46.93	-53.54	-6.54	-34.43	-1.77
VI	21.84	28.30	-46.04	-56.65	35.20	-22.81	-24.67
VII	21.65	39.90	-47.49	-48.32	-14.33	-34.38	8.47
VIII	17.64	--	-52.45	-73.75	-47.36	-25.40	7.93
Group B: Land-owning *bargadars*							
I	44.03	-12.43	-56.61	-56.66	17.39	--	-9.44
II	37.63	-30.32	-40.09	-57.90	-9.50	--	3.61
III	36.27	61.82	-27.11	-46.50	-11.95	-23.79	23.00
IV	31.34	54.91	-35.37	-54.39	-16.33	-18.39	-15.07
V	46.03	43.43	-27.88	-55.74	-8.93	-15.89	13.38
VI	52.90	-9.22	-44.40	-57.53	-11.45	-9.70	-28.81
VII	24.94	48.53	-11.82	-43.30	1.73	-20.50	18.06
VIII	14.53	-5.82	-34.33	--	-44.78	-21.24	1.76

Note: Net return is 25 percent of the value of gross produce minus cost of material inputs, bullock power and irrigation.

inputs to both the *bargadars* and the landlords. In other words, neither the *bargadar* nor their landlord is interested in investment in material and other inputs in exchange of a mere 25 percent of the gross produce as stipulated in the Act.

Net return as percentage of input cost, excluding labour cost, calculated on the assumption that Share Tenancy Act is strictly enforced is given in Table 40.

It may be reminded that fifty percent of the produce is retained by the *bargadars* to meet the cost of human labour. The balance of this

Table 41. Crop-wise returns on family labour for the *barga* land

(Rs/labour day)

Categories of *bargadars*	Crops						Annual average return (All crops)
	Local Paddy	HYV Paddy	Wheat + Mustard	Potato	*Boro* Paddy	Jute	
Group A: Landless *bargadars*							
I	13.55	15.02	7.79	20.74	19.33	4.45	13.20
II	18.47	15.26	9.09	23.78	23.92	--	17.52
III	14.00	19.83	13.60	30.91	15.67	6.85	15.02
IV	10.37	16.13	10.23	22.58	9.83	0.34	11.74
V	8.31	14.90	3.14	18.31	13.78	0.30	9.53
VI	13.02	17.54	6.36	19.40	26.07	4.42	8.96
VII	25.77	27.93	4.91	12.36	19.37	9.98	19.66
VIII	21.11	--	10.02	1.00	10.36	13.75	23.97
Group B: Land owning *bargadars*							
I	14.38	13.21	6.70	19.42	18.94	--	14.32
II	16.96	13.01	11.10	23.21	21.08	--	16.21
III	18.98	26.21	18.27	19.89	15.12	7.68	18.29
IV	13.24	21.89	10.94	23.08	13.89	7.32	14.29
V	12.40	24.53	8.53	9.49	11.20	1.16	12.94
VI	19.89	16.33	7.84	15.41	25.86	8.37	16.83
VII	25.31	32.16	24.22	20.45	27.42	4.95	24.05
VIII	34.60	20.92	24.32	--	7.73	12.23	21.96

Note: (1) Return on family labour is 50 percent of gross return minus cost on hired labour is divided by the number of family labour days employed.

(2) The average market wage rate for hired human labour is Rs. 12.80

share after payment of wage for the hired human labour divided by the number of family labour days employed in the concerned crop represents the actual compensation /return or virtual wage for the family labour per day. These returns for different crops are given in Table 41.

It may be seen that the returns on family labour varied from crop to crop, as well as among various categories of *bargadars*. These returns, however, exhibited a similar pattern in both the landless(Group A) and the land-owning (Group B) *bargadars* .In particular , the family labour wage/return per day was found to be the lowest in jute, a labour using crop the price of which was subjected to wide fluctuations and a cobweb pattern. Except for Sub-category VIII in Group A (and to some extent in Group B)where the land was forcibly occupied by the *bargadars* without paying any rent to the landlords, returns on family labour in jute was found to be much below the market wage rate for hired labour(Rs.12.80). This phenomenon was also observed in wheat+mustard . It is interesting to note that in HYV paddy the returns or the virtual wages of family labour were much above the prevailing market wage rate regardless of the sub-categories of *bargadars* and crops. This is also true, except a few sub-categories of *bargadars* ,in potato, local paddy and *boro* paddy. Assuming that the *bargadars* are rational decision makers the marginal value product [MVP] of family labour was generally lower than the market wage rate or the marginal value product of hired labour in jute, wheat+mustard and in those crops/categories of *bargadars* where the returns of family labour was less than Rs.12.80 per day. This is primarily due to overemployment of family labour in absence of any other avenues.

