CHAPTER-1

INTRODUCTION

1.0. Introduction

India is basically a country of small and marginal farmers — almost nearly more than half of our population lives on small farms. Land continues to be of enormous economic, social, and symbolic relevance in our country, and the nature of ownership of land plays an important role in agricultural production — the way in which access to land can be obtained and its ownership is documented, is at the core of the livelihood of a large majority of the poor. Land is unequally distributed among the rural households; most of these households are either landless, or do not have sufficient land for cultivation. In this context, land transfers and pattern of cultivation need to be understood in rural areas. Apart from owner cultivation, tenancy is an important production arrangement in agriculture because the tenancy system facilitates transfer of land from owners, who are unable to cultivate their land due to economic or personal reasons, to those who want to augment their land resources to make best use of the labor and other available resources. Labor and land are interrelated in an agrarian economy (Bardhan, 1984), and the choice between these two major alternatives has been discussed extensively in the economic literature on agrarian economy for better use of resources to enhance productivity (Bhaduri, 1976; Basu, 1986).

The farm sector has two main parts, namely agricultural labour households and land owners. Agricultural labor has two alternatives: the first is to seek employment from the labor market and the second is to seek employment from the land market through transfer of land in the form of lease. Similarly, landowners have two alternatives: the first is to cultivate land themselves with or without the help of hired labor, and the second is to lease-out lands in the form of sharecropping (equal sharing of risks or uncertainty factors), or any other form of lease on fixed rent (the landowner does not share any risk or uncertainty in agricultural
production). There are two categories of leasing-out agents: the resident landowner and the non-resident landowner. The resident agents involve either directly or indirectly in tenant cultivation (decision making or sharing risks), but the absentee landowners cannot involve either directly or indirectly in the cultivation process; they simply depend on the rental income. In this context, absentee land owners are big constraints for agricultural growth, and in a narrow sense, are not of any help to the surplus extraction of economy.

The alternative choices between labor and landowners would be different across different agro-climatic regions (Otsoka and Hayami, 1992). One of the important features of agro-climatic conditions is the source of irrigation. This means that across the region, the nature of irrigation plays an important role between labor and landowners’ choice of alternatives, which include boosting up employment and wages, enhancement of production and productivity (Thorner, 1956; Otsoka, Chuma and Hayami, 1992), and to induce rural transformation (Rao, 1971). Transformation occurs where certain public provision of irrigation (canal irrigation) is available. This type of irrigation induces the use of technology in agriculture. However, there is a possibility that large landholding households (belonging upper castes) will shift to non-agricultural or service sector to enhance their income, while the landless (lower caste) households take up tenancy to occupy the large landholders’ place of cultivation in the rural economy. This study would like to identify the choices made by these households with respect to land lease market and would like to see if agro-climatic condition like irrigation has an impact on the choices made. In general one can say that leasing behavior depends on the household’s endowments, community-level endowments, in addition to technology and structure of the village economy that play an important role on the leasing behavior of the households.

1.1. There exist different views on the tenancy system:

The first is Marxist approach, whose economic theory proceeds by focusing first and foremost on class exploitation. It defines ‘class’ as a process whereby some people in society produce goods and services for others without obtaining anything but their subsistence in exchange. Marx’s framework deals with ‘class’ surplus extraction. Depend on
rental income for the land, is likely to result in adverse effects on agricultural production. Such exchanges lead to the exploitation of the tenants due to lack of intervention in the production process by the absentee landowners. Moreover, there are two types of surplus extraction: the first is in the form of fixed rent, while in the second, the absentee landowner does not share any risk and uncertainty factors in the production process. This is like a non-wage labor-based system of exploitation by the absentee landowners.

Another approach, the neo-classical, presumes that land can be treated as a factor of production. For this land, there may be any inefficiency in allocation/distribution in the market imperfections or failures, and the non-market factors, such as personalized relations, caste and dowry system, become the basis for explanations of the problems in agriculture. The essential argument is that land would not be efficiently utilized by land owners, which means that the market is not functioning to ensure an efficient allocation (transfer) between users. The neo-classical individualist market framework, however, has failed to deal with multiple exchanges or forms of labor in the rural economy (Braverman and Stigliz, 1982; Vijay and Sreenivasulu, 2005). This failure is thought to bring about extra market phenomena such as non-economic behavior patterns or ‘externalities’ such as non-economic factors that are leading to the labor market’s failure to provide employment. Both these results form the extremes in the inequality of resources and so reflect the existing pattern of land ownership. Neo-Classical Economists (NCE) proceed to analyze what such rationally-motivated individuals will do with their property as they maximize their satisfaction. They emphasize that tenancy system is the means by which the profit maximizing land owner overcomes the inefficiencies of incomplete and imperfect markets, characterized by prevalence of risk, uncertainty, indivisibility, information asymmetry, and moral hazard problems. Their main view is that the extent of tenancy is high in rural areas due to imperfect markets. But this role of tenancy as a mechanism for resource adjustment depends fundamentally on the absence or imperfection of markets for these resources. The neo-classical approach does not preclude the consideration of social concerns such as social values, norms, or the well being of other actors in its framework. Allocation, distribution and information are the most important theoretical contributions of New Institutional Economics (NIE). Institutions are formed to reduce uncertainty and risks in the production
process or human exchanges. Ronald Coase (1937) made the crucial connection between institutions, transaction costs, and the neo-classical theory, a connection which even now has not been completely understood by the economics professionals. The neo-classical results of efficient markets are obtained only when it is costly to transact in institutional economic matters. And because a large part of our national income is devoted to transactions, institutions, and specifically, property rights, these are the crucial determinants of the efficiency of markets.

An empirically testable extension of NCE model is the Resource adjustment model. They analyse leasing behaviour by a household as a process of resource adjustment under conditions of incompletely formed markets. They have emphasised the role of market imperfections in influencing the decision of a household to enter the lease market. This set of literature attempts to explain the reason for leasing-in as well as leasing-out land by the households to the absence of input markets in the village economy. The common theme of these models is that costs associated with transactions in factor markets lead to market failure or absence of trade.

