

## INCIDENCE AND IMPORTANCE OF AGRARIAN INTERLINKAGES

### 1.1 The Underlying Issue

Economic development relates as much to the problem of sustaining equity as to the problem of sustaining economic growth. In the case of a country like India, with five decades of post-independence development experience, the problem has been rendered more acute by the observation of development in pockets without equitable dispersion of gains. Part of this problem can be accounted for by the populousness of the country and the continued importance of agriculture as a mode of cultivation, against a development-planning initiative that has stressed industrialisation with an urban-bias. The parallel expansion in development economics through studies of emerging imbalances and inequalities have highlighted this distortion. As a result, rural development has grown in importance as a sub-discipline within these studies.

The development of the village economy in India is as important as that of the national economy if equity is to be maintained. This is so because poverty in the country is largely a reflection of rural impoverishment. Solutions to this problem are not however easy. The rural economy in India in the face of a very long history of settled cultivation, and divisive institutions like caste, poses certain impediments to development. Such impediments mostly arise from inequalities between rural classes themselves, and impoverishment of villages can result from the dynamics imparted to agrarian relations by development initiatives. A wise policy for economic development will thus give equal credence to both the rural and urban economy, and to agrarian relationships that exist within the *former*.

In qualitative terms the objective of rural development is to increase rural output, employment and incomes. However, the agrarian perspective on these would ask where this gains accrue. Multiplicity of agricultural income that is accompanied by increased concentration of wealth also manifests increased agrarian power. In India's development experience, phenomena such as the growth in numbers of the landless agricultural labourers, and the flight from the villages to the cities because of economic pressures, are all attributable to such factors. Moreover, they have vitiated the quality of development that has been achieved in quantitative terms. It therefore assumes importance to seek agrarian - based solutions to the problems of agrarian backwardness. A rural development approach that is considered by this is able to control both the magnitude and the spread of development, thereby consolidating the economic gains of the country.

### 1.2 Agrarian Backwardness and Interlinkages

The study of rural development in recent years has focussed a lot of attention on the various types of interlinkages that exist between land, labour, credit and output in the rural areas of less developed countries. These interlinked transactions are different from "the systematic interdependence of economic action in competitive general equilibrium theory and are more in the form of package deals with the terms of one transaction contingent upon the terms of another."<sup>1</sup> The usual examples outlined draw upon landlord-tenant relations that intertwine with creditor-borrower relations between the same contracting parties, or labour- hiring contracts that interlock with those on which credit or land is offered, or simultaneous deals in the commodity and credit markets against pre-commitment of future crops. A clear understanding of the nature of these relations is obviously important to any policy for institutional reform.

Two contrasting views are found in the literature concerning rural markets. According to the first, interlinking increases the power of the stronger sections to exploit weaker sections in the village through interpenetration of markets.<sup>2</sup> The second, while rejecting this necessarily exploitative character of interlinkages explains the rationale of their existence in terms of pervasive risks, incomplete markets, information asymmetry and moral hazard problems that are commonly characterised features of rural economies in developing countries.<sup>3</sup>

Investigation of interlinked agrarian markets is important in order to understand the nature of such linked transactions, a task that is being undertaken by the present study. Given the variety of interlinkages evident between land, labour, credit and output markets in a rural economy, we need to know the reason behind the genesis of such institutions and the extent to which exploitation may be present in linked transactions. The primary sources for interlinkage in an agrarian economy is the rural need for credit. A collateral-poor rural household which is unable to raise loan in the formal credit market may also be in a position to negotiate loan (and supplement its meagre income) by future promise of labour supply or standing crop. Interlinked transaction may therefore conceivably be a device for survival on the part of the rural poor. Regional variations in nature and extent of interlinkages also need to be studied for a proper understanding of their association with different levels of agrarian backwardness. Because of their personalized character, the contractual arrangements may differ between social groups. In order to compare these differences, the institution of interlocking has to be separately considered for different groups of rural households covering owner cultivators, tenants and the landless.

Most of the existing studies on interlinkage which are partial in nature consider only two-market interlinkages, such as credit-output, credit-labour and credit-landless markets. Given the interlinked nature of several rural transactions where transaction-terms in more than two markets are simultaneously finalised, these studies show up their inadequacies. Since the imperfections in one or more markets have their repercussions in all others, a comprehensive study on interlinkage should simultaneously cover all agricultural markets, namely, those for land, labour, credit and output. Our study is therefore an attempt to examine comprehensively the phenomenon of interlocking in order to obtain a full picture of these from the perspective of agrarian relations in a backward rural economy.

A few words might be said about the methodology to be adopted for credit market analysis by the present study. Evaluation of the strategy and impact of the interlinkages can be assessed by studying their impact on the interest rates present in the market for rural credit. However, the first problem relates to the measurement of the interest rate itself. Although there is a nominal or *explicit* interest rate stipulated in credit-terms which reflects the observed cost of borrowing, in evaluating the credit-interlinkage an element of hidden or *implicit* costs enters the rural credit transactions. In fact, the impact of unequal exchange is likely to be felt more through the hidden cost of borrowing than through the nominal costs. As such, an *implicit* interest rate has to be introduced into the analysis, which has to be computed on the basis of the effect of credit-terms on future wages of interlinked labour, or the effect of credit-terms on the prices paid against inputs supplied or against future committed sale of output. *A priori*, before entering the actual analysis, implicit interest rates are expected to be positive and therefore to impose additional costs on borrowers, rendering the credit-interlinked terms adverse. All these take place even when the nominal interest rate appears to be low.

Next, for micro-study of credit conditions in the controversial interlinked credit-labour market, the additional concepts of *transaction costs* and *threshold* rates of interest have to be brought into the analysis. Of these, transaction costs are important in a rural situation because of difficulty of access to credit. Potentially therefore they can represent an addition to the cost of borrowing over and above the implicit costs as defined earlier. This leads us therefore to the concept of the *effective* rate of interest on credit-transactions which subsume all such hidden and overt costs.

Thirdly, in micro-level credit market study, another concept that needs to be considered is that of the threshold rate of interest. This concept arises from the fundamental continuity between borrowers and non-borrowers: whereas the non-borrowers pay no interest charges, the borrower, at the entry into the credit market, pays an entry-level (effective) interest rate considerably in excess of zero under normal circumstances. The threshold interest rate may thus be defined as the level of interest payable at this point of entry. The concept is particularly useful in the regression analysis.

With this structure of interest rates and condition, the operation of rural credit market can be evaluated in disaggregated micro-study through *mark-ups/ mark-downs* imposed on threshold interest rates by various influencing factors. Since such factors may be both qualitative and quantitative, a two-step regression analysis is indicated, combining both OLS and dummy regression (ACOV-Technique). This underlying structure and analyses from it provide the core of the present study.

The present study is thus an empirical investigation into interlinked agrarian markets as they operate in our specific study region and is based on a socio-economic survey conducted over 12 villages of the district of Cooch Behar in West Bengal.

### 1.3 Purposes of Investigation

#### *Objectives of Study*

The objective behind the study of interlinkage<sup>s</sup> in an agrarian economy arise<sup>s</sup> in their importance as both phenomena as well as factors in agrarian backwardness. However, this segregation within the economic sector, where they appear, i.e., agriculture, call<sup>s</sup> for a disaggregated approach to the study i.e. a micro-study. Accordingly, the objective<sup>s</sup> set out for the present investigation are laid out below.

Firstly, in following a disaggregated approach we are required to study the nature and extent of interlinkages among the disaggregated classes of rural households, namely, *pure* owner-cultivators, tenants and landless agricultural labourers.

Secondly, it becomes necessary to examine the modus operandi of different types of linked transactions with a view to explore the nature of such transactions. It then becomes necessary for us to examine whether linked transactions are exploitative in nature compared to non-linked transactions.

Thirdly, it becomes necessary to investigate the rationale behind the existence of interlocking in the backward rural economy.

