FUNCTIONING OF LAND LEASE MARKET IN DIFFERENT AGRO-CLIMATIC SETTINGS: THE CASE OF ANDHRA PRADESH

A Thesis

Submitted to the University of Hyderabad

for the Degree of

DOCTOR OF PHILOSOPHY

In

Economics

By

Y. SREENIVASULU

DEPARTMENT OF ECONOMICS
SCHOOL OF SOCIAL SCIENCES
UNIVERSITY OF HYDERABAD
HYDERABAD 500 046
JULY 2012

To

My Parents

Department of Economics
School of Social Sciences
University of Hyderabad
Hyderabad 500 046

Certificate

This is to certify that Mr.Y.Sreenivasulu has carried out the research embodied in the present thesis entitled **"Functioning of Land Lease Market in Different Agro-Climatic Settings: A Case of Andhra Pradesh**" for the full period prescribed under Ph.D ordinance of the University of Hyderabad.

This thesis represents entirely an independent work. This thesis has not previously constituted part of any material submitted for the award of any degree, diploma, associateship, or other similar titles here or elsewhere.

Dr. R.VIJAY
(Research Supervisor)

Prof. S. GALAB
(Research Supervisor)

Dean
School of Social Sciences

Head
Department of Economics

Department of Economics
School of Social Sciences
University of Hyderabad
Hyderabad 500 046

Declaration

I hereby declare that the work embodied in this thesis entitled **"Functioning of Land Lease Market in Different Agro-Climatic Settings: The Case of Andhra Pradesh"** is based on the original work done by me under supervision of **Dr. R.Vijay and Prof. S. Galab,** and has not been submitted for the award of any degree, diploma, associateship, or other similar titles here or elsewhere..

Place: Hyderabad
Date:

Y.Sreenivasulu

ACKNOWLEDGEMENT

I place on record my gratitude to my supervisors Dr. R. Vijay and Prof. S. Galab for their support and helpful guidance all through this Ph.D. thesis work. Without their encouragement and cooperation, I would not have completed this work. I thank them most sincerely for their generous support, which has proved to be immensely useful not only in my work but also in my life. I am deeply indebted to them for inspiring, guiding and encouraging me at every stage of my work in spite of their busy schedule.

I consider it a privilege to express my deep sense of gratitude to Prof. D. Narasimha Reddy, Former Dean, School of Social Sciences, University of Hyderabad, for having extended his valuable guidance throughout the course of my work. I thank him wholeheartedly for helping me improve my work and for his encouragement and kind support all along my academic career.

My special thanks are due to Prof. R.S. Rao and Dr. M. Bharathi who enlightened me on the various issues. Their interactions helped me realize the gap between theory and insightful observations on the field. I am also grateful to them for the number of discussions and thoughtful suggestions on various issues given for the fundamental processes of this thesis. I am especially indebted to them for allowing me to use their project data for my thesis.

I wish to express my heartfelt gratitude to Prof. Manoj Panda (Director, CESS), and Prof. K.L. Krishna (Chairman, CESS), as this thesis would not have been possible without their kind support.

I am also grateful to ICSSR for providing me with the institutional doctoral fellowship, which enabled me to submit the Ph.D. thesis successfully.

I extend my sincere thanks to Dr. Uma Rani, Senior Economist, International Institute for Labour Studies (IILS), ILO, Geneva, whose comments were of great help to me for further improvement of my work, and for her constant encouragement.

I wish to record my grateful thanks to Prof. G. Nanchariah, Dean, School of Social Sciences, University of Hyderabad, for giving me the opportunity to pursue this academic work. I also take this opportunity to thank Prof. A.V. Raja, Head, Department of Economics in the University of Hyderabad. I need to express my sincere gratitude also to my doctoral committee members Dr. Naresh Sharma and Dr. Laxminarayana for their timely help.

I wish to express my deeply felt gratitude to Mrs. K. Rajakumari for neatly and patiently editing all the chapters for me. I would also like to specially thank Mr. Venkatanarayana (CESS) for listening to all my problems and for his encouragement during the course of my research work.

Thanks are also due to Dr. Sreerama Raju, and Dr. C. Ravi (CESS) who with great patience provided me with the necessary technical support. I owe my thanks to the entire faculty at CESS, who came out with constructive comments during the course of my seminars. Special thanks are also due to Dr. P. Prudvikar Reddy, Prof. E. Revathi, Prof. M. Gopinath Reddy and Dr. N. Sreedevi for their keen interest in my work, and their encouragement during the study period.

I deeply appreciate the help I received from the libraries of CESS and IGM, University of Hyderabad. Special thanks to Mr. Vijay Kumar (Former Librarian, CESS), Mr. P. Sudhakar, Mr. Srinivas, Mr. Simhachalam, Suseela and Younis. My thanks are also due to all other staff members at CESS for their help. Special thanks to our Programme Co-ordinator, Venkataiah Sir, for his support and encouragement throughout the study. I would like to thank Mrs. Ghousia Begum for drawing a nice map of the location of the study area, and rendering invaluable timely help.

Further, I am very much thankful to Dharmaraju (Late) and Bandi Madhusudan (GIDR), P. Steven Raj, Sowmya Vinayan (CSD), and Itishree Pattnaik (GIDR) for extending their help. I also express thanks to my colleagues K. Anil Kumar (IGNOU, Delhi), Ch. Krishna Rao (CESS), and M. Srinivas Reddy (CESS) who appreciate me despite my peculiarities and for their encouragement and moral support.

I owe my gratitude to my well-wishers, Dr. N. Sukumar (University of Delhi), Dr. Sailaja Menon (Ambedkar Open University, Delhi), and Dr. Ravindra Babu (University of Dodoma, Tanzania), for their continuous encouragement and support while carrying out this task.

My thanks are also due to my friends D. Siva Kumar, C. Chandra Shekar, P. Raghupathi, Dr. P. Busanna, M. Chandayya, Jagadesh, Vachaya Naik, Nagaraju (CESS), and Ramadas for their constant encouragement throughout the course of my work. They have been a great source of moral support.

I express my deeply felt gratitude to all my family members for their moral support and help in innumerable ways, while I carried out this work. I would like to express my special gratitude to my dear parents Y. Venkataswamy (Late) and Y. Akkulamma. Last but not the least I owe a lot to my wife C. Anuradha for her continued support during the period of my research work. I could not have completed this work without her co-operation and moral support right from the initiation to the completion of my thesis.

Y. SREENIVASULU

CONTENTS

CHAPTER 3

CHAPTER 4

CHAPTER 6

List of Tables

List of Figures

List of Maps

ABBREVIATIONS

HYVs	High Yielding Varieties
NSSO	National Sample Survey Organization
NRI	Net Area Irrigated
HTS	High Tenancy States
LTS	Low Tenancy States
NCPH	Non-Cultivating Peasant Households
PTH	Pure Tenant Household
SC	Scheduled Caste
ST	Scheduled Tribes
OBC	Other Backward Caste
OC	Other Caste
NIE	New Institutional Economics
NCE	Neo-Classical Economists
FLV	Family Labor Variable
LAND	Owned Land
DCA	Desire to Cultivate a certain Area
MPL	Marginal Product of Labor
ITC	Indian Tobacco Company
CV	Coefficients of Variation
OLS	Ordinary Least Squares
ELO	Extent of Leased-Out
ELI	Extent of Leased-In
LSC	Land under Sharecropping

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 there 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 endownments, 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 extention 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[1]. 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[2]. 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.

[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

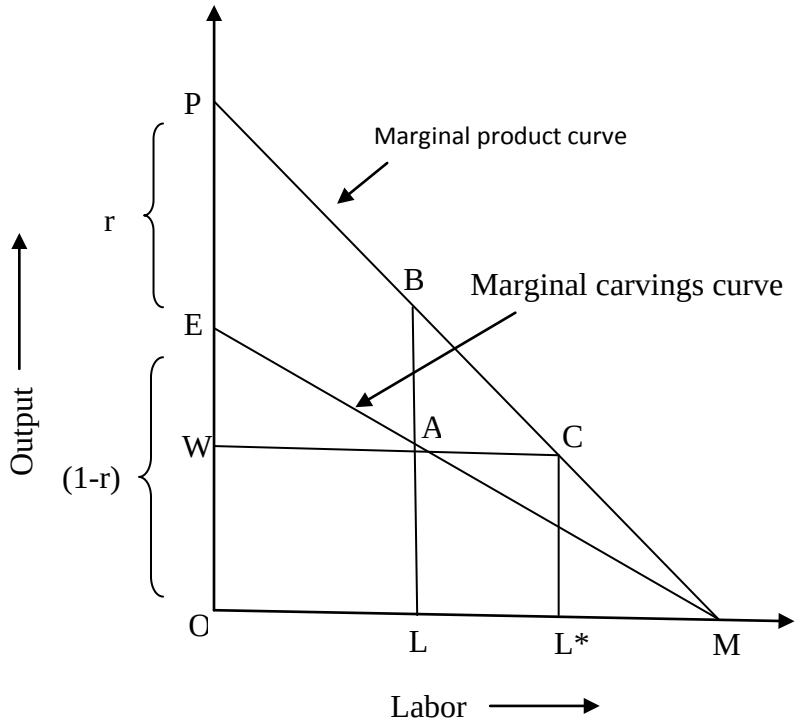


Figure 1 explains Marshall's analysis of shared tenancy. He assumes that a landlord gives a plot of land to a tenant on the agreement of sharing the output. The X-axis in the figure shows amount of Labor, while Y-axis shows the Output. He assumes that labor is the only factor of production and the tenant 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 phenomeno n 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 wou ld 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

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

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.

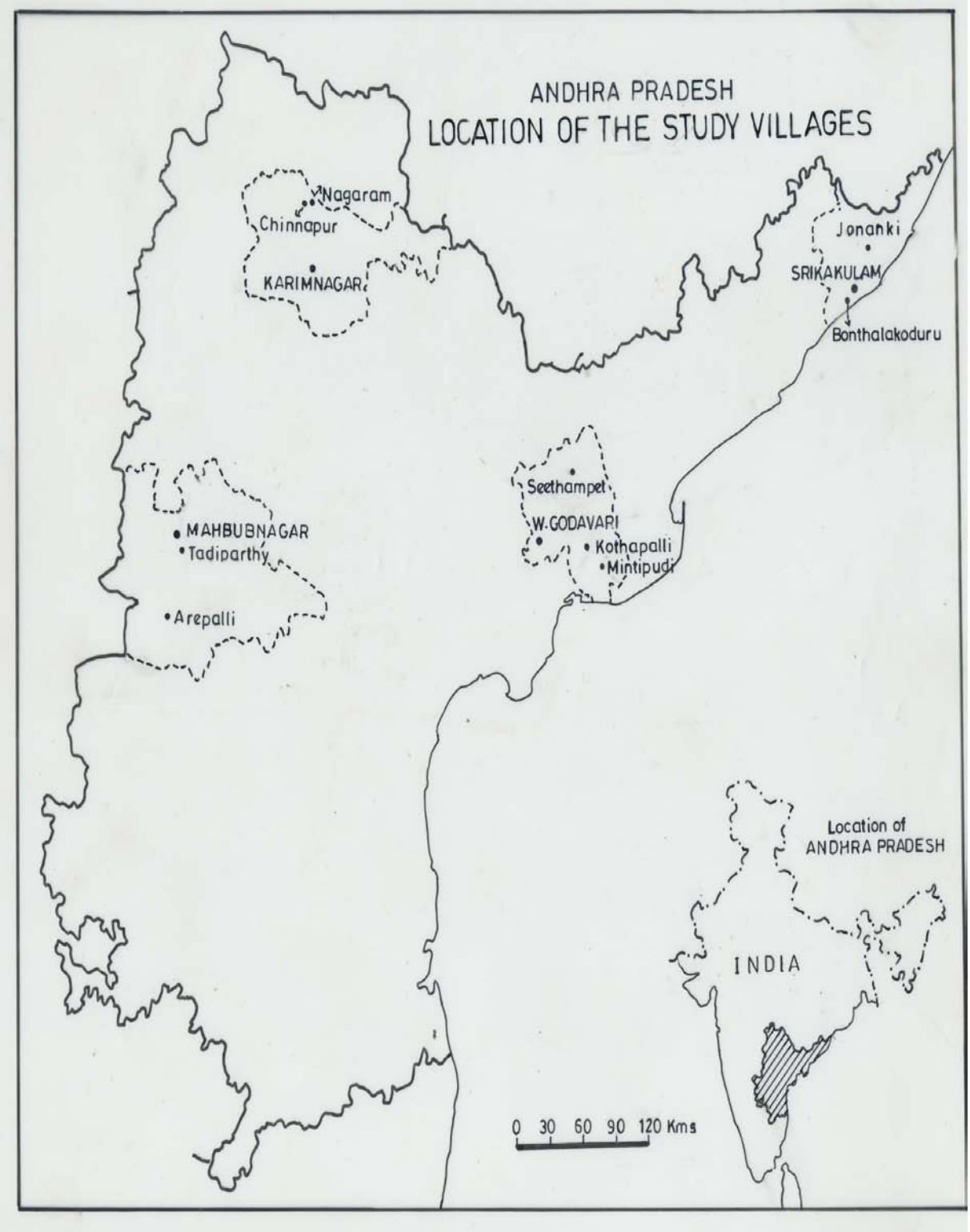
Table-1.2: The Sources of Primary Data, Selected Villages and Households under Survey

District	Mandal	Village	Total Number of Households Surveyed in the Village	Major Sources of Irrigation
West Godavari	Veravasaram	Mentipudi	90	Canal
	Ganapavaram	Kothapalli	208	Canal
	Koyyalagudem	Seethampet	170	Wells
Mahabubnagar	Atmakur	Arepalli	338	Canal & Tanks
	Bhootpur	Tatiparthy	216	Rainfall
Karimnagar	Dharmapuri	Chinnapur	216	Canal & Wells
	Dharmapuri	Nagaram	171	Wells & Tanks
Srikakulam	Jalumuru	Jonanki	151	Tanks
	Elcherla	B.Koduru	177	Wells

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.

CHAPTER 2

REVIEW OF LITERATURE ON LAND LEASE MARKET AND IRRIGATION

2.0. Introduction

Tenancy is generally seen as an institution that arises under incompletely formed markets and/or when the transformation to the capitalist economy is not complete. The literature on tenancy concentrates on two issues, namely the forms of contractual arrangements, and the factors influencing the extent of land under tenancy. The first issue continues to baffle economic theory, discussed it in earlier chapter while the second aspect has seen some systemic results. In this chapter we would like to focuses on second aspect that impact of irrigation on land lease market. In post-independent India, one of the important instruments to initiate change has been the public provision of irrigation. The state initiated the construction of large dams, which in some places were multi-purpose: provision of irrigation, production of electricity, protection from floods, etc. The provision of assured water not only reduced dependence on nature but also included uncertainty factors unlearned by nature on the production system in the process. A related side effect of the provision of irrigation was the expansion of net cropped area.

In this background, this chapter attempts to understand the debates on tenancy including the possible impact of irrigation on the land lease market. This chapter is divided into four sections along with introduction. The second section focuses review on issues related on the impact of irrigation on rural economy. The third section presents issues on irrigation and its impact on land lease market and last section discusses the conclusions of the chapter.

2.1. Provision and Impact of Irrigation

Irrigation is one of the factors that contribute towards enhancing the levels of economic activity in a major way (Vaidyanathan, 1986). More particularly, the research on irrigation has identified predominantly two major effects of irrigation 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 (Majumdar *et al*., 1988). Nature-based uncertainty is reduced by irrigation if double cropping is practiced at the same time.In India, several researchers such as Vaidyanadan (1987) and Dhawan (1985) have touched upon different aspects of how irrigation may contribute to agricultural production. Many of the studies (Krishnamurthy, 1959; Jha, 1967; Mishra and Vivekanand, 1979; Bromley, 1982) have adopted a simple production function approach to show quantitatively how irrigation raises agricultural productivity under the *ceteris paribus* condition. The studies observed the differential impact of irrigation on different socio-economic conditions of people (Rajpurohit and Koilpilla, 1979; Alexander, 1979). Irrigation has led to an increase in agricultural productivity, rise in the standard of living of rural people, and induced social change and modernization. Some studies supported that irrigation brings prosperity to all of the command area. Irrigation development requires a successful blend of irrigation technology and appropriate institutions (Coward Jr., 1980), leading to enhancement of the decision-making abilities in agriculture (Bromley, 1982), which result in an increase in agricultural wages, more employment opportunities, and higher yield per acre.