1.2. Alternate Theoretical Explanation on the Existence of Tenancy System

A production system uses two inputs, i.e., land and labor with no uncertainty. If these resources are equally distributed to all households in the economy, there will be no exchanges or any need for adjustments in the market. However, if the resources are unequally distributed, there is a need for adjustments in the different rural markets. In contrast, households having excess supply of labor with respect to the optimal needs of the other resources (here, land) will have a tendency to either sell their excess labor in the ‘labor market’ or purchase land from the ‘land market’, also with an option of leasing-in land. Under these conditions, tenancy would not arise, and if it arises, the reason would be more due to non-economic / social constraints. In a standard neo-classical world with no

1 The resources identified in the resource adjustment model, which constrain the choice of an agricultural household, are animal power (Bliss and Stern 1982; Bell, 1976), labor (Pant 1983; Skoufias, 1995), credit (Jaynes, 1982), and managerial ability (Reid, 1976; Eswaran and Kotwal, 1985; Bell and Zusman, 1976).
uncertainty, no information problem, no externality, and constant returns to scale, lease contracts would not arise. This aspect has been succulently expressed by Skoufias (1995): according to him, in a world without uncertainty, perfectly competitive markets exist for inputs and outputs; all inputs are divisible, and households have identical production functions with constant returns to scale, having no need for land tenancy. A land-owning household can hire-in or hire-out all cooperating factors of production, including draught animal services and supervisors, in quantities that are optimal for the size of its landholding without any need to adjust the size of its cultivated land area. In such a setting, the incidence of land tenancy can only be explained (non-economic factors) in terms of custom or other social and historical factors. But, if the land market is incomplete, the labor adjustment can take place in the lease market; and if the labor market is incomplete, the labor adjustment can also take place in the land lease market. But if both these markets are incompletely formed, the adjustments have to take place in the land lease market. So the necessary conditions for the existence of the land lease market are the missing land and labor markets.

In addition, if the economy faces uncertainty (may be generated due to nature) there could be different types of agents based on their preferences of risk. There could be some agents who are risk averse, agents who are less risk averse, and/or agents who have a neutral/loving attitude towards risk. If there does not exist a market to trade on risk, non-market methods to trade on risk will be generated by the agents. Tenancy could be seen as one of the instruments to trade on risk when: (a) a market for risk does not exist; and (b) there are some agents who are risk averse, agents who are less risk averse, and/or agents who have a neutral/loving attitude towards risk. This has a more profound effect on the forms of contract existing in agriculture. So the generation of land lease market is contingent on the absence/incomplete formation of multiple markets in the rural economy, predominantly the land and labor markets.

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2 Indian villages can be conceived to be closed entities with minimum trade between each other. This would imply that the allocation of resources in the villages is determined by factor and the nature and existence of markets in the villages and not by the allocation of resources over villages.
The Marxian literature on the other hand visualizes land lease market as a form of contractual arrangement arising under conditions of transformation of a feudal/pre-capitalist form of organization to a capitalist form of organization. In the process of transformation, “the peasantry did once constitute a class in an estate sense, of feudal society; but it ceases to constitute a class in all contemporary transition-to-capitalism societies, for it is in the process of differentiation into the ‘the classes’ of capitalist society” (Pattnaik, 1994, p. 157). Pre-capitalist forms of organization are identified in terms of an incompletely formed labor market. “Thus, a majority of small agricultural producers may not even be completely separated from their means of production. They may still enjoy some occupancy or even ownership right to their small plot of land and may also own some of the means of the implements of production” (Bhaduri, 1984, p. 5). Under the conditions of incompletely formed labor markets, “the historically-evolved, existing inequality in the distribution of land and other resources, which implies, at any given point of time, wide variations in the effective per capita resource endowment across rural households. This is what generates relations of labor hiring, land leasing, and credit relations between these households” (Pattnaik, 1994, p. 157). In the Marxian literature the incompletely formed labor market forms the central institution necessitating the existence of the land lease market given the unequal distribution of land resource.

1.3. Review of Factors Influencing Extent of Land Lease (Resources Adjustment Model):

One of the central features of a less developed economy is the lack of complete formation of more than one market. An incompletely formed market can influence the functioning of other related rural markets. This forms the basic idea of a set of models which are called the resource adjustment models. It is considered as a simple case of a two-input (land and labor) production system. The land resource has a skewed distribution but the labor resource is not skewed. Thus, the characteristics are relatively true for countries like India. There need to be exchanges in the land or the labor market. If one assumes that the markets facilitate equalization of returns, exchanges can take place in any of the markets (land or labor), but the system attains a static efficiency. But if even one of the markets is absent, the exchanges
can take place in the other market and static efficiency is attained. This forms the core idea of the resource adjustment model. In the analysis of rural exchanges, these models assume the land market to be thin (Bliss and Stern, 1982) and by implication, resource adjustment does not take place in this market. Similarly, in case of the labor market also, it can be assumed that there exists excess supply of labor at the existing wage rate (Newbery, 1977). So the adjustment does not take place either in the land or the labor market. However, a substitute market gets generated wherein resource adjustment takes place — the land lease market. For example, households having ‘more’ land compared to labor resources become potential suppliers of land in the land lease market. Likewise households having ‘more’ labor resources in the households compared to the land resources become potential demanders of the land in the market. If the number of inputs is increased, assuming that the market for these inputs does not exist, then resource adjustments are also made based on these missing markets.