The Share Tenancy Act did not consider these aspects in dèpth. The blanket recommendation in respect of share of the produce (50 percent) to be retained by the *bargadars* as compensation for labour input required for cultivation without analysing the structure of costs which varies from one crop to another can not be termed scientific. Strict enforcement of the share entitlement as stipulated in the Share Tenancy Act without restucturing the proportion of share of the

concerned crop may not only adversely affect the cropping pattern but also the productivity on the *barga* land.

Crop-wise net return per hectare has been calculated taking into account the "rent" as an element of cost and is shown in Table 42. The net return per hectare was positive in all types of paddy (i.e.,local paddy, HYV paddy, and *boro* paddy). But in majority of

Table 42. Crop-wise net return by sub-categories of *bargadars*.

(Rs./ha)

Category of *bargadars*	Crops					
	Local Paddy	HYV Paddy	Wheat+ Mustard	Potato	*Boro* Paddy	Jute
Group A: Landless *bargadars*						
I	1025	1617	-1055	730	2150	-567
II	1117	882	-740	-550	2050	--
III	275	820	-197	-990	67	-1067
IV	377	1092	-247	-1225	190	-1332
V	375	1462	-530	-130	1125	-920
VI	432	1842	-745	-780	2432	-482.5
VII	885	1512	-585	-77	620	-1090
VIII	90	--	-737	-2522	-1692	-642
Group B: Land-owning *bargadars*						
I	1235	780	-777	-725	2210	--
II	992	-15	-245	-980	1410	--
III	667	1997	132	-407	122	-825
IV	695	1927	-135	-447	370	-155
V	785	2300	185	-572	620	-622
VI	1072	602	-635	-855	1385	-265
VII	912	1832	712	-3430	1337	-667
VIII	-5	-52	-357	--	-830	-795

Note: Rent is considered as one of the elements of cost.

the cases the net return was negative in other crops like wheat+mustard, jute and potato. This might be one of the reasons for allocating a lower proportion of the *barga* land for these crops. It is quite likely that in the long run *bargadars* would be reluctant to grow such crops if their prices are not remunerative and the share in

the produce remains unaltered. Even in the case of wheat + mustard and jute which required comparatively less working capital the share of the produce (25 percent) was too inadequate for meeting the cost of non-land and non-labour inputs after payment of statutory rent (25 percent of the produce) and labour cost (50 percent of the produce). This is also true for other crops. The poor performance on the *barga* land may be explained by the conflicting interests inherent in the implementation of the Share Tenancy Act.

In general, the share of the crops earmarked for meeting the cost of material inputs (other than rent of the land and wage of labour) fell short of the "requirement" . It is quite likely that neither the *bargadar* nor the landlord would be inclined to spend more on material inputs than permitted by the 25 percent of share of the crop except by accident or ignorance. Productivity will suffer if the level of material inputs is reduced resulting in a lower share of the produce **in absolute terms** which in turn would induce still lower level of material inputs and a vicious circle will ensue. The inevitable conclusion is that the system will breed inefficiency, resulting in lower productivity and perpetuate inequality in the distribution of farm income. Thus *Operation Barga* would defeat the very purpose for which it was enacted unless shares of the *bargadars* in the crops are not based on cost structures and their variations over regions and crops, so that inputs including land, and non-land inputs (material inputs and labour) are paid according to their marginal productivities. This would encourage an efficient allocation of resources and an equitable sharing of the produce between various factors of production and minimising the built-in exploitative tendency either by the landlords or by the *bargadars*.

The Share Tenancy Act has taken for granted that the *bargadar* is responsible for employment of manual labour on the *barga* land. The Act is, however, silent in respect of fixing responsibility for supplying material inputs on the *barga* land. Naturally, the land owners' optimal strategy would be either not to invest in the material inputs or at most to restrict the spending in these inputs to 25 percent of the value of the produce which is set aside for meeting the cost of the material input.

The study has conclusively revealed that *Operation Barga*, albeit partly successful in bringing about a change in the tenancy pattern, has not succeeded in augmenting production and productivity on the *barga* land where the *bargadars* have been receiving the stipulated crop share. Furthermore,the crucial input of entrepreneurship continue to remain critically low because of the inherent conflict of interest in crop sharing mechanism coupled with the fact that the *bargadars* , especially the landless ones, intrinsically lack this input.

The unsatisfactory performance of even those *bargadars* who received their legal crop share as stipulated in the Act , was due mainly to their poor resource base and lack of access to modern technology and to capital market with the resultant inability to acquire material resources. Moreover, the imperfections in input markets also generally contributed to the poor performance of the *bargadars*. The State Government should take serious note of these short-comings and modify the tenancy laws to overcome them as early as possible. Otherwise, the *Operation Barga* would end up as a mere political programme providing, to some extent, a more congenial production relation through security of tenancy ,and the desired economic objectives of higher income of the *bargadars* , more egalitarian distribution, increased productivity and employment would remain as a distant dream.