Another set of studies have analyzed the impact of irrigation on yield, i.e., agricultural production. Pal (1985) has explained the nature of irrigation among the different sources of irrigation which would have a greater impact on yield per acre. However, tube well irrigation is generally considered better than other sources. Thus, tube well irrigation increases the possibility of double and multiple cropping under its command area. Some studies by Narain and Roy (1980), Mehra (1981), and Dhawan (1983b) have found that tube well irrigation increases productivity more than any other source. He found that the productivity under tube well irrigation is much superior to other sources of irrigation in Andhra Pradesh, Tamil Nadu, Punjab and Haryana. Irrigation is an instrument with which rural transformation and agricultural diversification can take place (Nair, 2005). A large number of studies have also looked into the relation between irrigation, physical yields and cropping intensity (Rao, 1975; 1976; Bharadwaj, 1974; Vaidyanathan, 1978). Irrigation can be a public provision (canals, tanks) or a private provision (wells and tube wells); the nature of irrigation plays an important role in the rural economy, not only impacting productivity

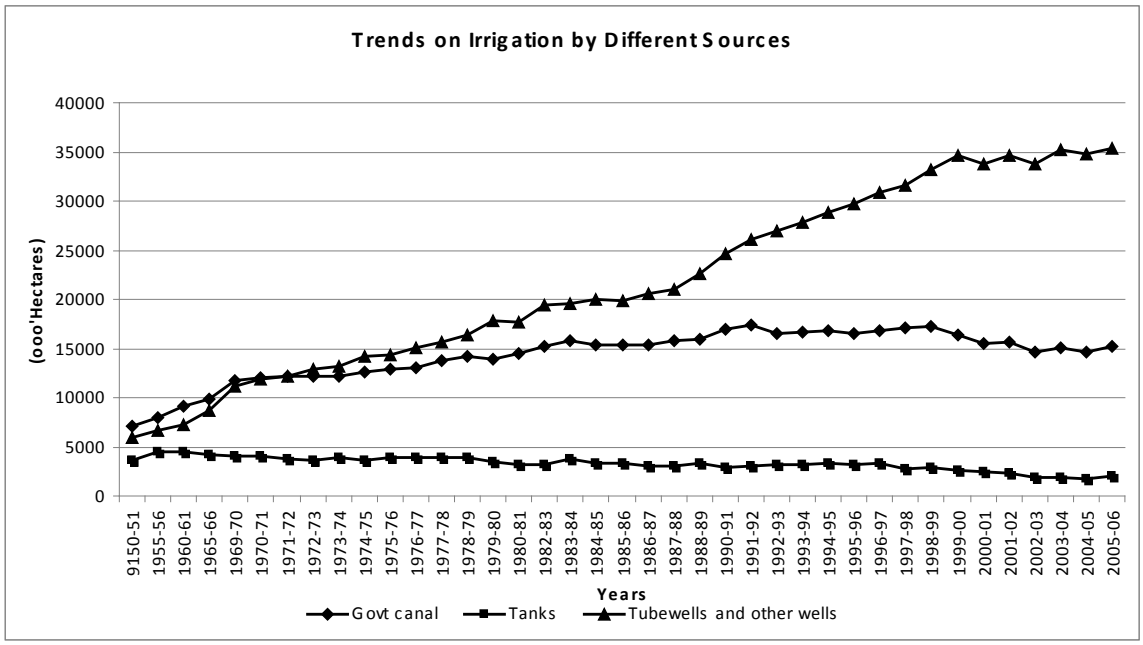
but also employment and wages. The importance of irrigation is thus one that boosts productivity, employment and wages.

The present study tries to explain the relation between the nature of irrigation and the extent of land leased-in and land leased-out; and particularly on how irrigation influences in leasing-in and leasing-out the extent of land. At the same time, it also looks into the impact of irrigation on rural land lease market. A few studies tried to examine the relationship between irrigation and land lease market. The tenancy institution is predominant seen only in the irrigated areas (Bardhan, 1979; Subramanyam, 2000).

The post-independence period has witnessed a massive expansion in the area irrigated. In the 1950s the proportion of land irrigated was around 17.11 per cent. This proportion has increased to around 42.86 per cent by 2005-06. Table 2.1 provides some evidences of the increasing emphasis of irrigation. The State has taken the initiative for the expansion of the irrigation potential.

Trends in Irrigation

Figure- 2.1: Trends in Irrigation



Source: Statistical Abstract of India.

Figure 2.1 shows the trends of three major irrigated sources, i.e., tube wells, canals and tanks. The traditional irrigation systems are namely the tanks and wells; and modern irrigation systems are canal and tubeweel. A salient feature of public provision of irrigation, namely the canal irrigation systems is an equity among the users of the land which in not true for all the rest of the source of irrigation. Tube well and canal irrigation in India shows an increasing trend over the period of time from 1950-51 to 2005-06. However, the rate of increase in the tube well irrigation is much sharper than the rate of increase in the area under canal irrigation. The area under tube well irrigation in India has witnessed a rapid increase after the 1970s. But after 2000-01 the area under tube well irrigation witnessed a stagnant trend. The trend of area under canal irrigation witnessed a stagnant trend after 1990s. On the other hand, the area under tank irrigation witnessed a declining trend. There was hardly any increase found in the area under tank irrigation after the 1960s. This shows that the private initiative for irrigation has increased in India while the government investment in the irrigation sector has declined and the traditional source of irrigation (tank) witnessed a further declining trend.

Table 2.1 shows the percentage of area irrigated by different sources during 1981-82, 1991-92, and 2002-03 in 15 major states of India. We see that in some states like Assam, Bihar, Karnataka, Kerala, Maharashtra, Orissa, Punjab and Tamil Nadu, the total irrigated area has increased from 1981-82 to 2002-03; while in states like Gujarat, Haryana, Rajasthan and West Bengal, the total irrigated area has declined. Andhra Pradesh, Madhya Pradesh and Uttar Pradesh are the states that have not shown much difference in percentage of irrigated area during the period.

Table-2.1: The Percentage of Irrigated Area by Different Sources during 1981-82, 1991-92 and 2001-02 in 15 Major States in India

	Canals			Tanks			Tube Wells and Other Wells			Total Irrigated Area		
States	1981-82	1991-92	2002-03	1981-82	1991-92	2002-03	1981-82	1991-92	2002-03	1981-82	1991-92	2002-03
AP	5.55	12.07	12.00	3.77	6.32	3.00	4.90	13.08	18.00	15.55	35.73	34.00
Assam	0.30	1.28	2.00	0.00	0.03	0.00	0.11	0.27	2.00	0.51	5.80	6.00
Bihar	9.34	5.57	11.00	0.79	0.58	1.00	12.20	24.32	53.00	24.82	41.09	70.00
Gujarat	3.07	4.11	5.00	0.00	0.16	0.00	22.29	25.29	26.00	26.47	34.20	31.00
Haryana	35.89	36.31	18.00	1.07	0.07	1.00	28.61	30.81	51.00	66.20	72.98	70.00
Karnataka	4.37	5.23	8.00	1.70	2.10	1.00	2.67	6.52	12.00	9.59	19.33	23.00
Kerala	6.30	4.27	8.00	0.79	0.76	1.00	3.13	6.03	10.00	11.99	18.16	22.00
MP	4.25	5.96	2.00	0.60	0.76	1.00	5.34	11.32	19.00	10.75	24.25	25.00
Maharashtra	2.47	3.96	4.00	0.29	0.59	1.00	6.47	11.00	20.00	10.12	19.51	28.00
Orissa	8.37	8.27	14.00	1.38	1.55	1.00	0.51	0.64	0.00	11.39	15.26	18.00
Punjab	26.35	10.91	8.00	0.83	0.30	1.00	50.53	60.29	86.00	78.00	72.93	95.00
Rajasthan	2.62	9.32	4.00	0.07	0.51	0.00	8.84	14.49	10.00	11.62	27.27	15.00
Tamil Nadu	13.50	11.80	10.00	8.64	4.92	6.00	21.96	23.89	41.00	46.98	47.46	61.00
UP	17.77	14.21	11.00	1.61	0.49	1.00	37.77	46.22	53.00	59.59	67.06	67.00
W.Bengal	8.40	12.53	10.00	4.22	4.10	2.00	6.49	17.20	26.00	22.29	44.87	43.00
India	8.16	9.22	8.00	1.42	1.36	1.00	13.83	19.28	25.00	24.84	35.39	36.00

Source: Based on 37th, 48th and 59th Rounds of NSSO, Govt. of India,
Report Nos: 331, 407 and 492.

When the distribution of irrigated land according to its sources across the states and over a period of time are considered, an interesting pattern appears (Table 2.1). Canals constitute the major source of irrigation over all periods and across all states. Out of the total proportion of area irrigated, canal irrigation accounted for 32.87 per cent in 1981-82; 26.04 per cent in 1991-92; and 22.22 per cent in 2002-03 — It is observed that the proportion of area irrigated through canals, has declined from 1981-82 to 2002-03. Canal is a predominant source of irrigation in Orissa, Haryana, Punjab and MP. If we look across the states, the proportion of canal irrigation during the three decades appears to be declining in states like Haryana, Punjab, MP, Maharashtra, Tamil Nadu, West Bengal and UP (from 1981-82 to 2002-03). The main reason for the decline is rainfall. However, Orissa, Bihar, Gujarat saw an increase in irrigated area through canals during the last three decades due to the coming up of major irrigation projects. We see that states like Andhra Pradesh, Tamil Nadu, West Bengal, Karnataka and Orissa are familiar only with tank irrigation. Even though, there was a greater decline in all states, yet the area irrigated by tanks has decreased in these states because of the fact that most of the tanks have lost their holding capacity. The percentage of

irrigated area by tanks was only 2.77 percentages in 2002-03. There was no tank-irrigated system in some states like Assam, Gujarat and Rajasthan. It is further observed that tube wells are the prime source of irrigation in India. These accounted for about 52.78 per cent of the area irrigated in 2002-03. The area irrigated by tube wells has been increasing during the last three decades (1981-82 to 2002-03). The number of tube wells has registered a significant increase over the last three decades. Bihar, Haryana, Punjab and UP have more than 70 per cent of area under tube well irrigation. The reason for rapid increase in tube wells is that individuals give more importance for private sources of irrigation. All most all states have witnessed this phenomenon in all decades in progression.

2.2. Irrigation and its Impact on Land Lease Market:

Here one studies the impact of irrigation on the land lease market in terms of the extent and forms of lease. In the context of the land market being inactive (low turnover) and the labor market witnessing an excess supply of labor at the existing positive wages in the economy, the land lease market works as a substitute for the incompletely formed land and labor markets. As explained earlier, the necessary condition for the generation of the land lease market is the incompletely formed land market while sufficient conditions are the missing multiple markets. In other words, these are potential demanders of land, but their demand does not get realized, not due to lack of purchasing power but due to lack of land supply in the market (also called interim sales by Basu (1984)). With the missing land market, the lease market functions as a substitute market to access land resources. The extent of land leased is a result of the interaction of demand and supply side factors in the land lease market.

Given the initial allocation of land resource in the economy, a household has two options: One is to self cultivate (with family labor or casual labor) or to lease-out the land. The land in the lease market is supplied by households that own land but either do not want to cultivate the land (nor sell it) or wish to cultivate the land but have excess land when compared to the their labor resources. Such households can either lease-out land or interlink land lease and the labor market to access labor from households with surplus labor. In the same vein, households that want to operate land define the demand side in the market. These

operators could be those who have 'enough' lands based on the resources at their command or have more labor compared to their land at their command. The demanders could also be of two types: agricultural labor households or pure tenant households— these households have two options: either to enter the labor market or to enter the land lease market; and households that own land but want to expand their scale of operation — such households are also called mixed tenants.

One of the important explanatory variables to explain the existence of shared tenancy is decision making under uncertainty conditions. Given an uncertain environment, households may have different perceptions on risk factors. Some households can be risk-averse, while some might be risk neutral/loving. If the marginal farmers and/or landless labor are the leasing-in agents, and the large land owners with diversified portfolio are the leasing-out agents, one can hypothesize that the leasing-in agents are risk-averse and the leasing-out agents are the risk-neutral agents. In such a situation, the existence of shared tenancy can be explained in terms of trading in the risk market wherein insurance market is missing.

A second method of explaining the choice of contractual arrangements was presented by Rao (1971). His study has explained that the coexistence of the different lease arrangements may be influenced by the relative significance of entrepreneurial functions. The crop-sharing arrangements are seen to be common in areas of relative economic certainty, while fixed-cash tenancy seems to be common in areas where the crops are highly profitable. However, crop sharing may be a beneficial form of lease for modern profitable inputs. This leads to increased investment and scope for decision making. But one does not have any study relating to changes in the level of uncertainty and the extent of land under lease. Here an attempt is made to study this relationship.

The existence of tenancy arrangements in agriculture is usually seen as a response to some missing/incomplete markets in agriculture. This study is intended to investigate whether changes in levels of economic activity affects the form and/or extent of tenancy in organizing production. Irrigation is one factor that contributes in a major way to enhance/increase levels of economic activity. We propose to use this factor as a proxy for

levels of economic activity. Empirical evidence suggests that the regions with high irrigation are also witnessing higher extent of land under tenancy (Bardhan, 1976). Similarly, NSS data (2002-03) shows that high irrigated states have high proportion of land under tenancy. Irrigation has two effects on the outcome in agricultural production. On the one hand, it increases the yield per hectare of the production-unit-land, and on the other hand, it reduces the variability in yield per hectare. The reduction in the variability reduces the uncertainty faced by the production unit in the production activity. Irrigation not only reduces the impact of nature-based uncertainty on the production unit, but also can be a public provision or a private provision. If irrigation is through public investment, all the producers in the command area will have access to irrigation without any substantial costs to access irrigation. In the Indian context, public provision of irrigation is more important than private provision and therefore this study focuses only on the effects of public provision.

By reducing the variability in yield per hectare, irrigation also reduces the variability of rent paid per hectare. This increased certainty in the rental shares would have an impact on demand for leased-land as well as the supply of such leased-in land. For households that own land, the lower variability in rent implies that leasing transforms into a source of assured income. The supply therefore might increase. This is further augmented if there is an expansion in non-farm employment opportunities. On the demand side, labor-supplying households have an option to enter either the lease market or the labor market. Labor-supplying households prefer to enter the land lease market rather than the casual labor market. If the labor market witnesses high uncertainty when the land lease market witnesses lower uncertainty, there is a possibility that the labor-supplying households would shift to land lease market and in the process bid up the rental rates making it more favorable for land owning households to lease-out land (Sreenivasulu, 2002).

2.2.1. Supply Side in the Land Lease Market:

There are two sources of supply of land in the land lease market. One can be identified by following the resources adjustment model, where the households have an excess supply of land compared to other non-marketed resources. The second is those households that have

discontinued agriculture but still continue to own land. This condition is based on the idea of differentiated peasantry in the rural area, and the existence of either landlords or non-cultivating households that have interest in land. On this basis, one can identify four main conditions for the supply of leased-in land. They are:

1. A source of land is the product of the initial allocation of resources. If the land market (Basu, 1983; Bhaduri, 1984) is inactive, changes in the distribution do not take place historically. The resource adjustment model provides one important source of land in the land lease market. If a household has more land when compared to the non-marketed resources in the households (maybe labor or instruments), these households could use the opportunity to lease-out the 'surplus' land in the land market. Based on these causations, areas with high land concentration should be high on tenancy.
2. If one assumes the existence of a well-formed labor market, it provides higher returns for land owners as well as higher wage labor employment for laborers, when compared to marginal households that may lease-out land and enter the labor market for jobs. But under this trivial condition, the land lease market may not exist. History may play an important role in the supply of land in the land lease market. During the colonial period, the British administration evolved a system of revenue collection from land. These were called the land revenue settlements. The revenue collecting rights were given to the individuals in the *ryotwari*, *zamindari*, or *mahalwari* settlements. Ryotwari land revenue collections are the closest approximation in the Indian context to the individual property rights on land. The landlord-based system generated a series of intermediaries between the cultivators and the state ─ a by-product of the land settlement process introduced by the colonial government. One of the implications of the existence of intermediaries was the lack of incentive to invest among the cultivators, affecting the growth rate of the agrarian economy. The areas with *ryotwari* system or non-landlord-based land revenue system have a higher agricultural investment and productivity, even in the post-colonial period, and differences in the performance are due to differences in historical

institutions, leading to different policy choices (Banerjee and Iyer, 2004; Pattnaik, 2009). In conditions wherein the revenue collectors have given land rights to the poor (for example, in *zamindari* areas), and the land reforms are not successful, revenue collectors continue to have land rights but do not collect information on land lease arrangements. So one finds tenancy to be a more popular form of contractual arrangement in states like West Bengal, Bihar, etc., wherein the *zamindari* system was prevalent (Parthasarathy, 1967). According to Ojha (1965), the percentage of leased-in area in the total operated area in Bihar was 48.59 per cent before *zamindari* was abolished, and 38.12 per cent after *zamindari* was abolished. While in ex-*zamindari* states such as UP, Orissa, Bengal, Kerala and Gujarat, there was a decline in tenancy. In a related sense, culture could also play an important role in defining the supply of land. Culturally there could exist similar segments in the society that can own land but are restricted from cultivating the land. An illustration is the Brahmin households who can own land but do not cultivate the land. This results in either leasing-out the land or practicing cultivation using attached labor (Parthasarathy, 1967).

3. A third source of supply of leased-out land is where some households have access to non-agricultural employment or their labor has alternative uses outside the village economy. They could be school teachers, those serving in the army or also those who have left agriculture. National Sample Survey Organization (NSSO) data estimates indicate Haryana, Punjab, Assam and West Bengal as the high tenancy states, while Gujarat, Maharashtra, Madhya Pradesh, Rajasthan and Kerala as low tenancy states. According to Laxminarayan and Tyagi (1982), there are two main reasons for the existence of high tenancy in Punjab. Firstly, the HYV technology is capital intensive in nature and highly profitable (commercial agriculture). This has made it profitable to lease land. Secondly, Punjabis who are staying outside India or working in armed forces and services are found to have given their land on lease. This may be true for the state of Haryana also (Sawant, 1991).

The rural non-farm sector is widely looked upon as a source of momentum for rural growth and poverty reduction. Employment patterns in the non-farm sector have been widely scrutinized for evidence of economic dynamism in rural areas. Visaria and Basant (1993), who examined NSS and census data, have documented a clear increase in the share of non-agricultural employment. In addition, they also point to a more rapid expansion of tertiary sector employment rather than secondary sector employment, and the bulk of employment came in the form of casual nature, rather than permanent. Related evidence is the increase in the proportion of non-cultivating households in the rural areas. As of now, the NSS has conducted four rounds on the assets and liabilities of households. They are: 26th Round (1971), 37th Round (1981), 48th Round (1991), and 56th Round (2002). These surveys have showed that the number of rural non-cultivating households has been increasing over time ─ the percentage of non-cultivators has increased from 27 per cent to 40 per cent. In the sub-groups of non-cultivating households, one observes that the proportion of agricultural labor households is nearly the same in the four rounds, i.e., around 14 per cent, while in case of the artisans, there is an increase in the proportion of artisan households from 2 per cent to 5 per cent. The major increase in the non-cultivators is the 'others', category. In 1971, the 'others' formed 27 per cent of the households, which increased to 40 per cent by 2002. The rural economy is witnessing an increase in the proportion of non-cultivating households, and in the non-cultivating households, the proportion of 'other' households in the rural sector increased. According to Thorner (1976), about 70 per cent of the lands are owned by non-cultivating households. Such households garner an average of about 50 per cent of the gross product as rent by leasing-out to poor landless or marginal tenants who bear all costs of cultivation. This rental income represents a 'return' to land monopoly and has nothing to do with any investment of capital by non-cultivating households in the production process, nor creates labor demand in the labor market. It only leads to the generation of an inactive labor market in the rural economy.