The resource adjustment model can explain an agricultural household’s decision for leasing-in land. The model shows that leasing decisions of rural households are closely related to their land, family workers, bullock endowments, adjustment difficulties experienced by bullocks, and family labor, which necessitate adjustments in farm area by way of leasing (Taslim, 1992). This becomes important when the market for some of these household resources is either non-existent or functions imperfectly. Imperfection in markets, notably those of land, wage labor, and credit is a commonly observed characteristic of less developed agriculture. For example, wage labor is not always available on equal terms to the richer and poorer households or from peak to slack seasons. The common theme in this literature is the existence market imperfections or the absence of trade on family resources. Thus, households having surplus labor, bullocks and agricultural instruments in relation to their landholdings are the owners who lease-in land, while households with excess land in relation to their factor endowments lease-out their land, given that the land and labor are incomplete. In this context, land tenancy has a significant economic role, since it improves the allocation of resources in the presence of constraints imposed by the imperfectly functioning market in labor, bullocks and instruments.
Recent literature has pointed to technical know-how (Reid, 1976), managerial ability (Bell-Zusman, 1979), bullocks (Bliss and Stern, 1982), and family labor (Pant, 1983) as examples of factors due to which markets are highly imperfect. An effective way of gaining access to such factors is to offer a self-monitoring (incentive) contract to the factor owner, involving him in the production process. The factor input is thus available only as a package deal with the factor owner’s time. However, the self-monitoring contract does not have to be a share contract. The landlord could gain access to the tenant’s supervision ability or to his bullocks by offering him a fixed rental contract. These models describe the alternate institutions due to which Resource Adjustment Models (RAM) such as managerial ability (Bell and Zusman, 1976; Reid, 1975; Eswaran and Kotwal, 1985), credit (Jaynes, 1982; Kochar, 1982), animal power (Bliss and Stern, 1982; Bell, 1977), and family labor (Pant, 1983), are adopted. Jodha (1981) in his empirical evidences shows that the labor hire market operates more smoothly than the bullock hire market. Thus, tenancy is primarily an out-growth of bullock power adjustments. Some households seem to lease land for reasons of excess or shortage of family labor in relation to owned land or because of difficulties in hiring daily labor.

One of the early models in this frame of analysis was by Bliss and Stern (1982). In this model, they assume that the market for bullock power is also incompletely formed: “The rental market for animal power which functions badly, if it functions at all, is particularly vulnerable. There are two reasons for this market failure: (1) rental animals may be overworked or otherwise mistreated, because the renter has no stake of capital and will therefore try to maximize current services; and (2) animals are often used in time bound operations; usually that everybody in a village needs bullocks at the same time. Now, if the bullock market fails, the other two input markets must kick in, and so it is not surprising to find that the operational distribution of land to follow the ownership distribution of bullocks.” (Ray, 1998, p. 413).

Nabi (1985) has basically discussed Bliss and Stern’s tenancy model in Pakistan’s context. This model attempts to explain how much land a cultivating household leases-in or leases-out in terms of imperfect markets for family labor and bullocks. He found that there are
considerable inter-village variations in the performance of the model. About 77 per cent of the variance in the net land leased in the village is explained by land owned value of bullocks and family labor. Greater availability of farm family labor in relation to own land motivates a large section of poor tenants to enter into tenancy contracts. Constrained by a limited land base of their own and uncertain labor markets, these households find no other option but to enter into tenancy arrangement if only to ensure more effective utilization of their surplus labor. This brings us to the conclusion that in a land-scarce but labor-abundant economy, tenancy serves to equalize the land-labor ratio and persists as long as the ratio varies among them.

Bliss and Stern found this empirically, while attempting to explain tenancy in a UP village (Palanpur). Their argument is that adjustments of household resources including family labor, draught animals, and owned land take place through leasing-in land (NRI, which means Net Area Leased-in) in the village. However, this model was criticized by Ravi Srivastava (1989) in his field study analysis in UP. He expressed several serious problems with Bliss and Stern’s model. Firstly, they assumed in their model that there is an absence of market for draught animals in the village. They showed that it is one of the causes for leasing-in land. However, Srivastava does not agree with their argument: He rules out the short-term adjustments through sale/purchase, as large proportions of households buy/sell draught animals each year; the small farms often sell their bullocks to traders at the end of the main season, and again purchase them when they require their services; further, there is also a well-developed tractor market in the villages. Consequently, he expressed that there is a weaker relationship of leasing-in land due to draught animals. Secondly, Bliss and Stern include in their model a Family Labor Variable (FLV) which stands only for male workers in agriculture. However, family labor simultaneously influences other markets such as non-agricultural and seasonal migration, while the amount of leased land depends on choices in the labor market (agriculture, non-agriculture or migration). Furthermore, his field evidences pointed out that there was an asymmetry between the upper caste and other caste households in terms of female labor — women in the former group are rarely involved in field operations. Finally, he does not agree with Bliss and Stern’s regression analysis of the coefficient of land measuring the responsiveness of leasing to the desire to cultivate a
certain area (DCA) to owned land (LAND). According to him, it should be negative, and less than one. This is not intuitively obvious from the form of the regression model. Its value would be positive if there is significant ‘reverse’ tenancy. Moreover, the LAND, as an independent variable, is not relevant in the Bliss and Stern model. Ravi Srivastava pointed out that the model offers a plausible but weak explanation of leasing-in decision of the rural households.

1.4. Schematic Issues Related to Forms of Lease

In the literature on tenancy there are three main issues that are addressed. The first relates to the question of the conditions for the existence of tenancy as forms of organization of production in agriculture. In an economy with complete formation of markets, or one with capitalist form of organization of production, lease is not a contractual form chosen by individuals. The latter is related to the rationality for the existence and persistence of one form of tenancy contract, namely shared tenancy. Second, a related question is the remarkable stability of 50:50 sharing in shared tenancy. This form of tenancy has a remarkable persistence over time as well as space, though it was identified to be inefficient by analyses from Adam Smith to Marshall. A somewhat formal presentation was in a footnote in the treatise written by Marshall (1961). In the literature, this is identified as ‘Marshallian inefficiency’. The third issue includes the factors influencing the extent of land under tenancy. The studies in the process of responding to these issues also try to answer the question of the conditions such as: when will the extent and forms of contract change?