#### 1.3.1 The Primary Investigation

In order to understand the nature and extent of credit arrangements among different types of rural households, intensive field surveys are necessary because the existing large-scale surveys, such as the Land Holding Surveys and the Rural Labour Enquiries by NSS, the Rural Credit Surveys by the RBI and the village surveys carried out by Agro-Economic Research Centre in India, do not capture the intricacies of the interlinkages. In view of this, data have been collected under the present investigation on the transactions of the households in all the agrarian markets, such as land, labour, credit and output.

The field investigation was conducted during the year 1990-91 and the information pertain to the year just preceding. We followed a three-stage sample design to select 301 cultivators from 12 villages. Data for a sample of 40 landless labour households selected randomly from these villages was also separately collected. Collection of data was done by personal interviews on the basis of specifically designed questionnaires and later cross-checked against corroboration provided by other people living in the villages. We also interviewed credit agencies, both formal and traditional, with whom our sample households have had transactions.

## 1.4 A Survey of the Literature

### 1.4.1 Rural-Economic Stagnation

The subject of agrarian backwardness has received considerable attention in traditional economic theories as well as in current researches on both theoretical and empirical works. These studies focus, in particular, on the causes of technological stagnation, the consequences of different terms of land tenure systems, labour-arrangements and the nature of rural credit market.

It has been argued by some economists that certain tenurial arrangements could dampen innovation and generate inefficiencies. Both Adam Smith (1776) and Marshall (1920) examined different land-tenure systems and came out with the same conclusion, preferring fixed rental tenancy to share tenancy. In a fixed rental system, the landlord receives a fixed rent from the tenant and the tenant earns the residual. On the other hand, in the share tenancy system, the landlord leases out his land to his tenant with the agreement that he will receive a fixed proportion of output. Therefore, in the fixed rental system the tenant is more interested to take innovative measures for raising the level of production, since all residual earnings go to the tenant after paying fixed rent to the landlord. Since under share tenancy the increased output resulting from innovative activities of the tenant would be proportionately divided between the tenant and the landlord, and the tenant could not enjoy the full benefit of innovation introduced by him, he would not be interested to introduce innovative measures under share tenancy and as such share tenancy system would be relatively stagnant.

It is, therefore, clear that the initiative for innovations rests with the tenants according to both Smith and Marshall. Innovations are more easily acceptable to a tenant in a fixed rental system than in the system of share tenancy.

But in a situation where risk and uncertainty factors are introduced in the production function of agricultural commodities, the landlords want to enter into the agreement of fixed rent tenancy system. The tenants, on the other hand, prefer share tenancy system to fixed rent tenancy in this circumstances. In the presence of uncertainty and risk factors, the possibility of adoption of innovative measures by the tenants has not been considered by Smith and Marshall.

There are many sociological and anthropological studies on stagnation in rural economy. Among the sociological theories, the most important is that of Epstein (1967). Based on her study of rural south India, Epstein contrasts two alternative systems for organising economic activities in a rural economy: The *customary system of rewards and obligations* and the *contractual system*. The contractual system is similar to the system of market exchange. But in customary system, agreements between landlords and tenants are made by the customs. In this system, all payments made to the landlord and all duties performed by the tenants are fixed hereditarily and they pass on from generation to generation. Epstein (1967) shows that this customary system is fundamentally averse to innovations and the society with a greater dependence on the customary system is more likely to stagnate. According to Epstein (1967), if any new technology is to be introduced, incentives and efforts are required from both sides of landlords and tenants. But the tenants or workers have neither any customary obligation to provide the additional effort nor any incentive to do so, since under the customary system the landlord can not pay them more. Similarly in this system the landlords are not interested to adopt labor-saving technology because of their customary payments to their tenants and workers regardless of the presence or absence of technological innovations.

Several empirical studies have been made to identify the most critical obstacles to innovations in the agrarian economy. There seems to be some agreement that one of the most critical obstacles to innovation has been the unavailability of credit (Byres, 1972; Griffin, 1974; Newbery, 1975). According

to Griffin (1974), a large amount of initial expenditure is required for the introduction of new technology in the production process. Since the landlords in the primitive sectors are often small-scale farmers with hardly any access to credit, their ability of innovation is limited. Hence the absence of innovation in the agricultural sector is not due to the landlords' unwillingness but due to their inability. By this argument the few rich landlords with their own liquid money and greater access to urban credit are the only ones prone to innovate (Byres, 1972). This also implies that growth and equity are antagonistic in a primitive economy.

In recent years, a growing part of theoretical literature on rural development has emphasized the role of interlinked transactions existing between land, labour, credit and output markets in a poor agrarian economy. The importance of the study of interlinkage in an agrarian economy arise in their importance as both phenomena as well as factors in agrarian backwardness. Interlinkage is said to exist when the same individuals (e.g. landlord and tenant) transact with each other in two markets (e.g. landlease and credit market) or more than two markets (e.g. landlease, credit and labour markets) simultaneously. Anthropologists have often emphasized the various types of multi-faceted relationships in small face-to-face communities. Gluckman in his studies of tribal Africa has called such societies 'multiplex' where each individual plays not one but a variety of roles in interacting with fellow members of his community. Narrating his experience with the hill peasants of Orissa, Baily (1971) notes : 'the watershed between traditional and modern society is exactly this distinction between single -interest and multiplex relationships.'<sup>4</sup>

Interlocking of different agrarian markets is likely to have the following two different, but interrelated, implications : (i) This reduces the number of persons who control the 'system of market to a few; (ii) At the same time, a single tenant or labourer or producer faces the same person in different markets and thus becomes more dependent on a single person. In both ways, the interlocking of markets is expected to increase the quantum of surplus- extraction. Marxists often cite some of the interlinked agrarian contracts as 'institutional obstacles to development in a poor agrarian economy, overlooking the microeconomic rationale of the formation of these institutions. Under a set of informational constraints and missing markets, a given agrarian institution (say, sharecropping) may be serving a real economic function; and its simple abolition, as often demanded on a radical platform, without taking care of factors that give rise to this institution in the first place, may not necessarily improve the condition of the intended beneficiaries of the abolition programme. Marxists have also a tendency to equate some of the pre-existing production relations mechanically with the 'feudal' or 'semi-feudal' mode of production, ignoring how in the real world the same institution (say, sharecropping) adapts itself to the development of the forces of production."<sup>5</sup>

One of the major forms in which land and labour market relations are interlocked is of course, through the institution of sharecropping tenancy. "Costs of labour recruitment and supervision lead landowners to look for land lease contracts instead of self-cultivation with hired labour and given that ..... input is difficult to monitor without heavy supervision costs, there is a preference for sharecropping. Such a monitoring problem is, of course, more important where on account of weather and other reasons there is production uncertainty so that it is difficult to infer input from output. Uncertainty of sustained employment at a given wage rate or uncertainty of wage rate induces the labour to look for tenancy contracts."<sup>6</sup>

Sharecropping has another virtue. It often "serves the purpose of enabling a fuller utilization of the non-marketable or not easily marketable resources (like family labour, particularly female and child, given the various social and economic constraints on their market participation, and like drought animal labour, given the fact that market for animal labour renting is often rather inactive) possessed by the potential tenant family. The absence of a market in which he can sell the services of his bullocks or his

own farm managerial skills in his spare time leads the person who owns such indivisible factors to lease in land and reap the scale of economics arising out of such indivisibilities. Such leasing in can take place at fixed rent per acre but in a situation where production uncertainty is important crop-sharing may be a better contract from risk-sharing point of view.”<sup>7</sup> The sharecropping tenancy in the landlease market may, therefore, be regarded as a partial response to inadequacies or imperfections in other markets. The understanding of the functioning of traditional economies will remain incomplete if we fail to recognise the rationale of the formation of these institutions.

All the studies on interlinkage approach can be divided into two groups : the theoretical models and the empirical works. Of these, the first group is now outlined.

#### 1.4.2 Interlinkage : The Theoretical Framework

The most important theoretical models on interlinkage are built by Bhaduri(1973), Ghosh and Saith(1979), Griffin(1974), Newbery(1975), Srinivasan(1979), Bottomley(1964), Braverman and Srinivasan(1981), Braverman and Guasch(1984), Gangopadhyay and Sengupta(1987), M.R. Gupta(1987), Bardhan(1984) and A Kotwal(1985). These models focus on different aspects of interlinkages and their implications on development process.