7

CONCLUSIONS AND POLICY IMPLICATIONS

The *Operation Barga* being implemented in West Bengal is surely one of the greatest attempts in India for the implementation of the post-1947 land reforms. A programme like this for ensuring social justice and equity is long over due in most of the States. Inspite of several shortcomings, *Operation Barga* improved the status of the *bargadars* by confirming tenurial security, conferring legal rights on them to have a fair share of the produce and providing access to credit institutions.

However, a close scrutiny of the programme at the grassroot level revealed that the majority of the *bargadars* were not getting their due share as envisaged in the Share Tenancy Act. The *bargadars* who received their entitled cropshare was rather poor compared to that of the rest, implying that receipt of due share as per the legal entitlement by the *bargadars* is neither a necessary nor a sufficient condition for a better performance in agricultural production. Further, investment in material inputs was less in these categories of farms.

In general,the performance of the *bargadars* on their *barga* land never came upto the level acheived by them on their own land. In all crops except paddy , the sharing of costs and crop as envisaged in the Act led to lack of incentive on the part of *bargadars* as well as land owners to make improvements in productivity. This is because the relative cost structure of the different crops was not taken into account while fixing the share of cost and crop. Moreover, the Act is silent in respect of fixing responsibility for supplying material inputs on the *barga* land.

Despite the rule of the Left Front Government in the State there was no significant qualitative change in the power axis in the rural areas. *Bargadars* badly required consumption loan.Their access to

input sources, especially irrigation, was limited. Their entrepreunership, i.e., quality of work and risk taking capacity remained critically low in the *barga* operated farm. The performance of the *bargadars* would not have been so bad, if adequate complimentary measures for developing entrepreneurship and organising input supply on co-operative basis were taken. The *bargadars* could have been organised to form registered groups with the main objective of bringing selected farm operation under Group Management. The available evidence from Kerala shows that it is possible to increase agricultural productivity through adoption scientific farming practices and at the same time reduce the cost of cultivation even in tiny farm holdings through this approach.

The new systems of sharing costs and produce emerged on the *barga* scene of West Bengal agriculture on the basis of convenience and mutual consent of the landlords and the *bargadars*, conditioned by local circumstances. The landlords who received a favourable share of the produce were found to play a crucial role in decision making and in encouraging the *bargadars* to invest a reasonable quantity of inputs in due time on their *barga* land. This also ensured a cordial production relation between the owners and the workers.

The Share Tenancy Act provides only 25 percent of the gross produce as compensation for material inputs . This was found to be too inadequate even for meeting the cost of material inputs. Besides, the productivity of the material inputs was found to be low on the *barga* lands for inefficient use of these inputs by the *bargadars* who lacked managerial skill. Naturally, the optimal strategy of the party supplying material inputs remained either not to invest in the material inputs or at best to restrict the spending in these inputs only to 25 percent of the value of the produce, the residue meant for meeting the cost of inputs.

This led to a vicious circle of lower investment, lower productivity and meagre returns for investment and resulted in inefficiency, lower productivity and inequitable income distribution. Unless the Share Tenancy Act is modified in line with the cost structure and resource productivity in different crops, the situation will hardly improve.

The present tendency to overglamourise *Operation Barga* will be self defeating in the long run.Commenting on the spurt in production in the late eighties in the state, Economic Review 1989-90 (Government of West Bengal) observes:"It is the policy of land reforms with simultaneous provision of major non-land inputs.... that has unleashed the productive forces and played the crucial role in bringing about such an improvement in agricultural production in the state." These types of self congratulatory remarks ,far removed from ground realities, though politically rewarding, may lead to a dangerous state of complacency. The shortcomings brought out by the study ,if not corrected at the earliest may lead to stagnation in agricultural production and a lower economic growth which the State cannot afford at present.

Operation Barga cannot be an end in itself , but should be treated as a means to consolidate and further improve the efforts towards socio-economic development and strengthening of democracy at the grassroot. The situation thus calls for an immediate implementation of the post *barga* measures.

Important policy directions derived from the present analysis are as follows.

1. The Share Tenancy Act should be modified keeping in view the cost structures and resource productivity in differnt crops.

2. Attempts at diversification of agriculture and allied activities should be initiated to strengthen the resource base of the *bargadars*.

3. *Bargadars* need to be organised to form registered groups with the main objective of bringing selected farm operation under "Group Management".

4. Sufficient oportunities should be created for the development of entrepreunership among the *bargadars*.

5. Farmers' co-operatives for input supply and services should be established at the panchayat level.

6. Measures like *Operation Barga* should be initiated in other states, without delay for removing the grounds of agrarian tension threatening the existence of a civilised society. *Operation Barga* provides a rich experience in this regard.

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