The major debates on tenancy exist around the rationality and existence for subsistence of the poor. Sharecropping represents a form of contractual arrangement wherein the output is divided on a pre-determined sharing rule. The 50:50 sharing of output between the land owner and the tenant is a general arrangement. The rationale of 50:50 sharing rule which has existed over time and space is also a puzzle for economic theories. Although, there are also other forms of land lease contracts in agriculture, such as the fixed rent in kind (a fixed proportion of land is provided to the landlord) and fixed rent in cash (a fixed amount of cash is paid to the land for leasing-in of one unit of land), there can also exist rent-free contracts
wherein the tenant may not pay any rent but has to provide ‘other’ services to the landlord. In an analysis at a point of time, i.e., static sense, sharecropping is said to be inefficient, but it does exist. The existence is not only over time but also over space. This generates a puzzle for the theorists to explain the basis for the existence of this form of contract which looks to be inefficient. This puzzle has generated a massive response in the theoretical literature. There are some very good surveys on this issue, namely the survey made by Quibria and Rashid (1984) on sharecropping. However, many studies like Reid (1975), Roumasset (1979), Newbery and Stiglitz (1979), Hsiao (1975), and Mazumder (1975) have conducted good theoretical surveys on sharecropping. This section attempts to present a bird’s eye view of the literature on this area.

The most important aspect of studying tenancy literature is the rationality of existence of the two tenancy forms, i.e., sharecropping and fixed rent. The fixed rental contract is said to promote efficiency in the static sense, whereas sharecropping tends to be regarded as a puzzle in economics. The puzzle of sharecropping originates from the incapability borne in ordinary economic analysis to explain certain aspects of its existence as an institution. Sharecropping is an economic institution of considerable age and has drawn comments from economists at least since the time of Arthur Young and Adam Smith in the late eighteenth century.

According to Adam Smith, sharecropping does not provide adequate incentives for investment for the individuals involved in the exchange. The fact that one-half of any increased crop would be taken by the landlord, is an effectual bar to all agricultural progress. It is curious to note that until the time of Marshall, it was not clearly recognized that the argument which showed that the share-tenant would be an ‘inadequate improver’ also sufficed to show that he would be an ‘inefficient cultivator’. Actually, it will be the higher of the market wage and the utility of leisure. Marshall probably realized this, for he refrained from using market wage as the opportunity cost of labor. Cheung (1969) fails to appreciate this and to that extent his interpretation of Marshall is not unconditionally valid. In order to focus on the problem being considered, he assumed that market wage is zero, so that opportunity cost is the marginal utility of leisure. The supply curve of labor was derived
by optimizing the leisure-earnings space. Figure 1.1 shows the tenant’s marginal earnings curve (Marshall calls this the tenant’s share curve). We see that the supply curve of labor does not represent the opportunity cost of work.

Figure 1.1: Tenant’s Share Curve

Figure 1 explains Marshall’s analysis of shared tenancy. He assumes that a landlord gives a plot of land to a tenant on the agreement of sharing the output. The X-axis in the figure shows amount of Labor, while Y-axis shows the Output. He assumes that labor is the only factor of production and the tenant is not allowed to lease-in more land. PM shows the marginal product curve of labor. EM(1-r) MPL is the marginal product of labor, and is retained by the tenant after sharecropping. The wage rate is exogenously given at W. If the landlord cultivates his own land using hired labor from the labor market directly, then he will require OL units of labor to make a profit of PBAE. The opportunity cost of labor is fixed at W wage. If the landlord gives land to the tenant for cultivation, the tenant will use OL units of labor. He will have a gross income of OEAL and the landlord will get a rent of PEAB. If the tenant sells OL units of labor in the labor market he would have earned
WALO. Hence his net income is EAW. So if the landlord engages in sharecropping, his rental income is PBAE, which is the difference between the total output OPBL and the rental income. On cultivating the land with the help of wage labor, his rental income is PCW. As PCW is greater than the PBAE, it is always profitable for the landlord to engage in wage cultivation rather than in sharecropping. This is seen as a puzzle in the theory of the rationality for the existence of sharecropping contracts in agriculture.

Johnson’s (1950) insightful article provided three solutions to the inefficiency problem, each of which has been subsequently formalized by other authors:

The first was to enforce the desired intensity of cultivation on the tenant (this was later modeled by Cheung (1969) in his much celebrated study). He pointed out that a sharecropping tenant decides how large a farm he will lease. The economists would say that the amount of land to rent was determined by the point at which the marginal return from the last acre of land rented equaled the rent. Presumably, he continues to rent land until the value of the marginal product of the last acre rented is zero. “When a tenant adds an additional acre of land, its marginal cost is one-third the value of its marginal product. The renter will equate his marginal return from the land to the marginal cost of the land. This equality will exist only when the value of the marginal product is zero; for it is a simple truism that a third of a variable can be equal to the value of the variable only when the variable has the value zero. Consequently, the tenant can reach a position of maximum profit only when an additional unit of land adds neither to his costs nor to his receipts” (Johnson, 1950, p. 115).

The second was to insist on short-term leases which would enable the landlord to rent out his land (this route to efficiency was formalized by Newbery (1975)). But Johnson expressed that the share contracts inevitably lead to misuse of agricultural resources, i.e., low crop yields and meager land improvement. Though the sharecropping contract has misused agricultural resources, the nature of the deviations from optimum is quite subtle. Consequently, the sort of adjustment the landlord and the tenant have made in their mutual relations to make sharecropping tenancy is reasonably good. The third was to split the expenses of cultivation in the same proportions as the rental ratios, thus making the tenant’s
‘internal’ price of an input equal its ‘external’ market price. In a first-best world, this ‘equal share’ rule implies an efficient allocation of inputs (see Heady (1947) and Adams and Rask (1968)).