Prof. Amit Bhaduri (1973) provided a new hypothesis to explain the stagnation in backward agriculture. In his model, it is assumed that the entire responsibility for innovations rests on the landlord and the landlord may not be interested in innovations. In a semi-feudal agriculture a landlord has two sources of earnings. He earns as rental a proportion of total output. This is his *property income*. But this is not all. The landlord also earns income by charging an exorbitant interest rate on the consumption loan provided to his tenants. This is his *usurious income*. If technological innovation takes place, the tenant's income goes up, his need for consumption loan goes down. Hence it is possible that an innovation lowers the net income of the landlord. For this reason, the landlord may not be interested in innovations. As a result, stagnation continues to prevail in the backward agriculture. This provides a simple example of interlinked landlease and credit contracts working as a barrier to technological progress. In Bhaduri's words, “Since semi-feudal landowners as a class largely maintain their economic and political control over the *kishans*<sup>8</sup> by keeping them in bondage of perpetual indebtedness, it is quite probable that they will try to restrict the level of technological improvement in such a way as not to disrupt the perpetual cycle of debt in which the *kishan* is caught.”<sup>9</sup>

A necessary condition of Bhaduri's result is that the tenant reduces his borrowings when his income increases as a result of introduction of yield-raising innovations. But Srinivasan (1979) shows that in case of unanticipated production failure (say, due to bad weather conditions), the sharecroppers are forced to render under-paid labour services for meeting their debt obligations to the landlord. In this case the sharecroppers do not lower their consumption borrowing when their mean incomes go up and thus landlord's incentive to innovate is not adversely affected.

According to Ghosh and Saith (1979), Griffin (1974), Newbery (1975) and Raj (1978), the landlord having sufficient power to exploit his tenant -borrower and to withhold innovation in the socio-economic environment of the backward villages, must have sufficient power to extract the extra gain from innovations by suitably adjusting the rental share, the interest rates and other terms and conditions of tenancy and credit contracts. Contradicting Bhaduri's observation, they argue that landlord's interest in usurious income is a weak constraint for the non-adoption of technological progress.

The 'risk based' explanation of interlinkage has been suggested by Bhaduri (1984), Basu (1983), Wharton (1962), Bottomley (1964), Tun-Wai(1958), and Raj (1979). The 'risk- hypothesis' has been used to explain interest rate differentials between the organised sector and the backward agricultural sector.

The rates of interest are seen to be very high in backward agriculture compared to the urban credit market. It has been argued by Tun-Wai(1958) and Bottomley (1975) that money-lenders in backward regime face a positive risk of default and once this is taken into account, the effective rates of interest prevailing in backward agricultural regions become very high. However, Raj (1979) points out that in the rural credit market, there exists a personal relation between the lender and the borrower. The borrower generally can not leave the village without repaying the amount borrowed from the landlord. Hence, risk cannot explain more than a very small amount of the premium on the rural interests. Raj(1979) calculates that only 10 percent of the credit advanced by the money-lenders is defaulted in the rural areas on the average.

Bottomley (1964) points out that the higher rates of interest in rural areas can be explained only by 'monopolistic nature' of the credit market. Each lender supplies credit only to those over whom he has some controlling power. The 'monopoly power' of the village money-lender actually lies in his intimate knowledge of the borrower's economic conditions, ability to repay the loan, etc. The disaggregatedness of rural credit market is responsible for multiplicity of rates of interest which are very high.

Bhaduri's model(1977) is a critique of the conventional default rate hypothesis of Bottomley (1963,1975) where high interest rates are charged to cover the risk of default. According to Bhaduri (1977), a typical borrower in the unorganised credit market has no access to organised credit because the collateral he offers is unacceptable in the organised market. This, in turn, gives a certain degree of monopoly power to the rural money-lenders to whom his collateral is acceptable. Further, the highly personalised relationship between the lender and borrower permits the lender to secure the collateral easily from the borrower in the event of a default. According to this model, only the defaulted principal is recovered from the borrower through the transfer of collateral. In contrast to this, Gangopadhyay and Sengupta (1987) argue that with so much monopoly power over the borrower, the lender could recover the whole amount of default, i.e. the defaulted principal and the defaulted interest. Lender's risk is then reduced to an irrelevant concept. It is now primarily a question of borrower's risk in the case of default. The existence of high rates of interest ensure that the borrowing peasant is caught in, what Bhaduri calls, a nexus of 'forced' commerce. The commercial exploitation of the small peasantry by merchant's and usurer's capital manifests itself in the involuntary involvement of the peasant in the market for foodgrains both as buyer and as a seller. According to Bhaduri, the commercial exploitation operates in the following fashion: "to meet his cash requirement, the peasant is forced to sell such a high proportion of his output (as "distress sale") immediately after the harvest that he is left with too little to survive till the next harvest. Consequently, he has to borrow cash at a high rate of interest to buy foodgrains from the market sometimes before the harvest (as "distress buying"). Thus, for a small peasantry as a whole, a regular cycle of distress buying and selling of foodgrains is set up."<sup>10</sup>

Kausik Basu (1983) and Pranab Bardhan (1984) have considered 'the potential risk' as the main cause of interlinkage among different markets. According to them, a market having potential risk has always a tendency to seek another market with which interlocking arrangement can be made. Two different types of risks have been explained separately by them.

Using the 'Lender's Risk Hypothesis' Basu (1983) argues that generally the lender bears the risk of defaulted loans. In order to avoid the risk, he wants to impose controlling power over his debtor. Being a capitalist producer, he employs the debtors as labourer in his agricultural farm. Then the lender converts himself to the lender-cum-employer in order to avoid the risk factor involved in lending activities and to recover the loan from the debtors.

In the 'Employer's Risk Hypothesis' Bardhan (1984) argues that the interlinked labour and credit contract is a risk-eliminating device by which the employers can avoid the uncertainty of getting adequate

labour supply at a cheap wage rate in the peak season when the demand for labour is very high. The employers generally advance credit to the agricultural labourers in the lean season on the condition that the borrowers would repay the loan by working in his farm in the peak season at lower than market wage rate. The producer thus turns to be an employer-cum-lender in order to save on his recruitment cost and to get readily available labour supply in the peak season.

Both the Lender's Risk Hypothesis and the Employer's Risk Hypothesis have been criticised by M.R. Gupta (1987). In both these models, the lender enters into the labour-cum-credit contract with the debtor in order to eliminate the risk of default. But this careful effort made by the lender-cum-employer will be fruitful, Gupta urges, only when the labour-cum-credit contract can prevent the debtor-cum-worker from leaving the village without repaying the loan. Moreover, Bardhan's Employers Risk Hypothesis will be ineffective if the rural sector is over supplied by agricultural labourers.

According to Gupta (1987), 'potential risk' is not an important explanation of the emergence of interlinked labour-credit contract. Interlinked labour-credit contract may exist even in a riskless world. Gupta has explained the presence of interlinkage with the help of 'Consumption Efficiency Hypothesis' of Leibenstein (1957). According to this hypothesis, the nutritional efficiency of the worker is a positively sloped function of his level of consumption in the lean season. Gupta therefore introduces a lag concept in consumption - efficiency hypothesis. For this lag concept, Gupta's model differs from the earlier version of consumption efficiency hypothesis in which instantaneous relationship between borrowing and consumption is assumed. According to Gupta, consumption loan given to labourers in the lean season is considered to be productive to the employer in the peak season. For this reason, the consumption of the worker in the lean season is considered to be the input in the production function in the peak season. So the employer himself controls the volume of consumption loans in order to utilize the labour input (in efficiency units) efficiently. By offering interlinked credit-labour contract, the employer earns interest income and the higher level of output simultaneously in the peak season. This is, according to Gupta, "how interlinked labour-credit contract is explained as profitable to the employer even in a riskless world ; and the basis of this explanation is the consumption - efficiency hypothesis that considers the productivity of the worker in the peak season as a function of his level of consumption in the lean season."<sup>11</sup>

All these hypotheses, namely, Lender's Risk Hypothesis, Employer's Risk Hypothesis and the Consumption Efficiency Hypothesis consider only the interlinked labour and credit contracts. Interlinked tenancy contracts do not find any place in these discussions. Moreover, in Gupta's model it is implicitly assumed that the whole part of consumption loans received by the labourers are used to purchase goods by which they can raise their nutritional efficiency. But in practical life, the picture is somewhat different from what is assumed in Gupta's model. A large part of loan taken by the labourers in the lean season is usually spent on medical treatment, social rites and rituals, etc. Among all these hypothesis, Bardhan's Employer's Risk Hypothesis has been empirically tested and proved to be valid even in a labour surplus agrarian economy.