Effects of Irrigation on the Supply Side of the Land Lease Market:

The provisions of irrigation can affect the supply side of the land lease market in two ways:
(a) given the allocation of land-labor resources among the households, irrigation shifts the marginal product curve of labor outwards, leading to a potential for higher usage of land and

in turn a decrease in land leased by the households. This can decrease the proportion of land leased-out. Empirical evidence shows that the farmers who were earlier leasing-out their lands are now taking to self-cultivation after the provision of irrigation facility to them. With the advantages of irrigation (technology), self-cultivation should increase the profitability of farming. In this condition, land owners are likely to resume land for self-cultivation of otherwise leased-out land (Mellor, 1976; Sen, 1974).

(b) The provision of irrigation can have the potential to increase non-agricultural employment in the economy. Agricultural output and irrigation stability would be important factors that generate viable and long-term opportunities for diversification towards non-agricultural activities (Basant, 1994). Basant and Kumar in their study pointed out that irrigation plays a positive role in the life of workers who shift from agricultural activities to non-agricultural activities during slack seasons. The studies on the economics of farm management also show (West Godavari) the impact of irrigation on employment. Several crops grown in different parts of India are also found to improve their production and subsequently the employment measured at acreage level. Given the rise in the demand for labor, the wage rates in irrigated areas are significantly higher than those in the unirrigated areas, despite the large-scale migration of labor to the irrigated areas (Rao, 1975). The rise in employment and wages on account of irrigation leads to a relative stability in employment and income (Rao, 1994). Rao's (1995) study reveals that the share of non-farm employment is increasing in the delta region.

As we observe the non-agricultural employment among the land owning households, we find that an increase in irrigation is collinear with the introduction of green revolution technology. There is a need for provision of inputs to farmers to use the green revolution technology. So there is a need for input traders, commission agents, and output traders, who were not there before. One segment who can convert to the providers of these services is that of land owning households that have some surplus. Thus, it is possible to have an occupation shift without sale of land. These segments may form the potential suppliers of land post irrigation. It is also important to note that there is some evidence that larger

farmers invest their surpluses into non-agricultural activities (Rutten, 1991; Harriss, 1991; Basant and Joshi, 1991).

(c) The provision of irrigation reduces the uncertainty introduced by nature. This would lead to decrease in the variability introduced by nature as well as the increase in the yield of the farmers. So if a household is diversifying from agriculture due to employment opportunities in the non-agriculture sector, it is assured of a more certain income in the form of rent from the land. This can strengthen the desire of the households to diversify from agriculture, but to hold on to their land.

2.2.2. Demand Side Factors

There are two different causations for the demand for leased-in land:

1. It is assumed that homogeneous farming households with differentiated ownership of inputs needed in the production process are among the potential demanders of land that can be generated, as hypothesized by the resource adjustment model. There could be some households that own less land when compared to the ownership of other non-market resources. Given the absence of related markets, these households become potential demanders of land in the land-lease market. The resource adjustment model is followed for the empirical exercise. The empirical exercise shows that the resource position is different between the leasing-in and leasing-out households and so these households enter the land-lease market. Many economists adhering to the neo-classical tradition broadly interpret tenancy as a resource adjustment mechanism under conditions of unequal resource endowments and imperfect markets (Marshall, 1961; Cheung, 1969; Bliss and Stern, 1982; Jodha, 1981; Sharam and Dreze, 1990). It is usually believed that the land deficit and labor surplus farmers lease-in land from land abundant and labor scarce households, in order to increase their operational holdings either to meet their subsistence requirements or to earn commercial profit.

2. Assuming that a non-homogeneous farming community conceives two different sources of demand for leased-in land, one segment can be labeled as subsistence-oriented peasants while the second can be called the market-oriented/capitalist farmers (Patnaik, 1976). Subsistence-based tenancy is generated by the demand for land by agricultural labor households and/or poor peasantry, while the market-oriented farmers have the second type of demand.

Considering an agricultural labor household holds broadly two options: to enter the labor market or to enter the land-lease market, the household entering the labor market needs to find employment to sustain. The wage earner enters the output market as a purchaser of goods needed for his household consumption. So these households enter into two markets to satisfy their food needs. The second option with a landless labor household is to enter the land lease market. These households in the Indian situation in general produce food grains, and are able to meet their food needs in addition to assured employment on their owned land. In the Indian conditions, the output market is said to be imperfect.

The literature identifies that there could be a hedge between the sale price and the purchase price. In such a situation, there could be a preference for an agricultural labor household to enter the land lease market rather than to enter the labor market. If this condition is true, one would expect an excess demand for land in the land lease market. This will necessitate a process of rationing in the land-lease market. In a study of the contractual options open to agricultural labor households in a village (in Andhra Pradesh), it was found that there was a demand for leased-in land by agricultural labor households, but only households that owned some non-marketed production-based inputs could access land in the lease market (Vijay and Sreenivasulu, 2005). Verma and Mishra (1984) pointed out that the institution of shared tenancy reflects the true conditions of subsistence tenancy in a backward agrarian setting like Bihar. The study emphasized that land is predominantly leased-in by marginal and small farmers out of necessity. As the very purpose of this class of tenants is subsistence, such tenancy may be termed as ‘subsistence tenancy’. In the case of subsistence tenancy, the terms and conditions are obviously unfavorable to the tenants, resulting in their exploitation, while the lessor-lessee relation is unhealthy and inimical to agricultural development.

The second important segment to lease in land is that of market-oriented farmers in the rural areas. Given the constraints to the expansion of land by these households either due to low turnover in the land market or state legislations (mainly land reforms measures), these households enter the land lease market to expand their scale of pertain. A necessary condition for the existence of demand for this segment of farmers is an expanding demand for the goods produced by them. Several studies have expressed an opposition to the idea of tenancy being necessarily a feudalistic or pre-capitalistic institution. The basis for their argument is the recently observed tendency in some parts of the country of big farmers who are leasing-in land with a view to improve their operational holding for large-scale capitalistic farming ─ this is indeed a 'commercial tenancy' or what Lenin called 'entrepreneur renting'. Some studies also hold the same opinion that land lease market is now dominated by medium and large farmers as lessees, and that small and marginal farmers now make the multitudes of lessors (Vyas, 1970; Rao, 1974; Nadkarni, 1976; Jodha, 1981).

The reversal in the tenurial relations could be attributed to a number of factors: First, with the spread of new agricultural technology, medium and large farmers find it more profitable to lease-in additional land in order to make optional use of the capital inputs such as tractors, threshers, pump sets, and so on. Some studies in agriculturally developed states/regions, viz. Punjab, Haryana and Western Uttar Pradesh, appear to have brought out increasing incidence of self-cultivation, emergence of fixed rent tenancy, and participation of medium and large households in the lease market as lessees (Singh, 1989; Bhalla, 1983; Srivastava, 1989; Siddiqui, 1999). According to Murty (2004) the entry of large farmers into the lease market aggravates further capitalist development in the agricultural sector. However, numerous prospective tenants from the poorer sections can get distanced from the lease market in the process. In a rural economy, if the farmers have co-existence with these two segments, they would compete to get access to land. The amount of rent that is paid by these segments would define whether the scale helps the market-oriented farmers reap benefits or the intensive labor-using subsistence farmers to get access to the land.

The provision of irrigation can influence the demand for land lease in a number of ways: As specified earlier, the provision of irrigation reduces the uncertainty generated by nature. Simultaneously, the area irrigated would also have witnessed the uses of modern inputs leading to an increase in the yield of the land. Separating these two can be a difficult proposition. The changes in the demand for land lease can be due to the following reasons:

(a) In case of homogenous peasantry formulation, the provision of irrigation leads to a decrease in nature-based production uncertainty, while increasing land productivity. In this context Bardhan (1979) maintains that "The percentage of area under tenancy will be higher in areas where the land improvement factor is larger (i.e., soil fertility, rainfall, irrigation, etc., is better). This result holds even if the landlord and the tenant have unequal access (or incentive) to land improvement" (Bardhan, 1976, p. 1508). Further, "An increase in production uncertainty reduces the percentage of area under tenancy" (Bardhan, 1976, p. 1508). In such irrigation, we expect tenancy to increase when land improvement factor increases and uncertainty factor reduces.

(b) Production-based uncertainty with yield increases on conditions of a substantial increase in the employment opportunity. Krishna Rao (1996) has mentioned that with the introduction of green revolution technology, both labor employment and real wage rates have increased, as has the area under irrigation. About 45 per cent of the gross area under cultivation in the state is under irrigation. With the distribution of government wasteland, ceiling surplus land, and partly with the acquisition of small plots of land by SC and OBC families, the percentage of agricultural labor has declined and that of cultivating households has increased in AP. Further, the available evidence (Laxminarayana and Tyagi, 1982) indicates that there might have been some decline in tenancy in the green revolution areas of North India, where a large number of landowners have taken back their land from tenants for self cultivation in order to get better benefit from new technologies. Similarly, large and bigger land owners are not only leasing-out their land but also leasing-in land from others. The new technology has given ample scope to large land owners to lease-in land from smaller holdings with a view to enhance their income (Iqbal, 1989; Reddy,

1996). The agricultural labor households will want to enter the land lease market to meet their subsistence and so the demand by these segments will increase. If the corresponding demand for output is witnessing an increase, it would also witness an increase in the demand for land by the market-oriented segments. Irrigation can influence the demand for land by increasing the proportion of market-oriented rich peasantry.

According to Hayami (1993), shared tenancy exists when tenants are risk-averse under the condition of uncertainty. Such results are consistent with the positive association across regions between the adoption of shared tenancy and the degree of variations in yield. On the other hand, tenants are expected to pay higher rents for lower risk under the fixed-rent tenancy.

The overall impact of irrigation of the land lease market may be ambiguous depending on the total effect of the demand and supply factors and the extent of land leased; but the implication on the rent may be clearer. At the empirical level, there appears to be a shift towards fixed rental contract, which in terms of theory is a decline in nature-based uncertainty leading to a decline in the importance of land lease market and an increase in the land under fixed rental contract.

The types of irrigation can play an important role in rural economy weather it can be a choice change of demand and supply of lease-in extent that has been expressed by Parthasarathy (1967). The variations in tenancy are generally sought to be explained by the proportion of irrigated area. Some opinions have been expressed by Rao (1965) and Tara Shukla (1965). Their explanation appears plausible in view of the fact that areas with very high degree of tenancy are generally found to be those with high proportion of irrigation. 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. The trend of decrease in variability due to sources of irrigation depends on whether the provision of irrigation is private or public. Basically, the study looks into the nature of irrigation and how it influences the

demand and supply choices of lease households. Parthasarathy (1967) pointed out that there was a positive relation between the extent of tenancy and the proportion of irrigated area. He has expressed that the high irrigated district of Godavari has high proportion of tenancy areas whereas Nizamabad has the lowest proportion of tenant areas because of low proportion of irrigated area. According to Bardhan's (1979) inter-regional cross-sectional study the agriculturally better-off regions have a larger proportion of area under tenancy. A few studies tried to examine the relationship between irrigation and land lease market. The tenancy institution is predominant only in highly irrigated areas (Bardhan, 1979; Subramanyam, 2000; Narayan and Nair, 1994).

An important aspect in tenancy system is about who leases and from whom. All the lessors may not be big landholders, nor are all the tenants marginal cultivators. As there are many claimants, the lessors may choose a particular lessee in preference to others. There are two arguments regarding the lease market: whether the large farmers or the small marginal and marginal farmers dominate the land lease market. Bardhan (1976), based on the NSS data for 1960-61 and 1970-71 states that the smaller tenants are treading into a concentration of tenancy — the lease market still continues to be dominated by the small and marginal farmers (Singh, 2001). The proportion of households leasing-in land was found to be much higher among households of lower size categories such as the landless and marginal households compared to higher land size categories (Sharma, 2007). Particularly, in canal irrigated areas, the number of pure tenants might be high in the land lease market (Parthasarathy, 1967). The study makes an attempt to analyze the conditions under which pure tenants enter into the land lease market in different study villages.

2.3. Conclusion:

In this chapter has presented the literature on these two factors and tried to analyze the impact of irrigation on the extent of land leased. In the post-colonial period, the Indian State has made a series of attempts to increase the levels of irrigation as well as to initiate a process of transformation. Irrigation was seen as the extent to decrease the level of nature-based uncertainty as well as to increase the yield of the crops cultivated. In this context, an

attempt is made to identify the factors influencing the demand and supply of leased-in land. The demand for leased-in land can be due to a mis-match between the land and other non-marketed resources owned by the household, or the presence of households in the rural areas who own land but do not cultivate the land. The supply of leased land was also generated due to mis-match of resources as well as the demand for land by agricultural labor households and market-oriented segments. The provision of irrigation can influence the demand and/or the supply behavior, and the total effect depends on the impact on the demand and the supply side of the land lease market. The relationship between irrigation and extent of lease-in land and forms of lease at state level analysis will be discussed in the next chapter.

CHAPTER: 3

INTER-STATE VARIATIONS IN THE EXTENT OF LAND TENANCY

3.0. Introduction

One of the interesting features observed in Indian agriculture is that the proportion of land reported under tenancy is different in each state, i.e., there is a wide inter-state variation in the extent of land under tenancy among the 15 major states in India. According to NSSO (59th Round), the estimates on the proportion of land leased (land under tenancy) varied from a maximum of 16.8 per cent in Punjab for the year 2002-03, followed by Haryana (14.4 per cent), Orissa (13 per cent), Uttar Pradesh (9.5 per cent), Madhya Pradesh (3.6 per cent), Karnataka (3.6 per cent), Kerala (4.0 per cent), to a minimum of 2.8 per cent in Rajasthan[3]. One of the major statistical problems with the data related to tenancy is the under-reporting of the extent of land under tenancy due to the protective tenancy regulations enacted by the states. However, from secondary data sources one gets only the perentage of households leasing in and out but not who is leasing from whom. Recognizing this limitation, this chapter attempts to decipher the statistical patterns in the proportion of land under tenancy and examine whether these patterns are economically meaningful. In specific, the chapter attempts to study whether provision of irrigation has any economically meaningful impact on the proportion of leased-in land. This analysis has an added problem that a tenancy contract has two components, namely the extent and the form of tenancy. The economic interpretation of the extent of land under tenancy depends on the form of contract, i.e., even if the extent of land under tenancy is the same, the economic implication of the contract depends on the form of lease contract. This should be borne in mind during the evaluation of the empirical exercise. The present study focuses on the nature of irrigation

[3] NSSO 59th Round and Report No. 492 on "Some Aspects of Operational Holding in India", 2002-03.

and tries to find out if it has any association with the extent of leased-in land across the states.

"Tenancy as an institution has complex historical, sociological, political and legal dimensions, and variations in a statistical magnitude like the area under tenancy cannot capture the qualitative nuances associated with them" (Bardhan, 1984, p. 127). Hence, the variation of the extent of land under tenancy depends on all these factors, but in this study the statistical regularities are narrowly explained in terms of economic factors. Literature identifies tenancy as a rational response of individuals to incomplete and inadequately formed markets. "One of the major problems that any economic exercise in this area will face is that it is impossible to get 'hard' quantitative evidence on the extent of these market failures which could be statistically related to the variation of tenancy" (Bardhan, 1984, p. 128). Bardhan has shown technological and demographic factors for this variation in extent of tenancy. However, he has pointed out evidence that the incidence of tenancy would depend on better irrigation, production uncertainty, unemployment, or more labor-intensive crops and methods of cultivation.

This chapter is divided into six sections along with introduction. The second section focuses on trends in the extent of leased-in land and terms of lease for 1981-82, 1991-92 and 2002-03. The third section presents the factors influencing of the extent of leased-in land and forms of lease- a descriptive analysis. The fourth section gives information on the factors influencing the extent of leased-in land and forms of lease, correlation and regression analysis results and last section discusses the conclusions of the chapter.

3.0.1. Objectives

i) To explain the impact of share of canal irrigation, the proportion of labor households and the proportion of non-cultivating households on the extent of tenancy and terms of lease.
ii) To analyze the impact of irrigation on the extent of land irrigated, assuming that other things remain constant.

3.0.2. Methodology

This study considers tenancy as the proportion of land under tenancy to the total cultivated area, and analyzes the inter-temporal NSSO data 1981-82 (37th Round), 1991-92 (48th Round), and 2002-03 (59th Round) pertaining to extent of leased-in land by operated area and terms of lease. The data covers rural India in 15 major states. In addition, data on household operational holdings is also available. But in this study, we have compared the percentage of land and the percentage of irrigated area under different sources of irrigation, and examined the relation between the two, across time and regions. Estimates relating to different sources of irrigation in the operated area as obtained from the 37th Round survey show the total irrigated area as a percentage of the total operated area, and the breakup of the total irrigated area by different sources of irrigation expressed as percentages. It is observed that canals, tube wells, tanks, and wells are the major sources of irrigation in most states. In more specific terms, canals are an important source of irrigation in almost all the states, and irrigation of the land included in the area operated is an important feature in determining the percentage distribution of total irrigated area by the source of irrigation and percentage of net area irrigated during any time of the agricultural year. Other influencing variables are: percentage of non-cultivating households and the percentage of households dependent on agricultural labor. We performed statistical tests of correlation and rank correlation to find the relation between variables. In addition, we performed a regression analysis for understanding the extent to which the selected variables influence the extent of leased-in land and forms of lease.