The Cheungian argument in favor of the efficiency of sharecropping is to show the Pareto-efficiency of sharecropping. Unlike traditional analysis, however, he views the problem from the landlord’s side. Cheung’s (1969) work challenged the ‘traditional’ view that sharecropping suffered from allocation inefficiency. This approach argues that landlords stipulate the intensity of labor on per unit area so that they have a sufficiently inexpensive and effective monitoring ability to ensure that their stipulation is indeed fulfilled. The contracts offered by the landlord would then stipulate the plot size, the tenant’s share, and the intensity of cultivation. A conclusion of this analysis is that productive efficiency prevails as the intensity of cultivation and the marginal products of factors of production are equated across lands that are owned or rented, whether on a sharecropping or a fixed-rent basis. This approach was extensively developed by Newbery (1974, 1975, and 1977) and Stiglitz (1974). Their main argument was that apart from the rental share, sharecropping contracts, in practice, do specify input intensities. They offered a model subject to the constraints that the tenant gets at least his alternative earnings as a wage laborer (with the wage exogenously given), the landlord decides on the plot size, the rental share, and the labor intensity of tenant cultivation. The resulting ‘competitive’ equilibrium is easily shown to be indistinguishable from the fixed rent or wage-labor modes in its allocative and distributive outcomes. Cheung’s work along with a number of neo-classical economists such as Sutinen (1975), Hsiao (1975), and Lucas (1979) have evidences clearly against Marshall’s inefficiency argument. However, Bardhan and Srinivasan (1971, 1974) and Jaynes (1982) raise serious objections against Cheung’s formulation as well. Bardhan and Srinivasan show how sharecropping could be represented as an inefficient system while assuming that the work decision is taken by the share tenant. Bagchi (1973, 1975, 1976 and 1982) criticized the models of both Cheung, and Bardhan and Srinivasan (1971) as they are based on unrealistic assumptions of competitive models.

Just as there is no unanimity of opinion among the theoretical contributors on the shared tenancy-efficiency issue, a clear polarization is also visible among the scholars conducting
empirical studies. Thus, while studies such as those of Bharadwaj (1974), Bell (1977), Hossain (1977), Jabbar (1977), Bagi (1981), and Shaban (1987) provide empirical support to the Marshallian inefficiency hypothesis; Vyas (1970), Rao (1971), Zaman (1973), Chakravarty and Rudra (1973), Dwivedi and Rudra (1973), Huang (1975), Bliss and Stern (1982), Nabi (1986), and Rudra (1992) supported Cheung’s equal efficiency argument. Cheung’s rationale for the existence of sharecropping relied on its alleged superior capacity to permit risk-sharing between tenants and landlords. The wage system imposes all risk on the landlord, whereas in fixed rent arrangement the tenant bears the risk. However, it has been shown that this risk-sharing advantage of sharecropping is spurious since the same result could be attained by a suitable combination of the fixed rent and wage labor system, provided risk sharing is replicated without imposing technological (scale) diseconomies (Newbery, 1977). Cheung’s ‘equivalence’ theorem thus leaves his approach as generalized with no rationale for sharecropping.

Stiglitz (1974) has argued that sharecropping was an institutional arrangement designed both to share risk and to provide incentives in a situation where monitoring effort was costly. The shared tenant in the Bardhan and Srinivasan (1971) model has the option of leasing-in land to cultivate with his own labor or working as wage labor in some alternative employment. Johnson (1950) had pointed out the implausibility of the last implication of the Marshallian view that sharecropping tenancies are as efficient in resource use as owner-cultivation and fixed rent tenancies. He hypothesized that landlords would seek to redress this situation by a variety of means including direct ‘enforcement’ of the optimal input intensities and the threat of eviction implicit in short-term leases. Although Cheung hinted at the risk sharing advantages of sharecropping, it was Stiglitz (1974) who first modeled the risk sharing advantages of sharecropping in terms of a general equilibrium model. Stiglitz also puts forward the view that the rationale for the sharecropping system lies both in its incentive effects and risk-sharing features.

However, several other explanations have also been offered. Reid (1973, 1976, 1977) believed that the rationale for sharecropping lies in its incentives for co-operation between the landlord and the tenant to maximize the efficiency of agricultural production. Newbery (1977) argued about rural labor market failure to guarantee full employment at a constant or
predictable wage level, and sharecropping contracts are the only devises that mitigate the effects of labor market uncertainty.

Several theoretical and empirical arguments are provided to explain the existence and variation of tenancy. There are two arguments on shared tenancy: one is an inefficient form of contractual arrangement because share-tenant is an inadequate improver (Marshall, 1950); the second argument shows that under certain realistic assumptions, sharecropping works efficiently (Cheung, 1969). These two arguments have given rise to two sets of explanations for the existence of shared tenancy: the first is the certainty model and the other is the uncertainty model. In case of certainty model, the existence of sharecropping is explained in terms of ‘effort’ of labor being observable by implication under conditions of excess supply of labor (Cheung 1969). The second set of model explanation is based on risk sharing between the two agents (Stiglitz and Newbery, 1979).

The first approach to molding a sharecropping contract assumes a prohibitively high cost of monitoring of the tenant’s activities. This leads to the well-known indictment of productive inefficiency of sharecropping, based on the presumption of the tenant’s application of less variable inputs to the rented land relative to alternative contractual arrangements. Such an approach, often called Marshallian analysis, characterizes the papers of Bardhan and Srinivasan (1971), Bell and Zusman (1976), Braverman and Srinivasan (1981), Braverman and Stiglitz (1982, 1986), and Shaban (1985). At the centre of the theoretical debates about sharecropping has been the alleged inefficiency relatively compared to wage labor and fixed rents. Following the so-called ‘Marshallian’ view, some authors maintain that the sharecropper secures only a fraction of output from marginal returns to variable inputs including labor, which will only be a fraction of their respective marginal products. He would therefore employ less of these inputs to that of a fixed rent tenant or an owner-cultivator. At the same time, the tenant will seek to increase leased-in area, as long as its marginal product is positive, as such extension always yields him positive returns.

Recently different literature issues have been found with various influencing factors such as cropping patterns, irrigation, risk and uncertainty, factor markets, and technology. These
attempts have been made to explain the observed variations in tenancy contracts in terms of variations in cropping patterns, uncertainty, and the working of rural factor markets (Rao, 1971; Bardhan, 1977). In order to explain why sharecropping exists; a second source of imperfection becomes an essential theoretical requirement. This imperfection could arise from other sources of uncertainty (for example, risk factors in the labor market), in the form of an incentive effect, transaction costs, or imperfections in the capital market. Thus, the conditions which explain the existence of sharecropping, in general, do not allow production efficiency to prevail, and push the models to the realm of second best.