The tenancy system which remains unmentioned in the risk-based hypotheses, has received sole importance in different models of linkage between land, labour and credit transaction built separately by Braverman and Srinivasan(1981), Braverman and Stiglitz(1982), Ashok Kotwal(1985), Braverman and Guasch(1984), Pradip Mitra(1993), Bell and Zusman(1977), Gangapadhyaya and Sengupta(1987). All these models are now discussed in turn.

Braverman and Srinivasan (1981) shows that when the landlord, through plot size variations, can force the tenant to a 'reservation' utility level (at which there is a perfectly elastic supply of tenants), it is in the interest of the landlord to ensure that the tenants gets credit from the cheapest source. In an

imperfect credit market, if the interest charged by the local money-lender is higher than the landlord's opportunity cost of capital, then for his own interest, the landlord will offer credit to the tenant at the cheapest interest cost by making credit contract with him.

It therefore follows that Braverman and Srinivasan (1981) consider only consumption loans but not production loans which are also needed by the tenants. Moreover, they do not discuss the possibility of credit-labour linkage between the landlord and the tenant.

Braverman and Stiglitz (1982), in an interesting thesis, consider the consumption credit used by the landlord as a monitoring device to extract maximum effort of his tenant. They consider a production process consisting of two periods. In the first period, the tenants are encouraged by the landlord to consume lavishly by taking loan at low interest rate from them. In the second period, to avoid low consumption the tenants are compelled to work hard to produce more for the repayment of loans immediately after the harvest. Thus by encouraging the tenants to take more loan and to consume lavishly at a certain period, the landlords are able to extract the maximum effort which is needed for maximum production.

Braverman and Stiglitz (1982) do not explain the long-standing debt which overlap many production periods. Furthermore, according to this model the loan transactions are independent of the state of nature and in every year the same pattern repeats itself. Thus Braverman-Stiglitz model explains the annually recurring pattern of advances that are automatically deducted from the harvest share but does not satisfactorily explain the long-standing indebtedness.

Kotwal (1985) argues that in the absence of an insurance market consumption loan within a tenancy arrangement can be regarded as a weather-dependent side-payment. In bad years, this component or side payment is positive as the tenant borrows, whereas in good years, it is negative as the landlord seeks repayment. Thus a sharecropping contract with an implicit consumption credit arrangement offers a tenant a share of the crop plus a side-payment, where the amount (positive or negative) depends on the state of nature. Consumption credit is, in fact, a risk instrument. It distributes risk associated with the randomness of the weather from the risk averse tenant to the wealthier landlord, without diminishing the tenant's incentive to work.

Braverman and Guasch (1984) provide an additional aspect of interlinked credit and tenancy contract in the context of production loans. In an economy with imperfect information and heterogeneous labour-force, interlinkages of credit and tenancy contracts may serve landlords as a screening device to identify more able and potential tenants. Since in an underdeveloped economy, the output share remains almost fixed at 50 percent for both tenants and landlords, such a social norm can be accepted by the landlord only when they are able to use credit instruments to screen so as to extract surplus from more able tenants. In this model, it is assumed that the landlords like to allocate their plots to the more able tenants, but the tenants' abilities are not observable or known to them. Since the difference in marginal productivity among the labourers are the result of differences in their ability in the production process, the landlords can exploit the fact to select workers by inducing the tenants to contribute some capital in the production process. Thus the tenants are compelled to accept the credit terms set by the landlords for the purchase of capital assets in order to avail himself of a plot of land from the landlord. Thus the production loan offered by the landlord act as a screening device to identify more able tenants. The sorted interest rate schedule is downward sloping reflecting the fact that the high-ability tenants being subsidized at lower interest rate for larger purchase of capital.

Pradeep Mitra (1983) argues that interlinking of labour, output and credit contracts in a rural economy may be considered as an attempt to improve allocative efficiency in the presence of 'moral

hazards' problem. The model also shows that all pareto-efficient allocations of wage and efforts require a combination of wage-cum-output sharing with consumption credit contract. Mitra explains the fact in the following way: Interlinkage system in terms of widespread use of contracts which link labour, credit and output decision among the same set of agents has been dominated in the South Asian agrarian scene. In such economies, the subsistence agrarian sector is a gamble in weather conditions and hence involve considerable amount of risk element. This hinders the smooth functioning of a market on competitive terms since the risk involved leads to great cost of monitoring and hazards with some kind of uncertainty. Under such circumstances, the landlords combine the role of supplier of credit to tenants with a provision of sharing of output and a power-owner who controls the work effort made by the tenant or labourer. Efficiency in allocation between wage and effort requires the intervention by the landlord with credit decision so as to influence the amount of effort decided to be expended by the borrower. The paper presented by Mitra shows that the public policy designed to help the rural poor by abolishing money - lending by landlords and granting tenant's access to formal credit market at competitive rates would actually be pareto-worsening condition for the landlords and the tenants.

A typical farmer in South-East Asian countries, according to Mitra, enters into a contract with the landlord to work in period 1 in return for wage,  $\alpha$  (say) and a share,  $\beta$ (say) of the output he produces. The harvest, however, becomes available in period 2, so that the farmer must borrow to finance first period consumption. The loan is paid back with interest in the second period. In a mathematical model, Mitra (1983) has proved by logic that a solution to the expected profit maximisation problem with respect to consumption ( $c$ ), effort ( $e$ ),  $\alpha$  and  $\beta$ , subject to a reservation utility constraint is pareto-efficient. In other words, when the four choice variables,  $c$ ,  $e$ ,  $\alpha$  and  $\beta$  are within the control of the landlord, they are chosen as to provide a pareto-efficient solution to the above maximisation problem. This is the unconstrained case in the sense that the landlord controls all the variables  $c, e, \alpha$  and  $\beta$ . Full interlinkage in contract therefore prevails.

Mitra also considers the constrained case when the farmers are assumed to decide on their respective effort supply, and consumption loan, so that the landlord has control over only  $\alpha$  and  $\beta$ . In this situation, Mitra has proved mathematically that where both  $c$  and  $e$  are out of control of the landlord, the pareto - efficient solution is unlikely to be achieved. In other words, the arguments for interlinking contracts involving credit and output have been strengthened by mathematical model of Mitra. Any amount of delinking where farmers are permitted to borrow freely would be pareto-inefficient.

The views expressed by Bell and Zusman (1977) are also similar to those of Mitra. Bell and Zusman looked upon interlinked rental and credit contracts as ways of internalising externalities generated by moral hazard considerations when there is production uncertainty and information asymmetries between the landlord and tenant.

Gangapadhyay and Sengupta (1987) presents a theoretical explanation for the existence of credit-product linkage in the rural economy in terms of a mathematical model. According to them, the dominant landlords in many villages are able to obtain institutional credit more cheaply than the tenants and the labourers. These landlords play the role of financial intermediaries between outside loan market and their tenants and labourers. In this situation, the landlord as a monopolist is able to establish the terms of trade between current consumption and future labour services. This imperfection in the credit market manifests itself in the form of apparently imperfect product market. It is often observed that farmers repay the loan by transferring their product to the lenders at lower than market prices. This implies that the farmers are compelled to make distress sale due to inaccessibility to the product market. At the same time, it is often observed that the same money-lender to whom distress sale is done, charges relatively lower interest rates to farmers.