3.1. Trends in the Extent of Leased-in Land and Terms of Lease for 1981-82, 1991-92 and 2002-03

The National Sample Survey (NSS) estimates of different rounds, despite their limitations, form the basis of many discussions on the trends in the extent of leased-in land and forms of lease for the last three decades. The survey estimates the percentage of tenant holdings (holdings in the form of land) and percentage share of tenanted land in the operated area for

15 major states[4]. One of the important data problems generated in the study is related to the formation of some new states in recent times. The State of Bihar was bifurcated into Bihar and Jharkhand, the State of Madhya Pradesh was bifurcated into Madhya Pradesh and Chhattisgarh, and the State of Uttar Pradesh (UP) was bifurcated into UP and Uttaranchal, in the year 1999. Given the prominence of cross-sectional analysis in the study, we do not think this adds major errors into the analysis. For the purpose of analysis, the study considers only the proportion of land under tenancy and not the tenant holdings, based on the data from NSS for the last three decades 1981-82, 1991-92 and 2002-03.

3.1.0. Trends in Extent of Leased-in Land

The data for the extent of leased-in land are available from for 1953-54 (8th Round), 1961-62 (17th Round), 1970-71 (26th Round), 1981-82 (37th Round), 1991-92 (48th Round) and 2002-03 (59th Round). Historically, the extent of tenancy was observed to be changing in a majority of the states between 1953-54 and 2002-03; this phenomenon was observed across all the 15 major states. According to Sanyal (1972), there was a decline in agricultural tenancy during the period from 1953-54 to 1961-62. The 1953-54 data is not always comparable with later data because of the re-organization in mid-50s, which changed the geographical boundaries of many states. Similarly, Dharm Narain and Joshi (1972) mentioned that there was a decline in tenancy at the all-India level during this period. Another study by Bardhan (1976) stated that between 1953-54 and 1970-71, the extent of tenancy declined in most states, with notable exceptions in Bihar, Orissa and UP, where it slightly went up. All the above-mentioned studies have expressed the same reason for the decline of the extent of tenancy─ under -reporting the fear of tenancy reforms and due to modern methods of cultivation introduced during these periods. Comparing the data during 1960-61 and 1970-71, it is observed that the extent of tenancy significantly declined in Punjab, Haryana, Kerala, Jammu and Kashmir, Tamil Nadu, Karnataka, Maharashtra and Gujarat due to implementation of land reforms. According to Sharma (1995), the decline in the magnitude of tenancy between 1953-54 and 1971-72, at the all India level, was particularly sharp in respect of large holdings, followed by small holdings. However in

[4] Andhra Pradesh, Assam, Bihar, Gujarat, Haryana, Karnataka, Kerala, Madhya Pradesh, Maharashtra, Orissa, Punjab, Rajasthan, Tamil Nadu, Uttar Pradesh and West Bengal.

states such as Orissa, Uttar Pradesh and Bihar, tenancy was observed to have actually increased ─ the increase was relatively more in large holdings in Orissa and medium holdings in Uttar Pradesh, while in Bihar, the sub-marginal and marginal holdings leased-in were higher as a proportion of the operated area during 1971-72, compared to 1983-54. On the other hand, the extent of tenancy significantly increased in UP, Bihar, Orissa and Assam due to high concentration of landholdings (Sanyal, 1972). Recent studies (Haque, 2001; Sharma, 2000) have revealed that the proportion of leased-in area increased between 1981-82 and 1991-92 in most of the states due to increasing leasing-in of large holdings. Furthermore, the incidence of tenancy in 1991-92 was practically lower in all the states compared to that of 1971-72 due to under-reporting.

For the reference year 1981-82, the proportion of land leased-in (leased-in area as a proportion of the total operated land) was 7.18%. This proportion increased to 8.28% by 1991-92 and decreased to 6.5% by 2002-03, due to the decrease in operated land as a result of unconditional weather and rainfall. So the proportion of land under tenancy was below 10% of the operated land during the reference period and shows a fluctuating tendency.

Between the first and second periods, the land operated increased by approximately 4.5% and the land under tenancy increased by less than 1%, while there was a 5.4% decline in the area under operation, and about 2% decline in the area under cultivation. An expansion in the area under operation leads to an increase in the area under lease, but a decline in the area under operation leads to a more than proportionate decline in the area under tenancy. So when there is an increase in the operated land there is a larger proportion of land under owner operation when compared to lease; but when there is a decline in the area operated, the number households operating on lease declines at a higher rate, which may be due to the fact that the owner continues to operate but the lease households might not be demanding land in the market, leading to a decline in the proportion of leased-in land.

Table-3.1: Proportion of Leased-in Area to Operated Area in Various States

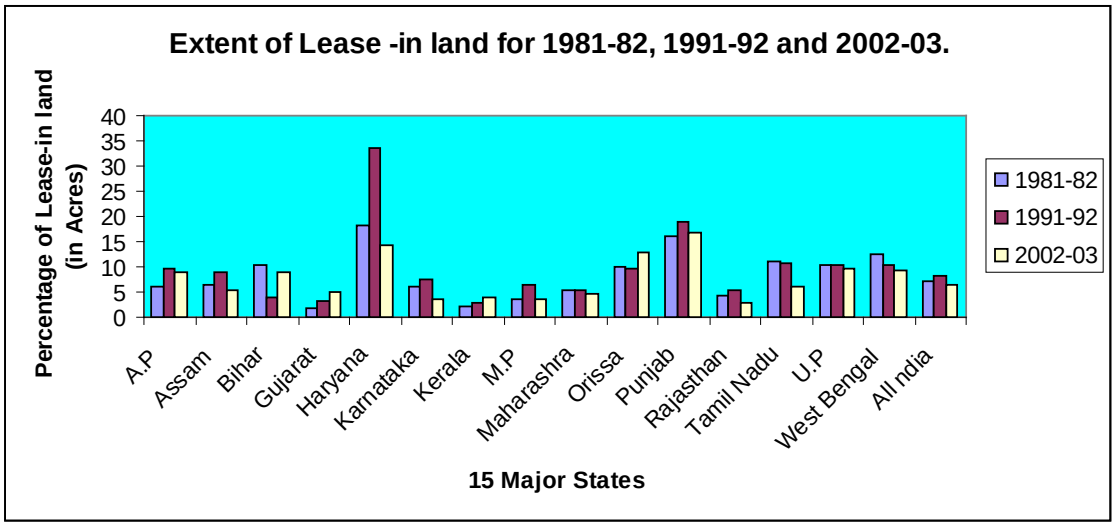
States	Leased-in area as a per cent of total operated area		
	1981-82	1991-92	2002-03
AP	6.23	9.57	9
Assam	6.35	8.87	5.3
Bihar	10.27	3.91	8.9
Gujarat	1.95	3.34	5.1
Haryana	18.22	33.74	14.4
Karnataka	6.04	7.43	3.6
Kerala	2.05	2.88	4
MP	3.56	6.3	3.6
Maharashtra	5.2	5.48	4.7
Orissa	9.92	9.48	13
Punjab	16.07	18.83	16.8
Rajasthan	4.31	5.19	2.8
Tamil Nadu	10.92	10.89	6
UP	10.24	10.49	9.5
West Bengal	12.34	10.4	9.3
All India	7.18	8.28	6.5

Source: Based on 37th, 48th and 59th Rounds of NSSO, Govt. of India, Report Nos. 331, 407 and 492.

However, there exist large inter-state variations in the proportion of land under lease. During the reference period, 1981-82, Haryana had the highest proportion of land under tenancy followed by Punjab. The lowest proportion of land under tenancy was in Gujarat followed by Kerala. During the second period also Haryana and Punjab had most of the operated land under tenancy; and by the third period, the State of Punjab was leading the states with the highest proportion of land under tenancy, followed by Haryana, Karnataka and Kerala, which had the lowest proportion of land under tenancy. The percentage of leased-in area in 2002-03 was highest in Punjab (17 per cent) and Haryana (14 per cent) the same two states that had reported the highest percentages of leased-in area in 1981-82 and 1991-92. Orissa also reported a high percentage (13 per cent) of leased-in area in 2002-03, while in all other major states, the percentage was less than 10. The two states, Haryana and Punjab, have consistently had a high proportion of land under tenancy in all the three reference periods. Between these two states, Haryana witnessed major fluctuations in the proportion of land under lease while Punjab witnessed minor fluctuations. These two states are generally identified as the agriculturally developed states, with large extent of land under

tenancy and also for the introduction of Green Revolution in agricultural practices. Included in the low tenancy states are Kerala and Gujarat in two reference periods, and Kerala and Karnataka in one reference period. The lower proportion in Kerala may be due to its lower proportion of land under operation and relatively successful tenancy regulations. Gujarat is generally identified as a non-agricultural state and so may be witnessing a lower extent of land under tenancy.

Figure-3.1: Distribution of Leased-in Land across the Different States for 1981-82, 1991-92 and 2002-03



Arranging the states in a descending order of percentage of area under tenancy, a pattern is seen to emerge between 33.8 per cent in Haryana and 2.9 per cent in Kerala. However, the states are divided into two groups according to the percentage of area under tenancy: as high tenancy states and low tenancy states. When the states are arranged in a descending order of the all-India average proportion of area leased-in land (above average high tenancy states and blow average low tenancy states), the high tenancy states are characterized by high irrigation, highly productive, and technologically developed states, while the low tenancy states are characterized by low irrigation, low productivity, and low technology.

Table-3.2: High Tenancy and Low Tenancy States during 1981-82, 1991-92 and 2002-03

Years	High Tenancy States (HTS)	Low Tenancy States (LTS)
1981-82	Haryana, Punjab, West Bengal, Tamil Nadu, Bihar, UP & Orissa	Assam, AP, Karnataka, Maharashtra, Rajasthan, MP, Kerala & Gujarat
1991-92	Haryana, Punjab, Tamil Nadu, UP, West Bengal, AP, Orissa & Assam	Karnataka, MP, Maharashtra, Rajasthan, Bihar, Gujarat & Kerala
2002-03	Punjab, Haryana, Orissa, UP, West Bengal, AP & Bihar	Tamil Nadu, Assam, Gujarat, Maharashtra, Kerala, MP, Karnataka & Rajasthan

Source: 37th, 48th and 59th Rounds of NSSO, Govt. of India
Report Nos: 331, 407 and 492.

The top seven states in the list are considered as high tenancy states and the rest as low tenancy states. Among the high tenancy incidence states, Haryana and Punjab occupied the top two positions for all the three decades. West Bengal, UP and Orissa are also observed to be under the high tenancy group in three decades. Bihar was under high tenancy group in 1981-82, but the extent of tenancy was reduced after 1981-82 ─ the reasons may be economic and political. Again during 2002-03 the state joined the high tenancy group. Andhra Pradesh was not in the group of high tenancy states during 1981-82, but it was classified under this group during 1991-92 and 2002-03. Gujarat and Kerala were the least tenancy states among the low tenancy group in 2002-03. Among the high tenancy states, Punjab and Haryana account for only 8.07 per cent of the total tenant households. The rest of states, i.e., Tamil Nadu, West Bengal, Uttar Pradesh, Bihar, Orissa and AP, accounted for 57.75 per cent of the total number of tenant households in the country ─ all of these recorded higher than average incidence of tenancy. Maharashtra and Karnataka also have pockets of high tenancy, and a large number of tenants, though they do not fall in the high tenancy category.

3.1.1: Trends in Terms of lease

The present section discusses the distribution of the terms of lease (fixed money, fixed produce, share of produce, and others) over states over the three time periods. It attempts to examine whether the terms of lease have changed over time and across the states. It also looks for any statistical regularity in the changes in the terms of lease.The terms of lease have been classified here into four groups as is generally done in the literature. They are:

share tenancy, fixed rent in cash, fixed rent in kind and 'others', which includes service contract, share of produce together with other terms, under usufructuary mortgage, and lease from relatives under no specified terms.

Table-3.3: Percentage Distribution of Leased-in Area by Terms of Lease in India

(Rural)

Terms of Lease	Percentage Distribution of Leased-in Area		
	1981-82 (37^{th})	1991-92 (48^{th})	2002-03 (59^{th})
Fixed Money	10.9	19	29.5
Fixed Produce	6.3	14.5	20.3
Share of Produce	41.9	34.4	40.3
Others	40.9	32.1	9.9
All	100.00	100.00	100.00

Source: 37^{th}, 48^{th} and 59^{th} Rounds of NSSO, Govt. of India
Report Nos: 331, 407 and 492.

We observe that sharecropping continues to be the dominant form of lease contract over the three periods. In the year 1981-82, sharecropping forms nearly 42 per cent of the contracts which was reduced to 35 per cent by 1991-92, and reached 40 per cent by 2002-03. Fixed rent in kind as well as in cash witnessed a significant increase during all the periods. The terms of lease identified as 'others' has shown a significant fall from 41 per cent in 1981-82 to nearly 10 per cent by 2002-03.

Table-3.4: Percentage Distribution of Area Leased-in by Terms of Lease for each Major State (during 1981-82, 1991-92 and 2002-03).

States	Year	Fixed Money	Fixed Produce	Share of Produce	Others	All
Andhra Pradesh	2002-03	31.6	37.9	24	6.6	100
	1991-92	25.9	26.8	28.9	18.4	100
	1981-82	13	11.1	8.8	67.1	100
Assam	2002-03	15.8	3.6	55	25.6	100
	1991-92	17	4	27.8	51.2	100
	1981-82	15.4	8.4	35.3	40.9	100
Bihar	2002-03	12	17.5	67	3.5	100
	1991-92	9.5	12.8	43.5	34.2	100
	1981-82	6.5	3.6	73.3	16.6	100
Gujarat	2002-03	10.7	46.3	37.9	5.1	100
	1991-92	39.9	1.6	23.7	34.8	100
	1981-82	5.1	0.5	9.7	84.6	100
Haryana	2002-03	71.2	9.8	15.8	3.2	100
	1991-92	61.4	5.2	19.9	13.5	100
	1981-82	24.2	10.8	41.2	23.8	100
Karnataka	2002-03	32.4	41.1	24.8	1.7	100
	1991-92	20.4	14.7	28.6	36.3	100
	1981-82	3.6	4.7	29.3	62.4	100
Kerala	2002-03	39.9	7.5	12	40.8	100
	1991-92	15.9	0	2.1	82	100
	1981-82	3.4	0	13.2	83.9	100
Madhya Pradesh	2002-03	18.3	32.5	39	10.2	100
	1991-92	15.3	21.4	24.9	38.4	100
	1981-82	1.7	1.1	27.8	69.4	100
Maharashtra	2002-03	26.2	9	37.5	27.3	100
	1991-92	36.2	6.5	20.9	36.4	100
	1981-82	11	2.3	48.5	38.2	100
Orissa	2002-03	11.1	7.8	73	8.1	100
	1991-92	19.7	4.7	50.9	24.7	100
	1981-82	5.1	8.1	42	44.8	100
Punjab	2002-03	79.2	1.5	15.3	4	100
	1991-92	49.2	18.2	11.3	21.3	100
	1981-82	42.1	4.6	39.9	13.4	100
Rajasthan	2002-03	35	17.7	39.3	8	100
	1991-92	15.2	19.4	23.4	42	100
	1981-82	3.5	1.4	21.6	73.5	100
Tamil Nadu	2002-03	32	30	22.9	15.1	100
	1991-92	32.4	20.5	16.1	31	100
	1981-82	19.2	19.9	36.5	24.4	100
Uttar Pradesh	2002-03	23.8	12.9	52.9	10.4	100
	1991-92	9.2	15.2	46.5	29.1	100
	1981-82	8.6	4.9	50.1	36.4	100
West Bengal	2002-03	23.7	28.5	34.9	12.9	100
	1991-92	8.6	11.7	46.5	33.2	100
	1981-82	2.8	11.9	55.6	29.7	100
India	2002-03	29.5	20.3	40.3	9.9	100
	1991-92	19	14.5	34.4	32.1	100
	1981-82	10.9	6.3	41.9	40.9	100

Source: 37th, 48th and 59th Rounds of NSSO, Govt. of India
Report Nos: 331, 407 and 492.

From the Table 3.4, it can be observed that during 1981-82, the distributions for the individual states reveal a wide variation. Sharecropping is observed to be the most dominant form of lease in the states of Andhra Pradesh, Assam, Bihar, Karnataka, Madhya Pradesh, Orissa, Rajasthan, Uttar Pradesh, Tamil Nadu, and West Bengal during1981-82. These states are relatively under-developed from the point of view of agriculture. In the relatively

developed states of Punjab and Haryana, the fixed money/cash is the main term of lease, and except in Kerala, in all other states, crop-sharing tenancy accounts for a significant part of the leased-in area. There were also a significant number of 'other' forms of lease in most during 1981-82.