Reid (1977) envisages both landlord and tenant as contributing un-marketed resources in a sharecropping arrangement. His view is that sharecropping is a partnership arrangement in which both agents have incentives to self-monitor. The contracts of such nature arise to mitigate morally hazardous behavior on the part of both agents—a phenomenon as yet unexplored in the literature. If all the input quality is monitored by a single agent, he becomes the sole residual claimant—in a wage contract it is the landlord, and in a fixed rental contract it is the tenant. The different contracts thus reflect different techniques of combining un-marketed productive inputs. The choice of technique depends on exogenous parameters such as the endowment distribution across the classes of factor owners and the prevailing production technology. The equilibrium contractual structure emerges from optimizing decisions of both landlords and tenants in a given environment.

Contractual forms may also be linked with uncertainty where landlords are unable to make use of their tenant’s abilities. Rao (1971) argued that sharecropping would be the preferred arrangement under conditions of relative certainty while fixed rent would be preferred where the tenant’s (entrepreneurial) response to uncertainty is an important but unobservable determinant of production performance. Fixed rent permits the tenant to capture the returns to his entrepreneurial skills; a mix of contract types may emerge to serve as screening devices. As they acquire experience, workers move up from wage work to sharecropping, then to fixed rent tenancy and finally to landownership (Reid, 1979). Sharecropping will be lower if there is smaller technical progress in the sharecropper’s farm
than in the fixed rent tenant’s farm due to say unequal access to irrigation facilities (Bardhan, 1976).

Hallagam (1978) projects sharecropping contracts as screening devises in a market where prospective tenants are endowed with different amounts of entrepreneurial abilities. Under this situation, the individuals with the greatest entrepreneurial abilities choose to be fixed rent tenants, those with no such ability become wage earning workers, and the intermediate cases become share tenants. He analyzed the differences between input and output intensities per unit area on owned and leased plots of the same household. These differences were found to be sizeable and significant for mixed sharecroppers. They can be classified into four sources: differential irrigation pattern on owned and leased land; plot value differences; differential soil quality; and an effect that can be attributed to the contractual arrangement.

Bell (1977, 1986) and Bliss and Stern (1982) however, hold the view that sharecropping exists because of the indivisibility and imperfect marketability of some factors of production (draught animals, family labor, and so on). Sharecropping enables utilization of such factors and both the landlords and tenants gain eventually. The view that sharecropping makes the utilization of non-marketable input factors possible gets corroborated from the studies by Pant (1983), Nabi (1985), and Birthal and Singh (1991).

1.5. Context of the Present Study

Empirical evidence suggests that the regions with high irrigation also witness higher extent of land under tenancy. The macro-level evidence from NSS data for three rounds: 37th Round, (1981-82), 48th Round, (1991-92) and the recent 59th Round, (2002-03), have brought out detailed information on the leased-in area of land in 15 major states in India. They show that the extent of leased-in area is high where the irrigated area is high in different states in India. Similarly, micro-level studies have also revealed that recently, the land committee that was constituted by the Government of Andhra Pradesh, under the
chairmanship of Sri Konero Ranga Rao, reported that more than 50 per cent of the cultivable lands are under tenancy system in Coastal Andhra Pradesh (Land Committee Report, 2006).

Empirical evidences also show that irrigation has led to the displacement of shared tenancies by fixed rent contracts. Bhardwaj and Das (1975) reported that fixed cash rentals were displacing the traditional sharecropping in Orissa, especially in irrigated areas where High Yielding Varieties (HYVs) are extensively cultivated. Bardhan and Rudra (1980) also reported an increase in the incidence of fixed rent tenancies for certain crops in some areas. However, under rainfed situations, sharecropping seems to be a preferred arrangement (Rao, 1971). Fixed money/kind is the most dominant form of lease in the relatively developed states such as Punjab and Haryana (Hque, 2000). A few studies tried to look into the relationship between irrigation and land lease market. The tenancy institution was found to be predominant only in the irrigated areas, “the percentage of area under tenancy will be higher in areas where there is larger irrigation” (Bardhan, 1979, pp. 1508). Further, field studies by Narayan and Nair (1994) and Subramanyam (2000) have shown that there is a significant positive relation between the extent of leased-in land and irrigation.

Irrigation could be of two types: private irrigation (wells and tube wells) and public irrigation (tanks and canals). The study proposes that the extent of leased-in land and forms of lease may differ by the nature of irrigation— the extent of leased land would be higher where there is public irrigation, and there may be high fixed form of lease, while in the private irrigated areas, the extent of lease is low due to uncertainty of yield and high cost of cultivation. Moreover, in case of private irrigation, access to water depends on the investment made by the farmer. Hence, all cultivators may not get equal access to water for irrigation; and this leads to high variability in yield. Also, in private irrigation (wells and tube wells) the extent of lease is very less due to high variability in output.

More particularly, the research on irrigation has identified predominantly two major effects on the outcome of agricultural production: On the one hand it increases the yield per hectare, and on the other hand it reduces the variability in yield. However, yield is stagnant due to the presence of landless laborers who enter into land lease market as tenants, and the small farmers are at a disadvantage because of their low investment capacity as well as non-
viability of holdings. Moreover, modes of irrigation are also varied in terms of patterns of land ownership and control. When irrigation is privately owned the landless and small peasants cannot enter into land lease market and hence, the extent of lease may be less in villages having private irrigation. On other hand, assured irrigation may change the agrarian relations, but in public irrigated areas, yield would not increase as it has become stagnant.

There are many causes for stagnant productivity; and the study will try to focus on one of the major reasons for the landless laborers to enter into land lease market as tenants in canal irrigated areas: they are incapable of enhancing productivity or introducing technology for agriculture growth. In case of public irrigation, all farmers will receive water for irrigation, which leads to low variability in yield. This is expected to benefit all classes of farmers in the command area who have access to irrigation without any substantial costs for the access. However, though there is equal access to irrigation, land distribution is unequal, and the agrarian structure in public irrigated areas changes with the type of owners. A matter of concern is that the number of owner cultivators is decreasing, as more and more farmers are shifting to non-agriculture activities without shredding their ownership but by becoming absentee landowners.