In this paper, Gangapadhyaya and Sengupta (1987) argue that the transfer of crops by the borrowers to the lenders at lower than market prices does not necessarily reflect the borrower's inaccessibility to the product market. On the other hand, it is the imperfection in the credit market which manifests itself in the form of an apparently imperfect product market. Hence the distress sale does not necessarily happen due to the inaccessibility of the farmer to the product market. Removal of imperfection in the credit market will, therefore, benefit the farmer and it will help to reduce distress sale made by the small peasants. This model however considers linkage between credit and product markets only. Land and labour markets remain unmentioned in the analysis.

#### 1.4.3 Empirical Investigation

The interlinkage approach has not remained confined to the theoretical models only. Several attempts have been made to test its empirical validity by modern economists.

From the field survey on twenty six villages in Birbhum district, Amit Bhaduri (1973) observed the following characteristics of the agrarian economy in that region : (i) share cropping as the dominant form of tenancy in that area; (ii) continuous indebtedness of the small tenants; (iii) existence of two forms of exploitation, by virtue of usury and landownership, in the hands of the same landowner; (iv) lack of accessibility of the small tenants to both capital and product markets.

This type of production relation is described by Bhaduri as semi-feudal. Since landlords are more interested to earn usurious income from the indebted tenants, they hardly undertake any technological innovations in agriculture which would increase the income of the tenants' and thus reduce their dependence on the landlords. Bhaduri therefore observes that landlease market and credit market are tied up through the provision of consumption loan given to the poor tenants by their landlords. This interlocking credit-lease contract works as a barrier to the introduction of new technology.

Prodhan H. Prasad (1974) in a similar empirical work on three districts of Bihar (Purnea, Saharsha, Monghyr) observed the existence of semi-feudal relations in the production process in that region. In support of his observation, Prasad presents a profile of the poor peasants in his study region. Almost all the *semi-proletariat*<sup>12</sup> households are deficit ones in the sense that their bare minimum consumption expenditure exceed their incomes. They are thus forced to take consumption loan for big landowners at exorbitant rates of interest. The lenders do not insist on full payment even in the long-run. It often forces the debtors to sell their assets (mostly land) but rarely for complete repayment of the debt. It uses this debt obligation to force upon the direct producers a system of unequal exchanges, thereby deriving enormous economic benefits, such as cheap and assured labour for its own cultivation and better terms for leasing out land. In this way, the lender appropriates almost the entire surplus value to itself. Prasad thus concluded his observation in the following words : "Usurer's capital play a historically reactionary role which is not only responsible for low use of means of production and inimical to net investment in the agricultural sector but also responsible for widespread poverty, debt-slavery and semi-feudal bondage."<sup>13</sup>

From the study on Trivandrum Taluk in rural Kerala made by T.N.V. Kurup (1976) it is quite prominent that the rural credit market is completely controlled and dominated by the non-institutional agencies like professional money-lenders, friends, relatives, etc. The agricultural labour class is heavily indebted to the non-institutional agencies. The terms and condition of credit from all sources of non-institutional credit market are more or less the same. The rate of interest charged on the poor tenants and agricultural labourers are higher than the rate of interest charged on other classes of agricultural hierarchy. This system leads to greater attachment of wage-earning class to their respective employers compared to the other classes in rural society.

Shiela Bhalla (1976) from the study of Haryana villages in India observed the case of more complicated three-cornered interlinked exchanges. The workers take loans in the form of essential consumer goods from village shopkeepers, or grain dealers. These loans are repaid by the workers in the form of underpaid labour services given to the employer-cultivators. These employer-cultivators, in turn, repay the original creditor by adjusting his account with the original creditor (shopkeeper).

Krishna Bharadwaj (1974) is also of the opinion that the dominant rural classes are responsible for interlocking the markets through price and non-price links. Market and social power are vested in the dominant classes. Combining multiple functions, the dominant class often enjoys a superior position in more than one market simultaneously.

The prevalence of mode of exploitation that operates through a linkage between land and labour has been observed by Krishna Bharadwaj and Das (1975) in a study of eleven villages in Orissa. The interlocking arrangement among different markets, according to them, are made not by price but by direct compulsion imposed by the landlords. In the landlease market, the demand for leasing-in land by the tenants is very high compared to the supply of land. As a result the tenants are compelled to lease in land on exploitative terms. The merchant landlords very often dictate the tenants what to produce and whom to sell. Thus the product market happens to be controlled by the landlords through the landlease market. Some times, the tenants are forced to provide unpaid and underpaid labour services on the land retained by the landlords for self-cultivation. Such tied up relation between landlease and labour market inhibit the expansion of wage-employment in rural economy.

The findings of the study conducted by Bharadwaj and Das (1975) also reveal that the landlord lease out their small-sized land to the poor tenants having larger families. The poor tenants are then compelled to work hard with a view to getting their minimum needs. The landlords often provide consumption loans to the tenants in their needs against commitment of future labour supply. In certain cases, the landlord provide production loans to the tenants and compel the tenants to produce certain cash crops as directed by him. High cost of cultivation perpetuates the cycle of indebtedness to the tenants. The study however reveals that the social power is captured by the landlords by virtue of ownership of land. But the power of domination does not necessarily prevails among all the landlords over their tenants. The economically weaker sections have been dominated and controlled by the economically rich and powerful class, irrespective of relationship of landlord over their tenants. A number of non-cultivating landlords having small and medium-sized holding lease out their lands to relatively better-off tenants in the villages belonging to Zamindari Belt. On the other hand, many landlords having very small plot of land in the tribal areas leases out their land to the relatively better-off tenants and make themselves agricultural labourers. Therefore, the tenants are not always the exploited class in the rural community. While considering the nature of exploitation by the landlord over the tenants, it is therefore important to consider who leases from whom .

The study carried out by Chattopadhyay and Ghosh (1983) in the Northern part of West Bengal indicates the existence of interlinkage between tenancy and credit contracts. They argue that the interlinkage between landlease and credit markets arise due to the lack of entrepreneurial and innovative role of landlord. They supported Bhaduri's observation that credit market of the tenants is dominant by their own landlords.

Asok Rudra and Pranab Bardhan (1978) have made a large-scale survey of 275 villages in Eastern India in 1975-76 which focus primarily on the terms and conditions of land, labour and credit contracts. The findings of the study seems to be different from the results obtained from the empirical works presented earlier. The landlord, Rudra and Bardhan observe, is an important though not the only source of credit to his tenant. However, in the landlord-tenant relationship usury does not dominate as the mode

of exploitation and as such evidence from Eastern India is quite contrary to the hypothesis that usurious income from the indebted tenant hamper the landlord's incentive to encourage productive investment. Very few landlords practice money-lending as the principal occupation of his landlord. In majority of the cases the tenants reported self-cultivation as the principal occupation. A large percentage of tenants in Eastern India obtain interest-free consumption loans from their landlords. Interest-free production loans are also provided by the landlords in certain cases. Production costs are also shared between the landlords and tenants. Production costs as well as cost-sharing obviously indicate strong interest on the part of the landlord in productive investment in leased-out land. Tenants very often render certain services for the landlord. But in most of the cases they are being properly paid. Rendering unpaid or underpaid services by the tenant for the landlord is far from being the prevalent general pattern. There are very few cases where the tenant reports that the tenancy contract prohibits him from leasing in land from more than one landlord. Indebtedness of the labourer to his employer is not, however, uncommon. The casual labourer very often takes consumption loan from employer against future commitment of labour. The consumption loans to wage labourers are occasionally interest-free; sometimes interest is charged in the form of a wage-cut for a casual labour. But loans taken by the labourer, do not in general lead to long-term bondage relationships. The survey in Eastern India suggests that the overwhelming majority of tenancy and attached labour contract do not display feudalistic features. "Desperate conditions of poverty and unemployment afflict the peasant in the labour market, but not so much extra-economic coercion. The attached labourer has longer duration contract with his employer than the casual labourer, but this does not usually imply serfdom to any significant extent more than the case of tenured and salaried employees in the organised labour markets. The employee's need for job security and the employer's need for a dependable and readily available source of labour supply and not feudal subordination - provide major motivation of attached labour contracts."<sup>14</sup>

The results of field investigation conducted by Kailas Sarap (1991) in rural Orissa in 1981-82, however, do not corroborate the findings obtained by Bardhan and Rudra (1978). Sarap observed that hardly 5 percent of the tenants had obtained production loans from their landlords without interest compared to a figure of 15 percent observed by Bardhan and Rudra (1978). Fixed tenancy is the dominant form of tenancy in the area. Cost-sharing between the tenant and landlord is negligible. Sarap (1991) observed multiple exchanges existing between land, labour, credit and output markets in the study area. Credit-labour linkage is the dominant form of linkage, followed by credit-output linkages. All such linkages are exploitative in nature because they entail very high effective rates of interest.