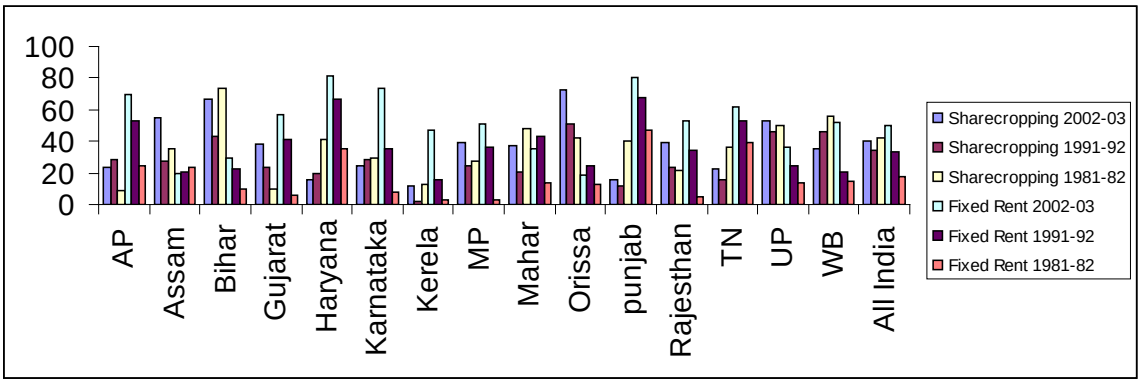
Further, Table 3.4 indicates that Haryana and Punjab are the two most agriculturally advanced states in the country, and the most prevalent forms of contracts are fixed rent in cash. Over 61 per cent and 49 per cent of the tenanted land was contracted for fixed money in Haryana and Punjab respectively. In Tamil Nadu and Andhra Pradesh, the, 'fixed rent' tenancies were observed to be the major components of the leased-in area. The combined share of 'fixed money' and 'fixed produce' in the total leased-in area was about 53 per cent. Sharecropping was found to be the most prevalent form of tenancy in Orissa (51%), West Bengal (46%), Uttar Pradesh (46%), and Bihar (44%). We observe that except in Kerala, only 11.23 per cent of the leased-in area was under crop-sharing tenancy, and there is a considerable area under plantation crops. Moreover, fixed cash tenancy is seen to be commonly practiced in the state, while fixed produce is particularly negligible.

It is also observed that predominance of paddy in the area under crop-sharing tenancy is as high as 46.5 per cent in West Bengal and Uttar Pradesh, 43.5 per cent in Bihar, while the same is about 23.4 percent in Punjab, and 20 per cent in Haryana. Crop-sharing arrangements seem to be the common form of leasing-out land in predominantly paddy areas, particularly in the mono crop areas. However, there was a significant decline in this aspect from 1981-82 to 1991-92 in the states of West Bengal, Uttar Pradesh, Tamil Nadu, Haryana, Punjab and Bihar. Two states ─ Orissa and Rajasthan ─ witnessed an increased trend of sharecropping from 1981-82 to 1991-92. Cash-rent tenancy was important in Karnataka (20 per cent), Andhra Pradesh (25.9), Maharashtra (36.2), Gujarat (39.9), Haryana (61.4), and Punjab (49.2) in 1991-92. Most of these states witnessed considerable area under oilseeds and cotton. Cash-rent tenancy seems to be an important form of tenancy in areas where oilseeds and cotton are important crops. In Punjab also, a large number of persons who are engaged in services and professions seem to have given their land on cash rent. Cash rent tenancy seems to be relatively more important to big farmers, and it is observed to have increased in paddy-growing areas.

Fixed produce or fixed kind rent seemed to be important in Kerala (36.6 per cent) during 1971-72, but it suddenly disappeared. It also seemed to be important in several states such as AP (26.8 per cent), Madhya Pradesh (21.4 per cent), and Tamil Nadu (20.5 per cent). However it is observed to have increased, at the all India level, since 1971-72 to 1991-92. Miscellaneous types of tenancies are observed to be important in Rajasthan (53 per cent), Madhya Pradesh (45.6 per cent), Assam (25.5 per cent), Gujarat (30 per cent), Kerala (36.5 per cent), Orissa (37.2 per cent), and UP (32.9 per cent). If one summarizes the inter-state variations in tenancies, it appears that crop-sharing tenancy is predominant in paddy and wheat growing areas; cash-rent tenancy is predominant in oilseeds and cotton growing areas; and fixed kind rent or fixed produce tenancy is predominant in plantation crop areas. According to Rao (1971), crop-sharing tenancy is predominant in areas of relative economic certainty (paddy areas, which also happen to command more irrigation than other crops), where the scope for decision-making is limited; whereas cash-rent tenancy is more important in areas with relative economic uncertainty.

The changes in the terms of tenancy are presented in the table 3.4. The proportion of operated area leased-in under shared tenancy is seen to decline continuously in about 10 major states. In the remaining states, it is seen to decline between 1971-72 and1981-82, and increase between 1981-82 and 1991-92. The proportion of operated area leased-in under fixed rent tenancy, especially under fixed money, also exhibited a similar trend. However, in some states, notably in Andhra Pradesh, Gujarat, Tamil Nadu, and West Bengal, the proportion of operated area leased-in under ‘other’ terms increased during the 70s but declined thereafter.

Figure-3.2: Proportion of Land Distribution in the Forms of Lease across the Different States during 1981-82, 1991-92 and 2002-03.



At the all India level, the table 5 shows that sharecropping (40.3 per cent) is still significant. Figure 3.2 shows that there has been a shift in most states from fixed rent to sharecropping between 1991-92 and 2002-03. All states have preferred to move to fixed rent, though sharecropping is still dominant in some under-developed states such as Orissa (73 per cent), Bihar (67 per cent), Assam (55 per cent), and Uttar Pradesh (52.9 per cent). However, fixed money is dominant in Punjab (79.2 per cent) and Haryana (71.2 per cent), and holds the top position in the extent of leased-in land. There was a drastic decline in the proportion of 'other terms of lease' from 40.9 per cent during 1981-82 to 9.9 per cent in 2002-03. The states in which other terms of lease were observed to be predominant are: Kerala (40.8 per cent), Maharashtra (27.3 per cent), and Assam (25.6 per cent). Fixed money was found to increase from 15 to 20 per cent during the period from 1981-82 to 2002-03. Similarly, fixed kind also increased over the three decades and across the states from 14 to 25 per cent.

3.2. Factors Influencing of the Extent of Leased-in Land and Form of Lease A Descriptive Analysis

The extent of land under irrigation can be seen as an equilibrium quantity that is transacted in the market for lease. The quantity that is transacted is a result of the play of demand side and supply side factors. Any increase/decrease in the quantity transacted is a response to these factors. If irrigation is seen to have any impact on the land transacted in the lease market, it can influence either the demand side or the supply side factors, in addition to other factors such as land distribution, distribution of labor force, etc. Here an attempt is

made to analyze the impact of irrigation on the demand side and the supply side in the lease market. The analysis is predominantly a cross-sectional analysis using pooled data for regression analysis.

The structure of the economy under analysis is one where the land market is incompletely formed. In other words, the transactions in the land market are thin and look to be more as a response to supply side constraints faced by the agents. In addition the state policies with respect to land market also constraint the agents from expanding to their scale of operation. So, it is generally observed that the land market is inactive and the 'potential demand' in the land market gets spilled over to the lease market (Bardhan and Srinivasan, 1971). The labor market is also known to reflect excess supply, and there is scope that the excess supply constraints also get spilled over to the land lease market. It is under these conditions that we are studying the land-lease market. The provision of irrigation has two impacts on the agricultural productivity as discussed in the previous section: It has the potential to increase the productivity (Vaidyanathan, 1986; Dhawan, 1985) as well as reduce the variability in the productivity (Narayan and Nair, 1994). In the Indian situation, the states which have a larger proportion of land under irrigation are also the states with a higher proportion of land using modern technology.

Factors Used in the Analysis

3.2.0. Irrigation and Extent of Land under Tenancy

Indian agriculture depends on nature, which man cannot control; this implies that Indian agriculture is uncertain. So, this sector may not able to provide certain employment for the poor. Irrigation plays an important role in enhancing crop yields, intensity of cropping, farm output stability, and land productivity (Dhawan, 1985). Labor employment depends on many factors such as irrigation potential, cropping pattern, intensity of cropping, and other labor-intensive activities (Suryawanshi and Kapase, 1985). If provided with public irrigation facilities, the landless labor will get alternative employment by entering into the lease market, as they face more employment uncertainty in the rural labor market. The small owners who leased-out land will have the incentive to cultivate their land themselves. However, as they do not have sufficient land for their survival, they have to go for leased-in

land. The same factors increase productivity and the rental value of the land, while reducing uncertainty in yield. The impact of irrigation on agricultural production in India has been examined in several studies. These studies observed the differential impact of irrigation on different socio-economic conditions of people (Rajpurohit and Koilpilla, 1979; Alexander, 1979). It is observed that irrigation has led to increase in agricultural productivity, raised the standard of living of rural people, and induced social change and modernization. Some studies also reported that irrigation brings prosperity to all command areas. Development of irrigation requires successful implementation of irrigation technology by appropriate institutions (Coward Jr., 1980) that influence the decision-making in agriculture (Bromley, 1982), resulting in increased agricultural wages, employment, and yield per acre (Krishnamurthy, 1959; Jha, 1967; Mishra and Vivekanand, 1979; Bromley, 1982).

Observing the inter-state variation in the use of irrigation, it is seen that Punjab and Haryana were the two most irrigated states, and the proportion of area under tenancy has been high during the three decades. Where there is high proportion of irrigation, there is reportedly more area under tenancy. The proportion of area under tenancy during 1971-72 and 1981-82 has sharply declined in all states, but the proportion of area under irrigation has increased; these changes have both political and economic reasons (implementation of land reforms, etc.). However, between 1981-82 and 1991-92 there was a marginal increase in the proportion of operated area leased-in, whereas the proportion of irrigated area also increased in most states. Punjab achieved the highest percentage of irrigated area (90 per cent), followed by Haryana (70 percent), UP (55 per cent), Tamil Nadu (32 per cent), West Bengal (32 percent), Andhra Pradesh (28 percent), and Orissa (27 percent). These are the only states with domination in the proportion of area under tenancy. Bihar has reported high irrigation (31 per cent), but the proportion of area under tenancy is very less (3.91 percent) because it is legally banned. The percentage of irrigation was about 20 per cent in MP, and ranged between 10 to18 per cent in the remaining states except in Assam, which had an extremely low proportion of 19 per cent only. This may be because of heavy rainfall during the major part of the year. Assam does not practically need any irrigation. Finally, there is a proportionate relationship between the percentage of irrigated area and the percentage of leased-in area.

3.2.1. Demand for Land for Lease by Agricultural Labor Households

There are two types of people who demand for land in the land lease market: the cultivators (potential or actual), who demand land in order to appropriate scale advantage in production, as the extent of land they own is not enough for the purpose; and the landless agricultural labor households, who demand land in order to meet their subsistence needs. The former households are generally identified as 'capitalist farmers' / market-oriented farmers (Pattnaik, 1994), while the latter are generally identified as subsistence farmers (Pattnaik, 1994; Bhaduri, 1984). According to Bardhan (1984), "The larger the extent of unemployment in the wage labor market faced by the landless labor households, the higher the extent of tenancy" (p. 135). This form of demand is generally expressed in terms of proportion of land under pure tenants. With the provision of irrigation, there is a potential for an increase in demand by both sections, i.e., the capitalist as well as the landless labor households, as specified in the second chapter. Here an attempt is made to present data on the proportion of agricultural labor households in the states and also the proportion of pure/mixed tenants over states in the three reference periods.

NSSO data shows the percentage distribution of agricultural labor and pure tenant households across the states for 1981-82, 1991-92 and 2002-03. In all levels, the percentage of agricultural labor households is observed to steadily increase from 11.33 to 14.4 per cent during the period from 1981-82 to 2002-03. The states, namely Andhra Pradesh, Bihar, Gujarath, Karnataka, Kerala, MP, Maharashtra, Orissa, Rajasthan, and West Bengal have witnessed an increase in the percentage of agricultural labor households from 1981-82 to 2002-03. However, in some states like Haryana and Punjab, the percentage of labor households declined during the period from 1981-82 to 2002. In Punjab, the agricultural labor households accounted for 17.34 per cent in 1981-82, which declined to about 10.9 per cent in 2002-03. Similarly, in Haryana, they accounted for 12.6 per cent in 1981-82, which declined to 6.7 per cent in 2002-03. It is further observed that pure tenant households have also been declining from 1981-82 to 2002-03 (from 3.17% to 0.7%) all over India.

3.2.2: Supply of Land for Lease to Non-Cultivating Peasant Households

A major source of supply of land in the land lease market includes non-cultivating households that might own land (Parthasarathy, 1967). There could be two types of non-

cultivating households owning land in the rural sector: One is a product of the colonial land settlement process, such as the Zamindars, Inamdars etc., while the other includes land owning households that used to cultivate the land but have now diversified to non-agricultural activities. The recent NSSO 59th Round, Report No. 500, titled, "Asset and Liabilities of Households" shows that the proportion of non-cultivating households is increasing in the rural areas (Vijay, 2012). The study covers the rural non-cultivating households that own land as well. The existence of such households implies the need to find some cultivator to cultivate the land. One of the options is to lease out the land while the second is to use permanent farm servants to organize production. The main demanders of land lease could either be the agricultural labor households or the rich peasants. Ownership of land by non-cultivators would necessitate the existence of land-lease arrangements provided there exists a sizeable number of agricultural labor households. As these rounds do not have information on the nature of land lease arrangents or the land distribution, an attempt was made to infer some of these features based on the data existing in the report. The report gives data on the proportion of agricultural labor households to the total number of households in the state. However, it is not possible to infer the number or proportion of households involved in tenancy; one can only infer the proportion of pure tenants in the economy.

In the agriculturally developed states of Haryana and Punjab the proportion of non-cultivators and the value of the land owned by them are nearly equal to the national average. But the proportion of agricultural laborers as well as the share of pure tenants is very low in these two states. The industrially developed state of TN has a very high proportion of non-cultivating households as well as a very high share of value of land owned by non-cultivators. In this state, the proportion of agricultural laborers in the total population is also very high and so is the proportion of pure tenants among the total number of cultivators in the economy. The state of AP has a very high share of non-cultivating households and so is the value of the land owned by non-cultivators. This state also has a very high share of agricultural laborer and pure tenants. The state of Maharashtra also follows the same trend.

Table-3.5: The Percentage of Canal irrigated Area, Agricultural Labor Households and Non-Cultivating Peasant Households in Different States for 1981-82, 1991-92 and 2002-03

States	Percentage of Canal Irrigated Area			Percentage of Agricultural Labor Households			Percentage of Non-Cultivating Peasant Households		
	1981-82	1991-92	2002-03	1981-82	1991-92	2002-03	1981-82	1991-92	2002-03
Andhra Pradesh	5.55	12	12	18.27	19.8	20.9	27.30	38.11	50.77
Assam	0.3	1.28	2	6.72	8	7.6	5.69	24.99	35.07
Bihar	9.34	5.57	11	14.96	19	21.6	21.72	29.00	38.80
Gujarat	3	4.11	5	11.04	17.9	15.8	15.72	33.76	38.84
Haryana	35.89	36.31	18	12.6	7.8	6.7	42.45	39.30	35.84
Karnataka	4.37	5.23	8	11	14.7	21.8	13.80	25.37	24.04
Kerala	6.3	4.27	8	1.8	3.6	6.6	1.49	17.96	48.07
Madhya Pradesh	4.25	5.96	2	9.51	12.7	19.6	15.73	25.52	32.07
Maharashtra	2.47	3.96	4	16.01	20.2	20.4	24.77	31.44	38.02
Orissa	8.37	8.27	14	8.39	12	14.2	12.79	22.92	34.05
Punjab	26.35	10.91	8	17.34	20.1	10.9	35.09	54.18	43.98
Rajasthan	2.62	9.32	4	2.72	4.9	4	11.82	16.44	23.51
Tamil Nadu	13.5	11.8	10	15.69	26.6	22.6	21.67	49.88	59.50
Uttar Pradesh	17.77	14.21	11	8.83	7.6	6.8	20.57	22.53	24.26
West Bengal	8.4	12.53	10	8.92	13.9	14.9	15.96	30.74	41.11
All India	8.16	9.22	8	11.33	14.2	14.4	19.10	29.57	36.65

Source: Based on 37th, 48th and 59th Rounds of NSSO, Govt. of India,
Report Nos.: 331, 407 and 492.

3.3. Factors Influencing the Extent of Leased-in Land and Forms of Lease: Correlation and Regression Analysis

As discussed earlier, tenancy is a product of historical, political, as well as economic factors. In addition, the study of the extent of land under tenancy, without explicitly bringing in the terms of exchange has its own problems in interpretations. Recognizing these limitations, an attempt is made to analyze the factors influencing the extent of land under tenancy in the 15 states under study, and perform a 'pooled' regression for the period of analysis. In the literature, one witnesses two types of analyses: One is the micro-based village study, which attempts to analyse the missing/incomplete markets influencing the land lease market (Bliss and Stren, 1982; Vijay and Sreenivasulu, 2005), and the second includes studies utilizing secondary data to analyse the extent of land under lease (Sharam, 1995; Haque, 2000;

Murty, 2004; Nadkarni, 1976). Given that this chapter utilizes secondary data, we briefly review the second set of literature and causal mechanisms. According to Bardhan (1984), the extent of tenancy is high where (i) land improvement is better; (ii) there is low production uncertainty; (iii) labor intensity of crop harvested is larger; and (iv) the extent of unemployment in the wage labor market is greater. In his analysis, Bardhan gives prominence to demand side factors in the lease market, but has not specified conditions for changes in the supply side in the market. According to Parthasarathy (1967), the Brahmin households who own land but do not cultivate, would either depend on casual/attached labor or lease-out their lands. According to Laxminarayan and Tyagi (1982), there are two main reasons for leasing-out land: one is the capital intensive and highly profitable nature of HYV technology (commercial agriculture), which has made leasing-in land profitable, and the other is a large proportion of non-cultivators or resident outsiders ─ this is seen to be true in Punjab and Haryana also (Sawant, 1991). Visaria and Basant (1993) examined the NSS and census data and documented a clear increase in the share of non-agricultural employment as one of the reasons for leasing-out land. Another relevant point is that there is also some evidence that larger farmers invest their surpluses into non-agricultural activities (Rutten, 1991; Harriss, 1991). In the correlation analysis, one has introduced a set of demand side factors such as the percentage of agricultural labor households, the percentage of non-agricultural households, and the share of canal irrigation.