1.6. Objectives of the Study

The present study attempts to analyse whether there exists any relation between the extent of land under tenancy and nature of irrigation in different agro-climatic conditions in the state of Andhra Pradesh. The analysis is conducted at two levels: at the state level and at village level. The study presents trends on

1) To find out the trends on the extent of leasing-in/out of land and the terms of lease during 1981-82, 1991-92 and 2002-03 across 15 major states in India, and to analyze whether irrigation and different sources of irrigation have any association with the extent of leased-in land and the terms of lease.
2) To study different agro-climatic villages and find out the extent of leased-in/out land, and the terms of lease in different study villages.
3) To examine the households and village resources, and their influence on the extent of leased-in/out of land and the terms of lease in the different study villages.
4) To identify the conditions under which the landless labor can enter the land lease market as tenants.

1.7. Hypothesis
The major hypotheses sought to be verified in the study are:
a). The extent of land under tenancy is high in assured public irrigated areas and it is less in unirrigated areas. Fixed tenancy is more in prevalence in canal irrigated areas.
b). Pure tenants and absentee landowners are high in canal irrigated areas.
c). Household resources like land, animal power and agricultural implements are not the determining factors in leasing-in land in canal irrigated areas.
d). Value of output per acre certainty has a positive impact on the extent of land under tenancy.

1.8. Methodology

1.8.1. Database
For the purpose of the study, data collected from two sources, secondary and primary. Secondary sources of data were from National Sample Survey Organization (NSSO) for 15 major states, each during three different periods. Primary data was collected from nine different agro-climatic villages which represent two regions, i.e., Coastal Andhra and Telangana.

a) Secondary Sources
The major sources of data on leased-in and/or leased-out land and terms of lease were collected from agricultural censuses and the NSSO. For understanding the tenancy system across the states in India, we collected data from three rounds of NSSO, i.e., the 37th Round (January and December, 1982), the 48th Round (January and December, 1992) and the 59th Round (January and December, 2003). The NSS has been regularly conducting land holdings surveys every ten years. For the purpose of the study we used data from *Land and Livestock Holdings* for three rounds in 15 major states in India. The recent survey on land and livestock holdings carried out in the 59th Round (January and December, 2003) of the National Sample Survey (NSS) was the sixth in the series of similar surveys conducted so
far by the organization, and the third of a series of four reports to be brought out on the 59th Round of land and livestock holdings survey. For the purpose of the study we used “Livestock Ownership across Operational Land Holdings Classes in India, 2002-03”, and “Some Aspects of Operational Landholdings in India, 2002-03”.

Table-1.1: Sources of Secondary Data

<table>
<thead>
<tr>
<th>Source of Data</th>
<th>Title of Survey</th>
<th>Year</th>
<th>Round</th>
<th>Report Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>National Sample Survey Organization</td>
<td>Some Aspects of Operational Landholdings in India</td>
<td>1981-82</td>
<td>37</td>
<td>331</td>
</tr>
<tr>
<td>(NSSO)</td>
<td>Land and Livestock Holdings (Operational Landholdings in India)</td>
<td>1991-92</td>
<td>47</td>
<td>407</td>
</tr>
<tr>
<td></td>
<td>Some Aspects of Operational Landholdings in India</td>
<td>2002-03</td>
<td>59</td>
<td>492</td>
</tr>
</tbody>
</table>

In the land and livestock holdings surveys of the NSSO, two classifications of holdings are made: ownership holdings and operational holdings. Household ownership holdings and operational holdings were identified by interviewing the sample households. Data was also collected on the livestock and agricultural implements owned by households, and the present study used the data on ownership, operational holdings and the extent of irrigation from different sources in rural areas, along with the data on land owned, land leased-out, land leased-in, and types and terms of lease for three rounds, i.e., 1981-82, 1991-92 and 2002-03.

b) Primary Source

A few villages were selected from different agro-climatic zones in Andhra Pradesh, in order to analyze critical factors in the land lease markets. The study villages were chosen from two different regions — Telangana and Coastal Andhra, expecting that agro-climatic conditions and village structure would influence the land lease market. Information was also collected on household resources, land, labor, and village, from the household heads through structured and semi-structured questionnaires.
Table-1.2: The Sources of Primary Data, Selected Villages and Households under Survey

<table>
<thead>
<tr>
<th>District</th>
<th>Mandal</th>
<th>Village</th>
<th>Total Number of Households Surveyed in the Village</th>
<th>Major Sources of Irrigation</th>
</tr>
</thead>
<tbody>
<tr>
<td>West Godavari</td>
<td>Veravasaram</td>
<td>Mentipudi</td>
<td>90</td>
<td>Canal</td>
</tr>
<tr>
<td></td>
<td>Ganapavaram</td>
<td>Kothapalli</td>
<td>208</td>
<td>Canal</td>
</tr>
<tr>
<td></td>
<td>Koyyalagudem</td>
<td>Seethampet</td>
<td>170</td>
<td>Wells</td>
</tr>
<tr>
<td>Mahabubnagar</td>
<td>Atmakur</td>
<td>Arepalli</td>
<td>338</td>
<td>Canal &amp; Tanks</td>
</tr>
<tr>
<td></td>
<td>Bhootpur</td>
<td>Tatiparthi</td>
<td>216</td>
<td>Rainfall</td>
</tr>
<tr>
<td>Karimnagar</td>
<td>Dharmapuri</td>
<td>Chinnapur</td>
<td>216</td>
<td>Canal &amp; Wells</td>
</tr>
<tr>
<td></td>
<td>Dharmapuri</td>
<td>Nagaram</td>
<td>171</td>
<td>Wells &amp; Tanks</td>
</tr>
<tr>
<td>Srikakulam</td>
<td>Jalumuru</td>
<td>Jonanki</td>
<td>151</td>
<td>Tanks</td>
</tr>
<tr>
<td></td>
<td>Elcherla</td>
<td>B.Koduru</td>
<td>177</td>
<td>Wells</td>
</tr>
</tbody>
</table>