The field-survey in Nadia district in West Bengal undertaken by Khasnabis and Chakraborty (1982), did not show any strong interlinkage between tenancy and credit contracts. Typical landlords usually do not enter into the usuary practices with their tenants, who nevertheless, are at the subsistence level. Non-landlord loan-givers (traders, money-lenders, etc.) actually dominate the rural credit market. The pattern of tenancy-credit linkage observed by the study is therefore consistent with what is observed by Rudra and Bardhan (1978).

In the study on the Northern part of West Bengal, M. Chattopadhyay and R. Bhattacharyya (1984) have examined interlinkages in a comprehensive framework of land, labour and credit relations. Two interesting findings which have come out of the study are as follows: (i) due to the backward nature of agriculture, most of the small landowners are compelled to lease out their land and join the rank of agricultural labourers and (ii) in majority of the cases the employers are not interested in providing loans to the labourers. Labour market, in the region, is thus clearly delinked from the non-institutional credit market.

In a recent study of Midnapore district, Chadha and Bhaumik (1992) have observed a changing tenancy relation in West Bengal. According to them, the tenants in West Bengal are no longer the weaker party since they are enjoying political and organisational strength with active support from the state

government. Moreover, they found no interlinkage between landlease and credit contracts although some amount of interlinkage exists between landlease and labour markets. What is more important is that the tenants do receive wages at going market rate and tenancy-labour interlinking does not lead to any extra-economic coercion nor do the tenants lose their freedom to offer themselves in free labour market. The prevailing system, according to Chadha and Bhaumik, does not correspond to feudal or semi-feudal relations.

In a very recent study on Southern Andhra Pradesh, Wendy Olson (1996) observes some interesting phenomenon. Exploitation, Olson underlines, occur through credit relations but without usury. Moneylenders and landlords are two distinct classes in her study villages and the landlords are not involved in money-lending in the same way as the professional money-lenders are. The professional money-lenders are mainly the traders and their main interest has shifted from usury to commerce. With the growing commercialisation of agriculture many more traders have come into the business. The increased the volume of credit available in the informal credit market brought the interest rates down. They lend in order to clientelise the cultivating farmers and not for usury. Though she find an interconnection between different markets in her study area, these are very different from ones conceptualised by Bhaduri (1973). When the workers borrowed from an employer, it "gave the employer priority over the workers' time during peak labour-demand periods."<sup>15</sup> However, more important for her is the finding that "the tied transactions were not necessarily more exploitative than the united transactions"<sup>15</sup> and neither did the linked contracts improve the operation of markets as believed by many neo-classical economists.

In all the empirical works done in 1970's we find interlinkage as a means of exploitation of the weaker party by the dominant party. But recent studies in West Bengal and some other states in India would reveal no strong interlinkage among agrarian markets. Even if interlinkage exists in some markets it seems to be non-exploitative in nature.

However, most of the studies on interlinkage are partial in nature because they consider only two-market interlinkages, such as credit-output, credit-labour and credit-landlease markets. Since the imperfections in one or more markets have their repercussions in all others, a comprehensive study on interlinkage should simultaneously cover all agricultural markets, namely, those for land, labour, credit and output. Our study is therefore an attempt to examine comprehensively the phenomenon of interlocking in order to obtain a full picture of these from the perspective of agrarian relations in a backward rural economy.

### **1.5 Design of Study**

Since the purpose of the present study is to investigate the nature and extent of interlinkages among different agrarian markets in a backward rural economy, Cooch Behar provides an ideal field of investigation for the present study. The district of Cooch Behar is a backward district with poor production conditions in agriculture. Agriculture in the district thus primarily remains at primitive subsistence level with low productivity.

The volume of agricultural production in any agriculture-dependent region is determined, among other things, by Irrigation system within it. Irrigation, though an essential pre-requisite for agricultural progress, is still very limited in the district. The main source of water for agricultural operations is natural rainfall, which is marked by divergence in quantity, times and continuity over the agricultural year.

Irrigation facilities at present are inadequate since only 11.72 percent of net cultivated land are irrigated during 1990-91. In the absence of major irrigation projects, farmers in the district can only depend on minor irrigation schemes developed either at state or private initiative. The types of irrigation facilities available in the area are : River Lift Installations (RLIs), Shallow Tube Wells (STWs), Deep Tube Wells (DTWs), hand-operated pumps and pucca dug-wells. In the absence of adequate irrigation facility, the farmers face serious problems in cultivation of Rabi crops and in the early sowing of pre-kharif crops. Untimely advent of the monsoon and occurrence of dry spells sometimes causes serious crop-damage in the district.

The significance of irrigation in modern agriculture has increased, because inputs like chemical fertilizer and improved seed show very high response if they are combined with adequate and timely irrigation which also helps in ultimately changing the composition of crop-mix through crop-diversification. Thus irrigation plays a vital role in the agrarian development of a district which is relatively resource-poor, having no industries and other supporting infrastructural facilities. In our field investigation the incidence of minor irrigation serves as the primary criterion for comparative selection of sample blocks. A three-stage sample design has been adopted to select of the cultivating households for the sample survey in the present study. It seems to us that the only sure way of getting sufficient variation in the nature and extent of contractual arrangements in the informal credit market is to purposively choose the blocks to be studied. Thus at the first stage, we have purposively selected two blocks, otherwise having equivalent area coverage to formal credit, marketing and agricultural trade but distinguished by one block having comparatively better irrigation facilities, since in such a choice of blocks, irrigation would be causal to intrinsic differences within the widest economic range of well-off and poor agriculturists. Dinhata-I has been selected as the block with better irrigation facilities, along with Cooch Behar-II which has lowest irrigation in the district.

### *Some Features of the Selected Blocks*

We present below information on irrigation facilities, cultivation pattern and formal credit access in the two selected blocks.

**Table 1.1**  
**Agricultural Area Statistics for Selected Blocks**

Name of Blocks	Total Area (Ha)	Percentage of Cultivable Area	Percentage of Cultivable Area Irrigated by Non-traditional Irrigation
Dinhata-I	28,692	82.87	13.62
Cooch Behar-II	36,805	51.05	4.13

Source : *Compiled from Annual Plan on Agriculture (1986-87), Cooch Behar, and District Census Handbook, Cooch Behar, 1981.*

Some indication of the extent of irrigation-related variation between the blocks may be observed in the above Table 1.1 which shows that the percentage of irrigated area in Dinhata-I stands at around three times than in Cooch Behar-II, with the percentage of cultivated area also being higher in Dinhata-I.

126689

15  
10 AUG 1999

West Bengal University  
Library  
Raja Rammohanpur

We also consider the difference in number of minor irrigation installations between the two blocks.

**Table 1.2**  
**Irrigation Installations in the Selected Blocks**

Name of Block	RLI	DTW	STW	Hand Tube-Well
Dinhata-I	11	16	1823	3085
Cooch Behar-II	10	7	1041	683

**Source :** *Compiled from annual plan on Agriculture (1986-87), Cooch Behar, and District Census Handbook, Cooch Behar, 1981*

We see that the installation of DWTs, STWs and hand-operated wells is much higher in Dinhata-I compared to Cooch Behar-II. Dinhata-I has the highest number of installations of government-operated irrigation schemes in the district (Table 1.2). As a result of higher extent of irrigation in Dinhata-I, the percentage area under HYV seeds, per hectare use of NPK fertilizer and also productivity of the major crop rice are also higher for this block compared to Cooch Behar-II (Table 1.3).