3.4. Factors Influencing the Extent of Land under Tenancy: A Correlation Exercise

Correlation analysis can be used to find out the magnitude of relationship between leased-in land and other variables such as the percentage of agricultural labor households, the percentage of non-cultivating households, and the share of canal irrigation on the basis of qualitative data (NSSO) on 15 major states for three rounds (three points of time) ─ the 37th Round 1981-82, 48th Round 1991-92, and 59th Round 2002-03.

The limits of the coefficient of correlation are +1 and -1, with ‘0’ in between. A correlation coefficient of +1 indicates a perfect positive relationship between leased-in land and the other variables mentioned above ─ a positive correlation implies that an increase (or decrease) in the value of one variable is accompanied by an increase (or decrease) in the

value of the other variable. Similarly, a correlation coefficient of -1 indicates a perfect negative relationship between the two quantitative variables ─ a negative correlation implies that an increase (or decrease) in the value of one variable is accompanied by a decrease (or increase) in the value of the other variable. A correlation coefficient of '0' indicates the absence of any relationship between the two quantitative variables. This situation occurs when there is no variability in one or both the quantitative variables. In addition to this analysis, another kind of correlation, i.e., rank order correlation, is used to measure the strength of the associations between the variables.

Table-3.6: Estimated Results of Correlation of Factors Affecting Leased-in Land for 1981-82, 1991-92 and 2002-03

Variables	1981-82	1991-92	2002-03
Extent of Lease vs. Share of Canal Irrigated	0.868(**)	0.901(**)	0.698(**)
Extent of Lease vs. Percentage of Agricultural Laborers	0.151	0.13	0.094
Extent of Lease vs. Percentage of Non-Cultivating Peasant Households	.647(**)	0.466	0.03

*Note: *Correlation is significant at the 0.05 level (2-tailed).*
*** Correlation is significant at the 0.01 level (2-tailed).*

The correlation between the extent of lease and non-cultivating households was found to be 0.64. This implies that they are positively correlated with each other, and the two variables move in a similar direction. The share of canal irrigation and non-cultivating households were highly correlated with the extent of lease, and this correlation was also statistically significant between the variables. The analysis indicates that the correlation between the extent of lease and the proportion of agricultural labor households was negative and the correlation value was not statistically significant during the three decades (1981-81, 1991-92 and 2002-03). Whereas in 1991-92, it was found that the extent of lease and share of canal irrigation were positively correlated to each other, none of the variables were found to be significant in this year. Other variables showed positive but insignificant correlation. The extent of lease and share of canal irrigation were found to have high correlation of statistical significance during the periods 1981-81, 1991-92 and 2002-03.

3.4.0. Rank Correlation Exercise:

All the computed variables are expressed or measured in ranks because the original measurement is weak, and the values of leased-in land and other variables such as percentage of agricultural labor households, pure tenant households, share of canal irrigation, and non-cultivating households are measured on an equal-interval scale. It is also possible to apply the apparatus of linear correlation to cases where X and Y are measured on a merely ordinal scale. When applied to ordinal data, the measure of correlation is referred to as the Spearman rank-order correlation coefficient, typically symbolized as r_s. Suppose, the variable ranks N=15, then rank#1 implies highest and rank#15 implies lowest across 15 major states in India.

Table-3.7: Estimated Results of Rank Correlation of Factors Affecting Leased-in Extent for 1981-82, 1991-92 and 2002-03

States	Years	Share of Canal Irrigation	Percentage of Agricultural Laborer Households	Percentage of Non-Cultivating Peasant Households
All States (15 Major states)	1981-82	0.869(0.000)**	0.420(0.106)	0.732(0.001)**
	1991-92	0.900(0.000)**	-0.068(0.822)	0.521(0.038)*
	2002-03	0.697(0.003)**	-0.177(0.513)	0.166(0.538)
High Irrigated States	1981-82	0.892(0.007)**	-0.018(0.969)	-0.327(0.474)
	1991-92	0.919(0.003)**	0.295(0.521)	0.040(0.932)
	2002-03	0.177(0.704)	-0.153(0.743)	0.252(0.586)
Low Irrigated States	1981-82	0.291(0.485)	0.164(0.698)	0.276(0.508)
	1991-92	0.063(0.882)	0.292(0.482)	0.242(0.564)
	2002-03	0.755(0.030)*	0.651(0.080)	0.246(0.557)
Pooled Data		0.815(0.000)**	0.024(0.871)	0.364(0.011)*

Note: Dependent variable leased-in extent.

@ means non-cultivating peasant households.

**Correlation is significant at the 0.05 level (2-tailed).*

*** Correlation is significant at the 0.01 level (2-tailed).*

The rank correlation analysis was carried out for the years 1981-82, 1991-92 and 2002-03 across the 15 major states classified as high and low irrigated states with the extent of leased-in land irrigation, canal irrigation, and proportion of agricultural laborers, pure tenants, and non-cultivating peasant households, as dependent variables. It is observed that there is no consistency of relationship between irrigation and leased-in land in the high and

low irrigation states. The relationship between canal and the extent of leased-in land was found to be statistically significant for the three periods except in the low irrigated states, where there was negative correlation between total irrigation and extent of leased-in land.

The rank correlation between leased-in extent and the non-cultivating peasant households was 0.732 (0.001) in 1981-82, which means that they are statistically significant and positively correlated with each other; the two variables are found to move in a similar direction in 1991-92. The correlation between leased-in extent and the share of agricultural laborers was 0.15. Thus, the correlation between the two variables is not significant and it was negative for 1991-92, 2002-03, and for the high irrigated states in 2002-03. The share of canal irrigation and the extent of lease have a highly correlated and statistically significant relationship for all three years; and this was the case in high irrigated states for 1981-82 and 1991-92. The analysis results in a negative sign indicating that the relationship between the proportion of pure tenants and leased-in land is not statistically significant during the reference periods (1981-81, 1991-92, and 2002-03). Further, the pooled data analysis revealed that the extent of lease and share of total irrigation are positively correlated with each other, though none of the variables are significant.

3.4.1. Form of Lease

Table-3.8: Correlation of Factors affecting Sharecropping for 1981-82, 1991-92 and 2002-03

Variables	1981-82	1991-92	2002-03
Extent of Lease vs. Share of Canal Irrigated	-0.259	-0.012	-0.233
Extent of Lease vs. Percentage of Agricultural Laborers	0.243	-0.023	0.056
Extent of Lease vs. Percentage Non-Cultivating Households	0.184	-0.299	-0.542

The table 3.8 shows the correlation between sharecropping and other factors like share of canal irrigation, percentage of agricultural labourers and non-cultivating households. The share of canal irrigation and extent of land under sharecropping have negative and the

correlation value was not statistically significant during 1981-82, 1991-92 and 2002-03. The analysis indicates that the correlation between extent of land under sharecropping and other two factors like percentage of agricultural labourers and non-cultivating households were found to be insignificant during all three years. However, the percentages of non-cultivating households were found to be negative correlation with the extent of land under sharecropping during 1991-92 and 2002-03.

3.5. Factors Influencing Extent of Land under Tenancy: A Regression Exercise

Earlier studies such as Sharma (1995), Haque (2001), Murty (2004), and Nadkarni (1976) have used the regression model using secondary data to analyse the extent of land under lease in different states in India. For our analysis, we define as dependent variables the extent of leased-in land in terms of the actual percentage of land leased-in by the total area of operated land in 15 major states for three reference periods, i.e., 1981-82, 1991-92 and 2002-03, as a pooled data. The rest of the variables are included as independent variables, such as the percentage of canal irrigation, agricultural laborer households, and the non-cultivating households across the states for 1981-82, 1991-92 and 2002-03. The significance of the coefficients is judged at three levels, viz. 1%, 5%, and 10%.

Table-3.9: Estimated Regression Result of Factors affecting Leased-in Land and Form of Lease (Sharecropping)

	Dependent Variable: Percentage of Leased-in Land			Dependent Variable: Percentage of Land under Sharecropping		
Variables	Coefficients	t	Sig.	Coefficients	t	Sig.
Constant	2.86	1.60	0.12	42.36	6.27	0.00*
Percentage of Canal Irrigation	0.14	4.55	0.00*	0.15	1.31	0.20
Percentage of Agricultural Labourer Households	-0.37	-2.48	0.02**	*1.55*	2.77	0.01*
Percentage of Non-Cultivating Households	0.24	2.54	0.02**	-1.16	-3.29	0.00*
Years						
1991-92	-1.31	-0.79	0.44	-0.86	-0.14	0.89
2002-03	-5.33	-2.77	0.01*	14.54	2.00	0.05**
R Square	0.553			0.267		

*Note: * 1% level of significance; ** 5% level of significance; ***10% level of significance.*

The dependent variable in the equation is the extent of lease and the independent variables are the percentage of agricultural labor, non-cultivating households, and canal-irrigated area. For the analysis, we have used pooled data for the three reference periods. The regression result shows that the impact of proportion of agricultural labourer households on the extent of lease is negative and insignificant. The proportion of non-cultivating households showed a positive relationship with the extent of lease, which is statistically insignificant. The analysis also shows that the impact of canal irrigation on the extent of lease was found to be positive and significant. In the case of sharecropping as dependent variable, non-cultivating households were found negative and significant and positive and significant for agricultural labourers.

3.6. Conclusions

The study found that leased-in land as percentage of the operated area varied widely from state to state over the period, ranging from 1.9 per cent in Gujarat to 18.22 per cent in Haryana (in 1981-82); from 2.9 per cent in Kerala to 33.7 per cent in Haryana (in 1991-92); and from 3.6 per cent in Karnataka to 16.8 per cent in Punjab (in 2002-03); and in general, it was found to decline from 1991-92 to 2002-03. As resulted, the study has found the states of Haryana and Punjab were in the top position in the country, in terms of high proportion of leased-in extent as well as high proportion of irrigated land. The states which are accounted low proportion of leased-in land have represented less proportion of irrigated area. However, fixed rent form of lease was high in high irrigated states like Punjab and Haryana.

The correlation analysis reveals that the percentage of non- cultivating households and share of land under canal irrigation are statistically significant to the extent of leased-in land in the year of 1981-82. The share of land under canal irrigation is positively correlated with the extent of leased-in land for all the three years 1981-82, 1991-92 and 2002-03. In the case of regression analysis, all the variables witnessed positive correlation with the extent of leased-in land, though not statistically significant. We also observed the trend on terms of lease: most of the states like Andhra Pradesh, Haryana, Kerala, Punjab, and West Bengal have moved towards fixed rent form of lease, while some states like Bihar, Orissa, Uttar Pradesh,

Rajasthan, and Assam still have sharecropping as a dominant lease form; and in states like Kerala, and Maharashtra, “other terms” of lease are dominant, which are reportedly not proper forms of lease. In this chapter we discussed on inter –state variations on extent of tenancy and forms of lease. However, the relation between irrigation and extent of leased-in land. In this chapter we could not find out who give leased-in land to whom and caste grammar on land lease market. In the next chapters, we will be answered above mentioned issues at village level. We will be discussed on surveyed villages, their structure and land lease market situations in the next chapter.

CHAPTER 4

THEIR STRUCTURE OF VILLAGE ECONOMIES AND LAND LEASE MARKET: AN ANALYSIS OF SURVEYED VILLAGES

4.0. Introduction

Andhra Pradesh is classified into three broad regions, viz. Coastal Andhra, Rayalaseema and Telangana, for geographical distinction. Historically, these regions have been separated by their own characteristics or regional features. There is a significant heterogeneity among the three regions, as well as within the regions. Therefore, these three regions were classified into six regions (Krishna Rao and Subrahmanyam, 2002), Rao and Dev, 2003,), viz. North Coastal Andhra, South Coastal Andhra, Rayalaseema, North Telangana, South Telangana and Hyderabad, based on agro-climatic conditions and levels of development. But the present study concentrates on North Coastal Andhra, South Coastal Andhra, North Telangana, and South Telangana regions except Rayalaseema. The present chapter attempts to focus on the impact of structure of village economy interms of class and caste on the land lease market in the different agro-climatic study villages. The nature of village structure and regional disparities can play a significant role on land lease exchanges. For example, leased-in land is high in the South Coastal region and less in the Telangana regions because of assured sources of irrigation, nature of cropping pattern, and structure of the village economy

4.0.1. Objectives

i) To study the characteristics of the surveyed villages such as sources of irrigation and cropping pattern.

ii) To find the land distribution structure of the study villages.

iii) To understand the extent of tenancy and forms of lease among the surveyed villages.

4.0.2. Methodology and Data Collected in Surveyed Villages

The researcher has selected a few villages from different agro-climatic zones of Andhra Pradesh to analyze the functioning of the land lease market. The study villages have been chosen from three different regions, i.e., Telangana, Rayalaseema and Coastal Andhra. The researcher collected information on household resources, land lease market functioning, determinants of land lease, and so on, from the heads of the households through structured questionnaires. However, considering the levels of development, the regions can be segregated into five regions: South Coastal Andhra comprising the districts of East Godavari, West Godavari, Krishna, Guntur, Prakasam and Nellore, occupies the top place, with a high index of output per hectare. Next in the list comes the region of North Telangana, comprising the districts of Nizamabad, Adilabad, Karimnagar and Khammam. North Coastal Andhra comprising of the districts of Srikakulam, Vizianagaram and Visakhapatnam occupies the third place. Rayalaseema region, comprising the districts of Cuddapah, Kurnool, Ananthpur and Chittoor occupies the fourth place, and South Telangana region comprising the districts of Rangareddy, Hyderabad, Mahabubnagar, Medak and Nalgonda, occupies the fifth place. Due to the possible vastness in the study, the researcher has intended to limit the study to the villages selected from only four regions (regions other than Rayalaseema). Nine villages have been selected for the study from the four regions, based on the source of irrigation. In South Coastal Andhra, three villages namely, Kothapalli, Mentipudi and Seethampet have been selected for the study. Of these Kothapalli and Mentipudi are 100 per cent canal irrigated, while Seethampet is predominantly irrigated through bore wells. In the North Telangana region, two villages namely, Chinnapur and Nagaram have been selected for the study. Chinnapur is irrigated through canal and bore wells, whereas Nagaram is irrigated through tanks and bore wells. In the North Coastal region, two villages namely, Jonanki and Bonthala Koduru (B.Koduru) have been selected for the purpose of the study. Jonanki is predominantly irrigated through tanks while Bonthala Koduru is irrigated through bore wells. And in the South Telangana Region, two villages, namely Arepalli and Tatiparthy have been selected. Of these, Arepalli is irrigated through canal and tanks whereas in Tatiparthy there is no proper source of irrigation. It is a common practice to present the data on farm households on the basis of

land classification (owned or operated). Hence, the questionnaire collected information on the details of occupation of each member of the household.

4.1. The Villages

Andhra Pradesh which is fifth in terms of population among the other states is one of the major states in India. The population of the state was about 75.7 million in 2001 (Census 2001). Its geographical spread is 274.4 lakh hectares, accounting for 8.37 per cent of the total area of the country. This makes Andhra Pradesh the fourth largest state in the country. Andhra Pradesh has three regions, which are distinct in terms of socio-economic characteristics owing to historical reasons, and region-specific resource base of the 23 districts ─ nine districts in coastal Andhra, ten districts in Telangana and four districts in Rayalaseema.

4.1.0. South Coastal Andhra Region: West Godavari District

South Coastal Andhra occupies the top place among the five regions, with a high index of output per hectare (Bharathi and Rao, 2010). This region also has higher per capita income when compared to the other regions. South Coastal Andhra is a densely populated region, due to its high agricultural development. There is high pressure on land owing to its high productivity. The region recorded 94 per cent higher productivity than the state average (Subramanayam, 2003). From this region the researcher has selected one of the irrigated districts, i.e., West Godavari. In agricultural terms, West Godavari District has been one of the most dynamic regions in South Coastal Andhra. The Headquarters is located at Eluru. It is located between the northern latitudes of $16^{o}15'$ and $17^{o}30'$ and the eastern longitudes of $80^{0}50'$ and $81^{0}55'$. River Godavari is an important river flowing in the district. This great river flanks the entire eastern boundary of the district right from the north-eastern corner of Polavaram Taluk to the south-eastern corner of Narasapur. Agriculture is the dominant occupation in this region, and the construction of a wide network of irrigation canals gave an additional impetus to the development of agriculture. The chief sources of irrigation in the district are canals from the Godavari and the Krishna rivers. With regard to cropping pattern, no crop other than paddy is grown generally in the same land in two or more

successive seasons. In dry lands, the practice of mixed cropping, i.e., groundnut is grown along with red gram or jowar. Cotton is the predominant crop in dry lands. These are the aggregate features of West Godavari. From this district we have selected three villages, out of which two are irrigated by the government canal and cultivate predominantly paddy in the two seasons. The third village which is irrigated through tube wells cultivates tobacco as an important crop.

Mentipudi: The village is located in Veravasaram Mandal and it is 3 km from the Mandal Headquarters, and is also near the town Bhimavaram. This village is located in the canal-irrigated areas of West Godavari District. It is a revenue panchayat village, having a primary school. The village consists of 90 households, having a population of 424, with the average size of a family being 4.75. The village has 60 per cent literacy. The sex ratio in the village is 840 females per 1000 males. Majority of the villagers are dependent upon agriculture for their livelihood while only nine households are non-cultivating households. The non-cultivating households are dependent upon non-agrarian activities for enhancing their incomes. This is a monocrop village cultivating paddy. There are also some aqua and fish tanks.

Kothapalli: This village is situated in the Ganapavaram Mandal of West Godavari District. It is also having the same characteristic features as that of Mentipudi. It is a revenue panchayat village and has an upper primary school. The village consists of 208 households having a population of 924 persons. The average household size is 4.44, while the sex ratio is 840 females per 1000 males. The literacy rate is 58 per cent. The growth of agricultural production was higher here because of the rich alluvial soil. The village is 100 per cent canal irrigated. During the transplantation and harvest seasons, the laborers organize themselves into groups of men and women to work on piece-rate basis. Most of them have migrated from Srikakulam District. One of the interesting points about this village is that 75.95 per cent of the households are landless. The village has owned land about 128.9 acres, at the same time they have taken leased-in land around 200 acres from outsiders. The non-resident land owners possess more than 50 per cent of land in the village. They have

migrated to the cities like Hyderabad and have invested in the film industry and service sector.