1.8.2. Selection of the Villages

Agrarian institutions, including the market institutions, have a tendency to undergo changes and transform themselves; and these changes are associated with the level of development in the region and or sub-region. This is more so when the total economy is not well integrated within itself. Possibly, it is common to note the existence of the regions, namely, Telangana, Rayalaseema, and Coastal Andhra, which can be seen as an illustration of non-integrated regions. (see location of the study villages below).
Map- 1.1: Location of the Study Villages
1.8.3. Classification of Households and Collection of Data in the Study Villages

It is usual to present data on farm households on the basis of land classification, either owned or operated. For example, agriculture census presents data on the basis of land classification: Marginal, Small, Medium and Large holdings, on the basis of the size of land held. Given that labor is a predominant factor of production relative to capital, which includes the technology embodied in it, the use of labor plays an important role in determining inter-farm differences. The labor used by the farm sector includes not only physical labor but also the mental labor, that is, the knowledge of production process. This is important in the Indian context where, by tradition, certain caste groups who do not practice cultivation themselves but have ownership and control over land, while at the other extreme, there are the cultivating castes that possess knowledge of the process of production and whose labor cannot be productively employed, as they do not have access to land. To mitigate the difficulty that arises due to inherent distribution of the land and distribution of labour, the system develops institutions such as tenancy, permanent farm servants, and wage labor, to produce output from the mental and manual labour of the peasantry, for the households who have only land but do not cultivate. This is one segment of the agrarian sector with landholders on one side and labor holders on the other.

Another segment of the agrarian sector is the households that have lands as well as the necessary labor. These two segments differ significantly in the use of resources, both land and labour, and have different objective functions. To capture the inter-farm differences, it is essential to classify the households on the basis of resources and the use of labour on the farms.

For this purpose, we have adopted a five-fold classification. At one end of the spectrum, we have households that own land but do not participate in production. They may either lease-out land, employ farm servants to organize production, or leave the land fallow. These we have categorized as ‘non-cultivating peasant households’, which include landlords in the conventional sense, government servants / school teachers in nearby towns, those belonging to the non-cultivating castes, or disabled households. The major interest of these households in agriculture is to draw rental income from their land. The ‘rich peasants’ are the market-
friendly segment in the village economy. These households operate land and also use family labor in the production process. These segments are the labor-demanding segments in the village economy. The third class is the ‘middle peasants’. These households cultivate the land they own with their own family resources and have minimum interaction with the market. These households neither sell labor in the market nor demand labor in the market. The fourth class is that of the ‘poor peasants’. These households operate land but their land is not enough to meet their subsistence. These households are the suppliers of labor. The last class is the ‘agricultural labor’ that does not operate land and depends on the sale of labor power in the market for survival. Here, there are two classes that are the suppliers of labor power and two classes that demand labor in the village economy. The questionnaire collected information on details of occupation of each member of the household from all households in the village and the total enumeration of the households in the village.

A). Extent of Leased-in Land: Leased-in land is defined as: “land taken by a household on rent or fee without any right of permanent or heritable possession”. The lease contract may be written or oral. According to the Tenancy Amendment Act 39 of 1974, the cultivating tenant is: “a person who cultivates by his own labor or by that of any other member of his family or by hired labor under his supervision and control over any land belonging to another under a tenancy agreement, express or implied but does not include a mere intermediary”. The extent of leased-in land is usually a measure of the proportion of area under tenancy to the total cultivated area.

B). Terms of Lease: A person leasing-in agricultural land can organize production in a number of ways, among which sharecropping and fixed rent (kind or cash) are the predominant forms of lease.

Sharecropping: The landlord gives a plot of land to a tenant under an agreement of sharing inputs as well as outputs. The sharing ratio may vary but it is usually 50:50 of the total output. This has been, and is still, a predominant form of lease contract in the country.

Fixed Rent: The landlord gives a plot of land to a tenant under an agreement of fixed rent, i.e., payment of a fixed amount for the lease of land. The amount paid can be either in cash or kind, while the rent may be paid at the start or end of the production process.
**Leasehold under Crop Sharing**: means that the owner of the land receives a stipulated share of the produce but does not participate in the work; nor does he manage, direct or organize the agricultural operations on the plot of land that he has leased-out.

**Leased under Service Contract**: Land is considered to be leased under service contract, if an employer leases land to an employee in lieu of his/her services, under the condition that the land can be retained as long as the employee continues to serve the employer; and there are no other specific terms of lease.

**Usufructuary Mortgage**: When the mortgager retains the ownership of land till the foreclosure of the deed but the possession of the land is transferred to the mortgagee, the land is considered as leased-out under usufructuary mortgage.

**Relatives under no Specified Terms**: Sometimes, the land owned by a household is looked after and operated by a close relative. For example, a person staying away from his/her village may own a piece of land in the village that is looked after and used by his/her brother’s household, under no contract of payment of any kind to the owner. All such land is treated as leased-out to relatives under no specified terms.

**Under other Terms**: All rent-free leases, other than ‘relatives under no specified terms’, are considered lease under other terms.

1.9. **Limitations of the Study**

1) This study does not account for shocks in agriculture, especially floods and cyclones in the coastal areas, and their effect the tenancy system. It only presents a picture on how various types of irrigation affect the tenancy system.

2) The study does not survey non-resident (absentee land owners) households who are leasing-out land in the villages. As they reside outside the village (i.e., in cities or towns), it is very difficult to include them in the study.

1.10. **Chapter Outline**

The study is divided into seven chapters, along with the present chapter. Chapter 2 presents a review of literature on land lease market and irrigation. Chapter 3 gives a broad picture of the tenancy situations across 15 major states in India, in terms of leased-in extent, followed
by an analysis of the secondary data from NSSO during 1981-82, 1991-92 and 2002-03 on the extent of leased-in/out land, the terms of lease, and sources of irrigation. Chapter 4 focuses on the profile of the nine study villages and conditions of the land lease market in different agro-climatic study villages. Chapter 5 analyses the agents who lease-in/out land in the land lease market in different study villages, and typology of the villages. Chapter 6 examines the factors influencing leasing-in/out of land and the forms of lease in different villages. Chapter 7, the concluding chapter, presents the relationship between the extent of leased-in/out of land and the sources of irrigation.