**Table 1.3**  
**Agricultural Technology Indicators in the Selected Blocks**

Name of Blocks	Percentage of Cultivated Area Under HYV Crop	Per Hectare Use of NPK (in Kg)	Productivity of Rice (kg/ha)	
			Traditional	HYV
Dinhata-I	17.82	62.15	543	1278
Cooch Behar-II	9.40	54.20	478	996

**Source :** *Compiled from Annual Plan on Agriculture (1990-91), Cooch Behar*

So far as the adoption of HYV seeds, intensity of fertilizer use, rice - productivity and irrigation facility are concerned, Dinhata-I may therefore be classified as agriculturally more developed than the Cooch Behar-II Block.

We may now take note of some of the demographic features of the selected blocks. 92.5 percent of the total population of Dinhata-I lives in rural areas whereas the corresponding percentage for Cooch Behar is about 99 percent. Scheduled Caste and Scheduled Tribe population constitute 39 percent and 0.37 percent of the total population in Dinhata - I, 36.25 percent and 0.88 percent respectively in Cooch Behar-II. Dinhata-I therefore has a higher percentage of SCs but a lower percentage of STs in its population compared to Cooch Behar-II. Agricultural labourers constitute 8.1 percent of the total population in Dinhata-I against 6.6 percent in Cooch Behar-II.<sup>17</sup>

Since the issues in our study are very much related to the access to institutional credit on the part of agriculturists, we now consider the information on institutional finance in the selected blocks, which however shows better access for Cooch Behar-II (Table 1.4).

**Table 1.4**  
**Coverage of Selected Blocks by Institutional Credit**

Name of Block	Number of Bank Branches	Population	Population Per Branch
Dinhata - I	8	1,95,374	24421.75
Cooch Behar - II	9	2,02,911	22545.67

**Source :** *Compiled from Annual Plan on Agriculture (1983-87), Cooch Behar*

The apparent reversal between blocks in terms of coverage by institutional credit may be attributed to the proximity of Cooch Behar-II to the district capital. Despite this the utilisation of institutional Credit in Dinhata-I is comparatively better, as shown in the figures for 1986-87 in Table 1.5.

**Table 1.5**  
**Credit utilisation in Selected Blocks (1986-87)**

Name of Block	(in lac Rs.)		
	Agricultural Crop Loan	Agricultural Term Loan	Total
Dinhata - I	13.40	15.20	28.60
Cooch Behar-II	11.90	12.40	24.30

Source : *Compiled from Annual plan on Agricultural (1986-87), Cooch Behar.*

Having first selected the sample blocks, at the second stage we have purposively selected 6 villages from Dinhata-I block with relatively better irrigation facilities and 6 villages from Cooch Behar-II with irrigation access around the block average, in order to preserve the intrinsic range within the data.

Of these, the 6 selected villages in Dinhata-I all display high cultivated areas under non-traditional irrigation schemes at around 30-40 percent, considerably higher than those for the Cooch Behar-II villages. Of the 12 villages that constitute the sample after the second stage, the relatively developed villages of Dinhata-I are grouped and designated as the comparatively developed Region-I, against the villages of Cooch Behar-II grouped under Region-II.

#### List of Selected Sample Villages

<i>Region I : Dinhata - I</i>	<i>Region II : Cooch Behar- II</i>
<i>1. Bara Nachina</i>	<i>1. Kachuban</i>
<i>2. Koalidaha</i>	<i>2. Haripur</i>
<i>3. Salkura</i>	<i>3. Marichbari</i>
<i>4. Chhota Soulmari</i>	<i>4. Gopalpur</i>
<i>5. Bhoram Payasthi</i>	<i>5. Takagachh</i>
<i>6. Ruerkuthi</i>	<i>6. Bareswar</i>

#### *Some Characteristics of the Selected Villages*

We now discuss some of the relevant characteristics of 12 villages selected for the purpose of field investigation. Region-I villages are all endowed with government-owned electrified DTWs. A number of subsidised community-owned irrigation schemes of electrified-type, STWs are also in operation here. Besides this, the better-off farmers have also installed diesel-powered STWs to ensure adequate water available at critical stages of paddy cropping season. Rice is the dominant crop in these villages. The traditional varieties of paddy are sown in the Aus and Aman periods. Production of HYV paddy (February-May) under the boro crop is also encouraging, this crop being characterised by high yields in an otherwise lean period. Because of irrigation production of winter vegetables is gaining popularity in these villages. However, usage of tractors is very low. But usage of power-tillers has increased considerably although wooden ploughs still predominates.

The character of production in Region-II villages is comparatively backward. Although rice is the dominant crop in these villages, its productivity is comparatively low. The production of HYV paddy is virtually non-existent due to the lack of proper irrigation facilities. Production of winter vegetables takes place but the scale of operation is very low.

Coming therefore to the third stage of the sampling procedure, a stratified random sample of cultivators has then been chosen from the local panchayat list of cultivators in each village which included both owner cultivators and tenant cultivators. For this exercise, cultivators in each village were divided into six ownership groups in terms of landholding as shown below :

Table : 1.6

**Classification of Cultivators into Ownership-Groups  
Used by the Study**

Size-Group by Ownership of Land (in acres)	Nomenclature
0	Landless
0.01 - 1.25	Sub-marginal
1.26-2.50	Marginal
2.51-5.00	Small
5.01- 7.50	Medium
7.51 & above	Large

*Note : Landless cultivators above do not operate any owned land.*

### ***Selection of Respondents***

Table 1.6 has indicated the stratification of cultivators. From the total sample-frame we selected 25 percent of cultivating households uniformly from each village, and from each stratified group of cultivators, a stratified sample of cultivator - respondents was randomly selected in proportion to the distribution of ownership holdings within the village. In addition to this sample, 40 landless labourers were also randomly selected. The overall sample used by the study therefore consists 341 households of which 301 are cultivators and 40 are landless agricultural labourers. Depending on proprietorship rights over land operated, the cultivators in our sample are classified into two categories of *pure owner-cultivators* and *tenants*. Out of 301 cultivators in the sample, 184 fall in the first of these categories and 117 in the second. The definitions employed are further clarified below :

*Pure owner-cultivators* are those cultivators who operate entirely on self-owned pieces of land. The proportion of leased-in land in total area operated by them is, therefore, zero. By our definition, pure owners are not necessarily big cultivators, even though those among them who operate smaller sized plots, may sell their labour services to supplement meagre farm income, and therefore have a dual function.

Tenants, or tenant cultivators are those who lease in the land they operate from others and may be further sub-classified as

- (i) Pure Tenants, who do not have any land of their own at all and lease in all the land they cultivate.
- (ii) Owner Tenants who have some land of their own in addition to that which they lease in.

The two categories of tenants are sometimes also referred to as *landless* tenants and *mixed* tenants respectively.

The above definitional categories can be separated from within the sample of 301 cultivator households by considering the ratio of leased-in land to operational holding or Lease-Ratio (Lr) in terms of the following formula :

$$L_r = \frac{\text{Land leased-in for cultivation}}{\text{Total operated area}}$$

$$= \frac{L_i}{L_o}$$

Where  $L_i$  = Area Leased-in for Cultivation

$L_o$  = Operational Holding

Given the values of the  $L_r$  - ratio, the cultivator categories are defined by the following relationships.

Pure Owner-cultivators	$L_r = 0$
Tenants	$0 < L_r \leq 1$
(i) Pure Tenants	$L_r = 1$
(ii) Owner Tenants	$0 < L_r < 1$

Since no lease-out operations on owned land were observed among the owner tenants, the concept of *net* lease-in of land does not occur and has been ignored.

Our sample therefore consists of three classes of households : pure owner cultivators, tenants and landless agricultural labourers. There are 184 pure owners, 117 tenants and 40 landless labourers. Among the tenants, 114 are mixed and 3 are landless tenants.

## 1.6 Structure of Investigation

As an evaluation of these issues in the empirical context of Cooch Behar, an investigation was undertaken into the character of linkage in the agrarian economy of the district. It has been noted in the preceding review that the number of micro-studies pertaining to Eastern India are relatively few. The present study will thus fulfil an important research gap in the understanding of the *in situ* agricultural condition of the region as well as the applicability of theoretical constructs to the special regional context.