Seethampet: This village is located in Koyyalagudem Mandal of West Godavari District. It is just 8 km away from Mandal Headquarters and 4 km away from the nearby town of Jangareddygudem. The nature of irrigation, soil, and crops grown in the village are entirely different from the other two study villages in this district. This village is located in the dry parts of West Godavari District, and tobacco is the principal crop cultivated here. The village is a revenue panchayat village, having a primary school. There are 170 households in the village, with a population of 772. The average household size is 4.54, while sex ratio is 830 females per 1000 males. The literacy rate in the village is 33.67 per cent. The village farmers are entirely dependent on the ground water resources. The only other source of irrigation, i.e., the village tank, is completely dry due to scanty rainfall. Due to the unavailability of water in the tank for the last few years the villagers are dependent entirely on ground water. The village has two formal sources of supplying credit: a rural bank and a co-operative society, apart from the informal sources of credit available. The livestock in the village is about 112 cows and 28 buffaloes.

4.1.1. North Coastal Andhra Region: Srikakulam District:

North Coastal Andhra region occupies the third place in the development index. In this region, Visakhapatnam occupies the second position in industrial development. North Coastal Andhra suffers from not only slow growth of land productivity, but also from heavy pressure on land. Here there has been high rainfall, and also high irrigation. North Coastal Andhra has the highest density of population which is due to historical reasons. Presently however the growth rate of the population in the region is lower than the state average. From this region, Srikakulam District has been selected for the purpose of the study. This district is located between the northern latitudes of $18^0$20' and $19^0$10' and between the eastern longitudes of $83^0$25' and $84^0$50'. The total geographical area of the region is 10,07,247 hectares, and about 44.5 per cent of this is under cultivation. The uncultivated land comprises forests (15.1 per cent), and barren, uncultivable land (16.1 per cent). The

undulating character of the terrain of the lands in the district is favorable for irrigation through canals, streams, tanks and wells. The chief sources of irrigation in the district are the open head channels from rivers such as Nagavalli, Vamsadhara and Suvarnamukhi. There are two main cropping seasons namely Kharif and Rabi. In the wet lands, mainly paddy and sugarcane are cultivated, while in the dry lands, dry crops such as jowar, ragi, bajra, groundnut and cotton are cultivated. From this district, two villages which are quite different in terms of nature of irrigation and structure have been selected for the purpose of the study.

Jonanki: Jonanki is situated in Jalumuru Mandal of Srikakulam District. It is a revenue panchayat village, having a primary school, which however does not have a well developed infrastructure. The village consists of 151 households, and its population is 672; out of this, 45.98 per cent are literate. The average household size is 4.45, while the sex ratio is 750 females per 1000 males. This village is traditionally a tank-irrigated village. There is a big tank which irrigates about 246.75 acres of land. The important crops grown in the village are paddy and green gram. The average land owned per household in this village is around 1.12 acres. One-third of the total households in the village are in the lease market. Non-institutional sources of credit are most dominant in the village. Particularly, moneylenders dominate in credit market, with a share of 68 per cent of the total credit. The livestock in the village is about 132 cows and 22 buffaloes.

Bonthala Koduru (B.Koduru): Bonthala Koduru is located in Elcherla Mandal of Srikakulam District. It is not a revenue village and has two colonies like hamlets. Its interior is connected by a main road with the Mandal Headquarters and a small town. It is just adjacent to the coast, though it is a dry village– its major irrigation sources are bore wells and open wells. Majority of the owned lands (around 138 acres) do not have any irrigation facilities. The important crops grown in the village are paddy, chillies and grams. Regarding the village credit market, there are six sources that are available: there are institutional sources such as commercial banks and co-operatives, and non-institutional sources such as moneylenders, traders, relatives and friends– the share of non-institutional credit is higher. The livestock in the village is about 143 cows and 44 buffaloes.

4.2.2. North Telangana Region: Karimnagar District:

North Telangana occupies the second place with a high index of output per hectare. North Telangana also has a high growth rate of population; however, the density of population is still low in the region. This region is second best in crop output per hectare in Andhra Pradesh, and has the highest performance with a growth rate of 2.3 per cent per annum (Subramanyam, 2003), followed by South Telangana. North-Telangana has a high sex ratio (900 females per 1000 males). For the purpose of the study, Karimnagar District, which is partly canal irrigated, has been selected. It is located between the latitudes 18^{o} and 19^{o} North and longitudes 78^{o} -30; and 80^{o} -31; East. The Godavari and the Manner are the two important rivers in this district. Of the geographical area of 11,89,417 hectares, a little over 43 per cent is cultivated in the district; and of the remaining land, forests constitute about 20.9 per cent; un-cultivable land over 7.5 per cent; land put to non-agricultural uses about 6.8 per cent; and cultivable waste land about 2.5 per cent. The lands in the district are irrigated through tanks, wells and streams. The chief sources of irrigation are tanks and wells. Cultivation of paddy is the usual practice in the wet lands, while in dry lands, jowar is rotated with cotton, pulses, groundnut, castor and chillies.

Chinnapur: The village is located in Dharmapuri Mandal of Karimnagar District. It is on the main road, 10 km away from the Mandal Headquarters. It is a revenue panchayat village. It has water supply from the River Godavari ─ a small fraction of land is irrigated by the river. There are other sources of irrigation such as wells and bore wells. Most of the people depend on bore wells and open wells. The important crops grown in the village are paddy, maize, jowar and turmeric. The village consists of 216 agricultural households, and its population is 941. The average household size is 4.35 persons, and the sex ratio is 940 females per 1000 males. The literacy rate in the village is 32.31 per cent. The average size of landholdings in this village is around 1.65 acres. In this village, about 85 per cent of the credit comes from non-institutional sources, among which traders are the most dominant with a major share of 68 per cent. A system of attached laborers is still prevailing in the village. The Naxal Movement has generated political awakening among the peasantry. The

Land Ceiling Act was implemented in this village and most of the landless dalits received lands through this Act.

Nagaram: The village is located in Dharmapuri Mandal of Karimnagar District. It has a high school. The total number of households in the village is 171 and the population is 773. Out of this 35.32 per cent people are literate. The average household size is 4.52 persons. The average landholding is 2.31 acres. Sex ratio is 1010 females per 1000 males. This is basically a dry village but has wells, bore wells, and tanks for irrigation. One can observe a variety of crops being cultivated in the village namely paddy, jowar, maize and turmeric. The village has a big tank which irrigates about 108 acres of the land. There has been out-migration of peasants and laborers. What is more interesting here is that, migrations occur in all communities including the upper castes, the backward castes and the Scheduled Castes to the nearby urban centers and to the Gulf. The remittances are used to purchase land, for house constructions, etc. Toddy tapping is the traditional occupation of some households in this village.

4.2.3. South Telangana Region: Mahabubnagar

The growth rate of South Telangana is 1.5 per cent per annum and is slower than North Telangana. South Telangana is in the fifth position with respect to agricultural development. The performance of South Telangana is poorer when compared to all other regions in Andhra Pradesh. This region has low irrigation ratio (27.6 per cent) and receives low rainfall. In such an agro-climatic situation, moisture stress appears to be the major factor contributing to the low yield. The district is known as a 'Palamur' District. It is located between 16^0 and 17^0 N latitudes and 77^0 and 79^0 E longitudes. Famines and drought are most common in this district. The agricultural laborers work for six months in a year, and during the other six months they migrate out of the villages. The standard of living of the people in this district is rather low. Most of the agricultural lands in the district are dependent on rainfall. Rainfed crops such as jowar, ragi, groundnut, castor and pulses are directly sown in the main field. After the commencement of the monsoon, the seeds are usually dropped by hand in shallow furrows made by a wooden plough.

Arepalli: The village is located in Atmakur Mandal of Mahabubnagar District. The village is situated on the banks of River Krishna. The village has a small railway station and the nearest town is Gadwal. The village is spread in two parts: one is known as the old village and another is known as a colony. It is a revenue panchayat village. The village consists of 338 households and has a population of 1773 persons. The average household size is 5.24 persons and the sex ratio is 880 females per 1000 males. The literacy rate is 33.22 per cent. The village is in the interior and is connected by road with the Mandal Headquarters. It has assured water supply for irrigation from River Krishna. The other sources of irrigation are tanks and wells. The village has two tanks, which are connected to River Krishna. During the slack period, there is usually less demand for agricultural laborers here. In this situation, the employers prefer to hire laborers from the same caste or from the neighboring village, and usually give less preference to Scheduled Caste and Schedule Tribe laborers who are living in the same village. During the slack period, most of the Scheduled Caste and Scheduled Tribe households migrate to other states like Gujarat, Maharashtra, etc. This village is predominantly a paddy-growing village. The other crops cultivated here are jowar, maize, castor and grams. The livestock in the village comprises about 248 cows, 181 buffaloes, 526 sheep and goats and 17 pigs.

Tatiparthy: This village is located in Bhootpur Mandal of Mahabubnagar District. It is a revenue panchayat village having a high school, though it still does not have a well-developed infrastructure. It has a post office and even health services including a veterinary dispensary. The village consists of 216 households, and its population is 1188. The average household size is 5.50 persons. The sex ratio is 900 females per 1000 males. The literacy rate is 34.59 per cent of the total population. The average size of landholding is around 3.47 acres, and this is the highest when compared to all the surveyed villages in the study. This is a drought-affected village, and there is no permanent source of irrigation. The farmers depend on rainfall to cultivate their land. Apart from rainfall, the other sources of irrigation available in the village are two tanks, which have dried up completely due to shortage of rainfall. There are a few wells and bore wells, which have been sunk in this area. The main crops grown in the village are dry crops such as castor, jowar, grams, etc. One peculiar

characteristic feature of this village is that the agricultural work is available for only few months (June to October) in a year; the families migrate out during other times. The researcher has noted that while the villagers cultivate lands during Kharif and harvest seasons, they also look out for employment in neighboring villages, and at other times, they travel between villages for work; they even go to urban centers in search of jobs such as casual wage works— the villagers depend more on outside employment rather than within their village.

Thus, the village is caught in an economic paradox. There are only a very few landless households in the village. Almost all the households in the village belong to the peasant class. In spite of this, they keep shifting between the roles of a peasant and a laborer during the year. During the peak (Kharif) season, they act as peasants and during the slack period they migrate as laborers in search of employment. Migration is an important survival strategy adopted by the village. Toddy, which is local made liquor, is used as a recreation drink by all the laborers in the village and for this reason the daily wages are fixed in terms of toddy bottles. The agricultural wages for men are around Rs.40-50, including two bottles of toddy per day, while for women, they are around Rs.20-30 including one bottle of toddy per day. Toddy is available at a very low price of Rs.2 per bottle and has tremendous impact on people's livelihoods. People spend half their wages on toddy. The maintenance livestock in the village is one of the survival strategies of the people. The village has about 241 cows, 109 buffaloes, and 104 goats and sheep.

4.2. The Structure of the Village Economy

India is basically a country of small and marginal farmers. Nearly half of the population lives on agriculture. More than 70 per cent of the households are labor-supplying households (landless, marginal and small farmers). Here, the inter-village and entra-village (class-wise) inequalities of land distribution are examined in detail — for understanding the village economy and structure, we need to examine the distribution of households and ownership of land. Land continues to be of enormous economic, social and symbolic relevance. Its ownership is at the core of the livelihood of a large majority of the poor. In the

present study, in order to understand the structure of the village economy, the distribution of land in terms of class and caste has been adopted.

4.2.0. Class-wise Distribution of Households

The Marxian class based analysis provides a simple and useful categorization of labor supplying and labor demanding households in its five-fold classification of households. In this classification, non-cultivating class is used instead of landlord (the non-cultivators are a strong supplier class in the rural land lease market), the rich peasant class includes large farmers; the middle peasant class includes semi-medium farmers and medium farmers; and the poor peasant class includes marginal and small farmers and agricultural labor households (landless laborers). The non-cultivating class owns land but does not cultivate the land and is dependent on rental income for survival. The rich peasants are the market-friendly segment in the village economy. These households operate land and also use their 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 the poor peasants. These households operate land but the ownership of the land is not enough to meet their subsistence. These households are suppliers of labor. The last class is the agricultural labor households who do not operate land and depend on the sale of labor power in the market for their survival.

Table-4.1: Class-wise Distribution of Households

Village	Agricultural Laborers	Poor Peasants	Middle Peasants	Rich Peasants	Non-Cultivators	Grand Total
Mentipudi	26 (0)	22 (7.7)	21 (30.05)	13 (40.5)	8 (40)	90 (118.25)
Kothapalli	98 (0)	67 (16.8)	34 (75.6)	3 (18)	6 (18.5)	208 (128.9)
Seethampet	91 (0)	21 (26.75))	28 (116.79)	21 (202.5)	9 (70.1)	170 (416.14)
Arepalli	56 (0)	173 (273.45)	87 (480.25)	8 (146)	14 (118)	338 (1017.7)
Tatiparthy	29 (0)	147 (474.07)	37 (229)	3 (46)	- 	216 (749.07)
Chinnapur	49 (0)	60 (50.325)	64 (124.38)	7 (49.5)	36 (81.3)	216 (305.63)
Nagaram	38 (0)	75 (108)	41 (158.2)	13 (107.3)	4 (23)	171 (396.5)
Jonanki	32 (0)	71 (46.55)	29 (63.02)	6 (25.7)	13 (132.3)	151 (267.57)
B.Koduru	71 (0)	67 (57.84)	31 (74)	6 (129)	2 (145)	177 (406.09)
Total	490 (0)	703 (1017.73)	372 (1351.29)	80 (764.5)	92 (628.2)	1737 (3805.85)

Source: Field Survey
Note: Figures in brackets indicate own area.

Table 4.1 shows that out of the nine villages, agricultural labor households are more in Kothapalli, Seethampet and B.Koduru; Kothapalli also has more number of absentee land owners, which is not shown in the table. This may be the reason for the existence of more agricultural labor households, as well as high extent of land under lease in the village. In the case of Seethampet and B.Koduru, it is observed that more land concentration is among the rich peasants. Such unequal distribution of land is the cause for the existence of more agricultural labor households in villages. Villages such as Arepalli, Tatiparthy, Chinnapur and Nagaram are observed to be dominated by the poor and middle peasants in terms of own land as well as the number of households. Arepalli has 118 acres of land under non-cultivating households, among which some of them cultivate their land with the help of wage labor. It was found that there were no non-cultivating households in Tatiparthy Village, while B.Koduru has a dominant number of rich peasants. Here, most of the cultivable land is under the control of six rich peasant households and two non-cultivating households. The number of agricultural laborers and poor peasant households are high, but they do not have sufficient land for cultivation. Thus, Table 1 gives a clear picture of land distribution among different categories of households across the study villages.

4.2.1. Caste-Wise Distribution of Households

Indian society is characterized by persistent and pervasive inter-group inequalities in economic life. The caste system provides a clear-cut picture of the inequality among different social groups in terms of distribution of land, income and wages (Sen, 1994). As far as the sociological dimension is concerned, the upper castes, namely the Brahmins and other dominant castes traditionally owned the land, while on the other hand, the members of lower castes eked out their livelihood as tenants. People belonging to the Scheduled Castes constitute the majority of agricultural laborers. Even today, we rarely find lower caste people owning land of any significant measure, or the upper castes particularly, the Brahmins, working as tenants. This clear cut occupational dichotomy created social inequality and economic compulsions perpetuated such social inequalities. Thus, the economic inequality created under the economic dimension of land relations was reinforced by the social inequality in agrarian relations. There are not many studies on tenancy relations among different social groups such as the Scheduled Castes, Scheduled Tribes and Other Backward Castes (OBCs). In a recent study, Sharma (2007) found that across different social groups, more than two-fifths of the total lessees and the land leased-in was accounted by households of OBCs, followed by those of other castes whose share was nearly 30 per cent of the total lessees and land leased-in. Further, while the share of Scheduled Caste households in the total lessees and land leased-in was around one-fifths, that of Scheduled Tribes was much lower, around 6 per cent.

The participants in the lease market may be classified into different social groups, and the land lease exchange that occurs is based on the social status of the households in the village. The field evidences on caste-wise distribution of land in the different study villages in different agro-climatic settings in Andhra Pradesh are shown in Table 2. It is observed that non-Dalit households own majority of the cultivable lands in Mentipudi (89.34 per cent), Kothapalli (92.24 per cent), Seethampet and Jonanki (100 per cent each), Arepalli (96.36 per cent), Tatiparthy (85.07 per cent), Chinnapur (87.93 per cent), Nagaram (96.25 per cent), and B.Koduru (91 per cent), while the poor and middle peasants belonging to BC and OC communities own majority of the lands in Kothapalli, Arepalli, Tatiparthy, Nagaram

and Chinnapur. It is also seen that in all study villages, 6.6 percent of the land is owned by Scheduled Caste households, and 0.25 per cent is owned by 57 dalit households. However, majority of the lands (93.34 per cent) are owned by non-dalit households. Further, Appendix II gives information about Scheduled Caste and Tribe households that own a little portion of land in all the study villages. It is observed that the Scheduled Caste and Scheduled Tribe households in some villages such as Seethampet and Jonanki do not own land~~s~~most of them are agricultural laborers.