A few words might be said about this context. Eastern India and the sample region within it constitute a high-rainfall and traditionally rice-growing area, which as all rice economies, is organised around the family-labour based rice-economy. One of the peculiarities of this crop-defined economy is extremely labour-intensive cultivation. Another is the peasant economy character of the production mode. Although the presence of agrarian inequalities more or less reflect land dispossession and pauperisation trends among the peasantry, the scale of such phenomena is limited by the lower range of inequalities and the extraordinarily high resource-intensity of rice cultivation. As a result, the character of agriculture in this region differs radically from the other parts of India leading also to differences in land organisation.

An added peculiarity is provided to the study by virtue of the state of West Bengal's having gone through a process of land reorganisation and reform both through implementation of very strict land-ceilings and registration of tenancy rights, the latter being known as Operation Barga (OB) launched in 1977. Recently, rising agricultural trends in the state reflect some gains from this which are widely dispersed among the agriculturists instead of being concentrated in the hand of rich farmers. The overall consequence has been a consolidation of the peasant economy mode.

Given the special features of this region, the present study will group its data and findings over the five chapters that follow. Of this, Chapter 2 of the thesis provides an introduction to the socio-economic

and agricultural background of Cooch Behar district. Chapter 3, 4 and 5 analyse the incidence-pattern of agrarian sector interlinkages among the differentiated classes of pure owner-cultivators, tenants and landless agricultural labourers in the study region, and Chapter 6 is a formal presentation of the study's findings and analytical conclusions.

The difference in the approach of this study as compared to approaches noticed in the literature is in its structure. *Ex situ* aggregative approaches which focus specifically on the operation of interlinkages tend to ignore the factors leading to their genesis. Interlinkages - no matter which part of the country they are seen in - are an outcome of internal organisational change in agrarian structure. As such interlinkages which bear an exploitative character are often conditional on the emergence and consolidation of a rural elite. Since West Bengal's recent experience has been towards dispersal rather than consolidation of land-holding and operations the character of interlinkages within its agrarian economy may have followed an evolutionary course which is distinct from more feudal regions.

However, to capture the problem in its full manifestation a study concentrating only on the operation of linked markets would prove inadequate. This is because such a study would try to isolate the phenomenon from the overall situation and thus, abstract from actual ground realities of agricultural market operations and their relation to the peasant economy and its components.

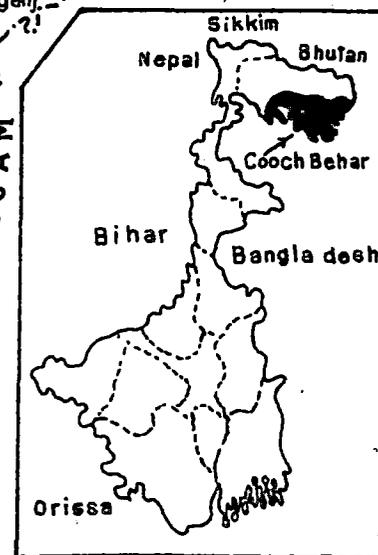
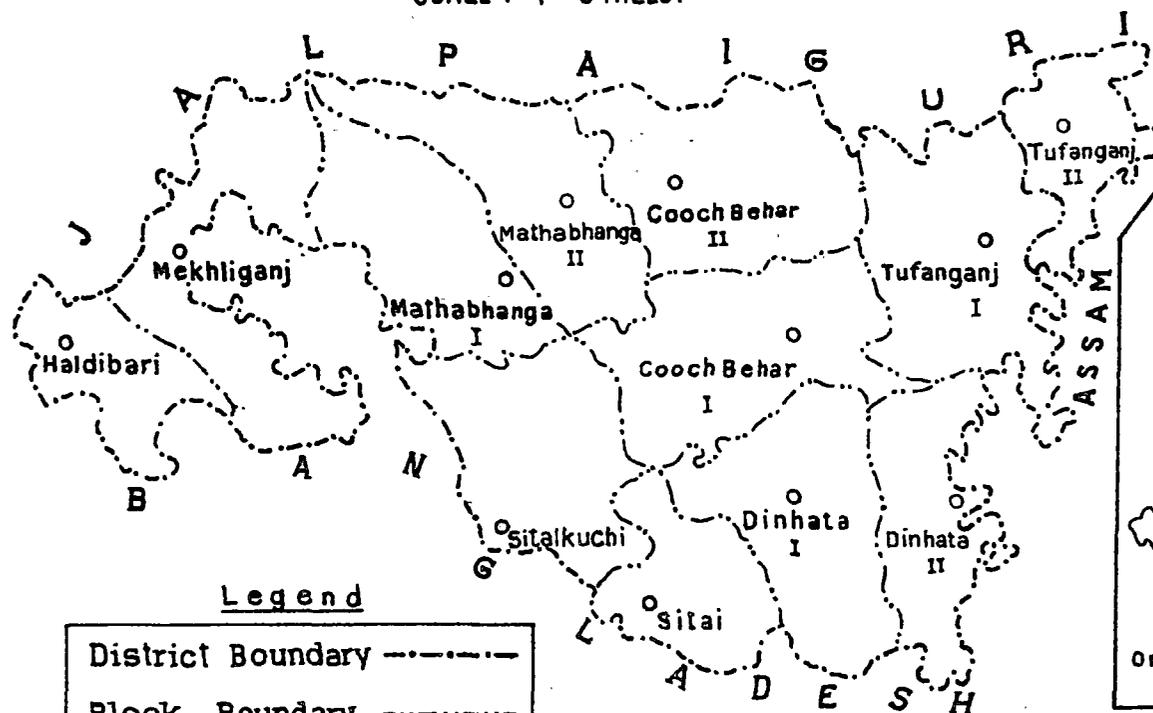
For such a reason the present study follows a disaggregated structural approach which explores the differentiation of credit-needs among rural classes, the relation of this credit-needs to the occupations and activities of these classes and the process of generation and fulfilment of specialised credit-needs. This is achieved in the study by first reviewing the credit structures and needs for the different borrower-classes and then by a detailed econometric investigation into the micro foundation of these needs and structures for a particular borrower-class. By adopting such a structure a more holistic evaluation can be made of the phenomenon of interlinkage and of the reason why it has occurred as an institution. Appreciation of the causes of this emergence also hold forth recommendations for reform of the institution in keeping with the internal character of the peasant economy, so that reform of the institution can be made with minimal dislocation of the functions it serves, and provide a possible solution to the problem of agrarian backwardness.

### Notes & References

1. Bardhan (1989) p. 237
2. cf. Thorner and Thorner (1962); Bharadwaj (1974); Bhaduri (1973, 1986); Prasad (1974), Wharton (1962); and Ransom and Sutch (1977)
3. cf. Braverman and Stiglitz (1982); Mitra (1983); Braverman and Srinivasan (1984); Stiglitz (1986)
4. Bardhan (1989), *op. cit.*
5. *Ibid*, p. 7
6. Bardhan (1980), p. 87
7. *Ibid*, pp. 87-88
8. Of the various categories of sharecroppers in West Bengal, the least privileged are a category who are locally known as *Kishans*. They virtually have no land of their own, provide little or no capital for production and typically have security of not more than one production cycle.
9. Bhaduri (1973), p. 130
10. Bhaduri (1983), p. 19
11. Gupta (1987), p. 191
12. 'Semi-proletariat' households have been defined [Prasad (1974:1305)] as : "The households who cultivate land mainly with the help of their family labour and at the same time supply labour to other cultivating classes. Some of them own some cultivable land. Quite a significant number lease in land mostly on crop sharing basis but in some cases on terms requiring payment in cash or labour services. .... A sizeable section is landless agricultural labourers".
13. Prasad (1974), p. 1308

# LOCATION MAP OF THE STUDY REGION COOCH BEHAR DISTRICT

SCALE : 1 = 8 MILES.



WEST BENGAL

### Legend

District Boundary	---
Block Boundary	.....
Study Region	■
Block Head Qtrs.	○

Figure - 1.1.