Table- 4.2: Caste-Wise Distribution of Land in Different Study Villages

Village	Caste	Dalits			Non-Dalits (BCs and OCs)	Total
		Malas	Madigas	STs	Others	
Mentipudi	No. of households	20	-	-	70	90
	Average land owned	0.63	-	-	1.51	1.31
Kothapalli	No. of households	82	-	1	125	208
	Average land owned	0.12	-	0.00	0.95	0.62
Seethampet	No. of households	-	29	-	141	170
	Average land owned	-	0	-	2.95	2.45
Arepalli	No. of households	3	32	8	295	338
	Average land owned	0.33	1.05	0.50	3.34	3.04
Tatiparthy	No. of households	1	46	3	166	216
	Average land owned	2	2.16	2.00	3.89	3.48
Chinnapur	No. of households	19	51	-	146	216
	Average land owned	0.75	0.44	-	1.85	1.42
Nagaram	No. of households	26	30	-	115	171
	Average land owned	0.35	0.19	-	3.32	2.32
Jonanki	No. of households	2	-	-	149	151
	Average land owned	0	-	-	1.80	1.77
B.Koduru	No. of households	26	2	-	149	177
	Average land owned	1.10	0.50	-	2.06	1.90
Total	No. of households	179	190	12	1356	1737
	Average land owned	0.43	0.85	0.86	2.58	2.16

Source: Field Survey.

Table-4.2 shows the distribution of number of households and average land owned among different castes across the study villages. It is observed that there was an inequitable distribution of land among the dalits (Malas, Madigas and STs) and others (OCs and BCs). However, dalits are seen to own very less land (0.43 acres by Malas, 0.85 acres by Madigas, and 0.86 acres by Scheduled Tribes), while other castes have an average of 2.58 acres of own land in the study villages. Further, in some study villages such as Seethampet and Jonanki, the dalits do not even own a small piece of land; they work as landless laborers in these villages. It may be observed that in Kothapalli Village 83 dalit households own 0.12 acres on an average; in Mentipudi, the dalit households own 0.63 acres of land, which is lesser compared to Tatiparthy. Furthermore, the average owned land is seen to be high among the Madigas at 2.16 acres average, followed by Malas and STs in Tatiparthy at 2 acres each. The average land owned by other castes is also seen to be high (3.89 acres) in Tatiparthy, a drought-prone village in Mahabubnagar District. And while Arepalli and Nagaram also have high average own land, i.e., 3.34 and 3.32 acres respectively, a low average of 0.62 acres was reported Kothapalli Village. The table shows that there is an unequal distribution of land ownership among the different socio-castes across the study villages.

4.3. Cropping Pattern and Irrigation in Different Study Villages

In Andhra Pradesh three seasons dominate the year. The summer season begins in March and ends in June. The rainy season starts in June and ends in November, while the winter season starts in October and continues up to March. The villages receive almost all of their rainfall during the north-east monsoon which starts in June and ends by mid-October. The intensity of rainfall reaches its highest point during the first half of this period and thereafter it gradually declines. The villages hardly receive any rainfall during the south-west monsoon. The annual rainfall in the villages varies from region to region (high rainfall in the coastal regions) and from year to year. Sometimes, drought and famine occur in the Telangana villages because of inadequate rainfall. The dry season generally extends from November to the middle of June. Rainfall plays an important role in agriculture and the total product from crop husbandry in the villages varies from one year to another because of the unpredictable and fluctuating nature of rainfall even during the period of the north-east

monsoon. As far as the study villages are concerned, the climatic conditions do not vary much but the nature of soil varies widely.

A) Cropping Patterns

A large variety of crops are grown in the surveyed villages. The crops can broadly divided into Kharif and Rabi crops according to their season. We can also divide them into food and non-food crops. However, the data for this study was collected at a particular point of time and hence considers only the Kharif period for a single crop. Further, under leased-in cultivation, food crops are being cultivated more than non-food crops. Thus, in regions where much higher yields could be secured by intensive application of labor such as through double-cropping in rice-growing areas, or a suitable diversified cropping pattern in adequately irrigated tracts, one might expect a strong preference for leasing-out land to peasants with smaller holdings (Raj, 1985). On the other hand, cultivation in relatively large holdings could have appeared more advantageous in regions where the scope for raising yields in these ways was limited, weather for lack of irrigation or because lesser intensive application of labor was adequate for the crops that could be ordinarily grown in the given social and climatic conditions (as in the case of millets, groundnut, cotton, etc.). If this was so, the prevalence of tenancy in small peasant holdings would have been greater in the former regions than in the latter, and the proportion of cultivated area would be relatively larger operational holdings in the latter compared to the area under ownership within the same size range. The crops cultivated divided the rationality of gambling behavior on the part of the subsistence farmers, as it is only necessary to introduce a single short-run goal ─ a desired level of rice to face one's family next year (food security), i.e., the minimum consumption requirement in terms of crops.

The coastal areas have flat, alluvial lands, which are fertile and suitable for the cultivation of a variety of crops such as paddy, tobacco, etc. However, certain villages such as Mentipudi and Kothapalli in West Godavari cultivate monocrop, while some villages such as Seethampet are dry and cultivate crops such as tobacco, paddy, chillies, maize, etc. In

Telangana villages, a variety of dry crops are cultivated as there is not sufficient irrigation. These lands are dependent on rainfall.

Table-4.3: Cropping Pattern in the Study Villages (land in acres)

Villages	Paddy	Tobacco	Maize	Jowar	Turmeric	Grams	Castor	Chilies	Sugarcane	Others	Total
Mentipudi	187.5 (73.02)	-	-	-	-	-	-	-	-	69.25 (26.97)	256.75 (100)
Kothapalli	272.75 (65.47)	-	-	-	-	-	-	-	-	143.85 (34.53)	416.6 (100)
Seethampet	93.74 (22.52)	215.5 (51.79)	17 (4.09)	-	-	-	-	-	37 (8.89)	52.9 (12.71)	416.14 (100)
Arepalli	537.2 (52.78)	-	-	66 (6.49)	-	-	87 (8.55)	-	-	327.5 (32.18)	1017.7 (100)
Tatiparthy	55.5 (7.40)	-	6.5 (0.87)	296.1 (39.53)	-	40 (5.34)	211 (28.2)	0.5 (0.06)	-	139.47 (18.62)	749.07 (100)
Chinnapur	139.24 (45.55)	-	34.2 (11.18)	-	2.08 (0.68)	-	4.5 (1.47)	2 (0.65)	-	123.65 (40.46)	305.64 (100)
Nagaram	145.95 (36.80)	-	40.8 (10.30)	-	69.9 (17.64)	18 (4.54)	-	24.23 (6.11)	-	97.535 (24.6)	396.5 (100)
Jonanki	193.9 (72.46)	-	-	-	-	-	-	-	-	73.67 (27.53)	267.57 (100)
B.Koduru	148.85 (45.09)	-	-	-	-	22.85 (6.92)	-	36.14 (10.95)	-	122.25 (37.04)	330.09 (100)
Total	1774.6 (42.69)	215.5 (5.185)	98.5 (2.37)	362.1 (8.71)	72 (1.73)	80.85 (1.94)	303 (7.28)	62.87 (1.51)	37 (0.89)	1150.1 (27.67)	4156.1 (100)

Source: Field Survey
Note: Figures in brackets indicate percentages.

Table-4.3 shows that Mentipudi and Kothapalli are cultivating monocrop, i.e., paddy. However, aqua fish tanks are also prevalent in these villages, which are shown under 'others' in the table. Seethampet is only the village cultivating tobacco, which is being cultivated on nearly 52 per cent of the land, followed by paddy (22 per cent). The village also cultivates sugarcane, which is not being cultivated in the other study villages. In Arepalli, paddy is the dominant crop, cultivated in about 53 per cent of the land while 32 per cent of the cultivable land comes under other crops grown in the village. In Tatiparthy Village jowar and castor are the dominant crops. Here, crop cultivation depends on rainfall and paddy is being cultivated in only 7.4 per cent of the land. Chinnapur and Nagaram are cultivating paddy in 45 per cent and 36 per cent of the land respectively, while the other major crops are turmeric and maize. It is observed that Jonanki Village is dominated by monocrop, i.e., paddy, which is being cultivated in nearly 72 per cent of the cultivated land,

while 27 per cent of the land is devoted to other crops. In the case of B.Koduru, 45 per cent of the land is being cultivated with paddy, followed by chillies. It is seen that two villages in West Godavari are cultivating monocrop, i.e., paddy, except in Seethampet Village, in which tobacco is a major crop. Further, in Arepalli paddy is cultivated as a major crop, followed by and jowar and maize, which are being cultivated as dry crops. In Tatiparthy, which is a drought-phone village, dry crops such as jowar, castor and maize are cultivated in order to avoid dependence on rainfall.

Further, Appendix II (Table 1) shows that in Mentipudi and Kothapalli villages, the cultivable land is irrigated through canals and they cultivate monocrop paddy, irrespective of caste and class. Tobacco is the major crop cultivated by the rich and middle peasants in Seethampet, while the Malas and Madigas exclusively depend on the labor market as they do not own land. In Arepalli, the poor peasants (Malas and Madigas) cultivate paddy and jowar for food security, while in Tatiparthy village; dry crops which do not depend on rainfall are cultivated. However, there is high output uncertainty or risk in yield. In the Telangana villages the poor and middle peasants mostly cultivate dry crops which do not depend on rainfall, and they prefer to cultivate food crops.

B) Irrigation

The impact of irrigation is seen through higher yields, increasing the intensity of cultivation, widening of the choice of crops often including the more lucrative, water -dependent crops, and through stabilizing output variations by reducing dependence on the uncertain. The effects of irrigation on employment generation and income for rural poor are also high. Such evaluation of the productive contribution of irrigation in particular cases is then used to make inter-regional, inter-farm, inter-temporal or inter-modal comparisons so as to assess relative economic performance of irrigation.

Appendix II shows that a high proportion of irrigated land is owned by middle peasants, rich peasants, and non-cultivating households in all the study villages. In Kothapalli, middle peasants have a high proportion of irrigated land (59.7 per cent) in comparison to the others ─ the poor peasants and SC households have lesser amount of irrigated land. It is seen that

in Seethampet the BC and OC households have 100 per cent irrigation, while the Scheduled Caste households do not own lands in the village. In Arepalli, canal is the major source of irrigation, and middle peasants (BCs and OCs) have more irrigated lands while the dalits have less irrigation sources for their lands; 58.88 per cent of the land does not have any source of irrigation. Tatiparthy Village depends on rainfall, and the SCs irrigate their lands using wells (0.13 per cent) and tanks (0.74 per cent). Middle peasants are dominant in Chinnapur, and most of them have irrigated lands (53.89 per cent), apart from 45.13 per cent of land irrigated by canals; the BCs and OCs have more (90 per cent) irrigated lands. In Jonanki, all cultivable lands are under the control of BC and OC households. However, non-cultivating households own 38.48 per cent of the lands which are irrigated by tanks, while the dalits do not have any irrigated lands. In B.Koduru, there BCs and OCs who use private wells to irrigate 73 per cent of the land; these households belong to the rich and non-cultivating households.

Table-4.4: Sources of Irrigation in the Study Villages

Villages	Canal	Open Wells	Tube Wells	Tanks	No Source	Total
Mentipudi	118.25 (100.00)	-	-	-	-	118.25 (100.00)
Kothapalli	128.90 (100.00)	-	-	-	-	128.90 (100.00)
Seethampet	-	44.00 (10.57)	183.95 (44.20)	-	188.19 (45.22)	416.14 (100.00)
Arepalli	542.00 (53.26)	133.00 (13.07)	52.50 (5.16)	191.95 (18.86)	98.25 (9.65)	1017.70 (100.00)
Tatiparthy	-	125.00 (16.69)	117.20 (15.65)	93.00 (12.42)	413.87 (55.25)	749.07 (100.00)
Chinnapur	187.87 (61.47)	20.25 (6.63)	30.74 (10.06)	-	66.78 (21.85)	305.64 (100.00)
Nagaram	-	116.00 (29.26)	152.15 (38.37)	108.35 (27.33)	20.00 (5.04)	396.50 (100.00)
Jonanki	-	-	-	246.75 (92.22)	20.82 (7.78)	267.57 (100.00)
B.Koduru	-	9.23 (2.80)	182.52 (55.29)	-	138.34 (41.91)	330.09 (100.00)
Total	977.02 (26.19)	447.48 (12.00)	719.06 (19.28)	640.05 (17.16)	946.25 (25.37)	3729.86 (100.00)

Source: Field Survey.
Note: Figures in Brackets indicate percentages.

Table-4.4 shows that sources of irrigation include canals, tanks, wells and bore wells in the study villages. However, some cultivable land does not have any source of irrigation, and it depends on rainfall. There are two coastal villages such as Mentipudi and Kothapalli, which are completely irrigated through government canals. Another village, Seethampet, in West Godavari District, is 55 per cent irrigated through tube wells and open wells, while there is no other source of irrigation for about 45 per cent of the cultivable lands. In Arepalli 55 per cent of the cultivable lands are irrigated by canals and tanks. In case of Tatiparthy 55 per cent of the land has no source of irrigation and depends on rainfall ─ there is no canal and very little cultivation being done by tube wells in the village. In Chinnapur, the major source of irrigation is the canal, from the Godavari River, while 21.8 per cent of the land does not have any other source of irrigation. In Nagaram, which depends on tanks as a major source of irrigation, only 5.5 per cent of the land does not have any source of irrigation; the other main sources of irrigation in the village include wells and tube wells. In case of Jonanki Village, about 92 per cent of the cultivated land in under tank irrigation, while 7.7 per cent of the land does not have any source of irrigation. In B.Koduru nearly 55 per cent of the land is irrigated by tube wells, while 44 per cent of the land has no irrigation source and entirely depends on rainfall. The main theme of this table is to show that different agro-climatic regions have different sources of irrigation.

4.4. The Extent of Lease Land and Terms of Lease in the Study Villages

Agriculture is the main occupation for the poor people in rural India and more than 80 per cent of agricultural holdings in India are less than one hectare. Most of the people in rural areas are poor due to lack of employment, insufficient land for cultivation, and uncertain agriculture and rural labor market, which has been characterized by heavy population. In this situation, people either migrate to other places or enter into the land lease market for survival, where land lease exchanges are high and land owners cannot participate in agricultural activity directly, or the labor market cannot effort to provide employment. Table 5 gives information on the number of households entering into the land lease market, leased-in land as well as lease-out land, and the terms of lease in the surveyed villages. The institution of tenancy has influenced the nature of lessor. However, it is difficult to analyze

them because of lack of proper information, as some lessors are living outside the village, i.e., in cities or towns, and it very difficult to get information from them. Further, tenancy is not recorded in the village records, and this arrangement satisfies both owner and tenant. The owner feels that he is earning more by leasing-out his land than from self-cultivation, while the lessors of different categories are benefited or affected in specific ways depending mostly upon their socio-economic position and their occupation. Leased-out tenancy is related with the supply side phenomenon, while leased-in tenancy is a demand-related phenomenon. However, supply and demand are not equal in terms of leased extent. Leased-in areas are more than leased-out land areas in some surveyed villages, because the tenants have also taken leased-in land from outside the village. This implies that villages are not closed in terms of land transfer.

Table-4.5: Number and Extent of Leased-in/out Land in the Study Villages

Village	Leased-in		Leased-out		Difference	
	Number	Extent (acres)	Number	Extent (acres)	Number	Extent (acres)
Mentipudi	37.00 (41.11)	111.00 (93.87)	5.00 (5.56)	18.00 (15.22)	32.00 (35.56)	93.00 (78.65)
Kothapalli	78.00 (37.50)	200.00 (155.16)	8.00 (3.85)	26.50 (20.56)	70.00 (33.65)	122.50 (134.60)
Seethampet	28.00 (16.47)	64.30 (15.45)	14.00 (8.24)	75.10 (18.05)	14.00 (8.24)	-10.80 (-2.60)
Arepalli	18.00 (5.33)	54.00 (5.31)	14.00 (4.14)	76.00 (7.47)	4.00 (1.18)	-22.00 (-2.16)
Tatiparthy	15.00 (6.94)	68.00 (9.08)	2.00 (0.93)	12.00 (1.60)	13.00 (6.02)	56.00 (7.48)
Chinnapur	28.00 (12.96)	52.50 (17.18)	39.00 (18.06)	64.50 (21.10)	-11.00 (-5.09)	-12.00 (-3.93)
Nagaram	20.00 (11.70)	33.70 (8.50)	2.00 (1.17)	5.00 (1.26)	18.00 (10.53)	28.70 (7.24)
Jonanki	43.00 (28.48)	59.30 (22.16)	13.00 (8.61)	30.80 (11.51)	30.00 (19.87)	28.50 (10.65)
B.Koduru	8.00 (4.52)	32.00 (9.69)	25.00 (14.12)	22.70 (6.88)	-17.00 (-9.60)	9.30 (2.82)
Total	275.00 (15.83)	675.00 (18.10)	122.00 (7.02)	331.00 (8.87)	153.00 (8.81)	344.00 (9.22)

Source: Field Survey.
Note: Figures in brackets indicate percentages of total households and total owned land in the village.

Table-4.5 shows the difference between leased-in and leased-out lands in the study villages. It is seen that in Mentipudi and Kothapalli villages, farmers have taken land from neighboring villagers and absentee land owners. Hence, there is a big difference between

extent of leased-in and leased-out lands in the villages. The lands which are leased-out from the villagers are only 15 per cent of the leased-out land in Mentipudi and 20 per cent in Kothapalli, while the total leased-in land is 93 acres in Mentipudi, and 122 acres in Kothapalli. This means that a huge amount of leased-in land (78.65 per cent) has been taken from outside the village, because such land owners depend on non-agricultural work and live in cities or nearby towns, and prefer leasing-out their land to get constant returns through fixed rentals without any risk. However, Seethampet Village in West Godavari District is quite different from these two villages there is not much difference between leased-in and leased-out extent, which means it is closed in terms of land transfer in the form of lease. In case of other villages such as Arepalli, Tatiparthy, Chinnapur, Nagaram and B.Koduru, it is seen that land transfers in terms of lease are very less. However, in the case of Jonanki, leased-in extent is high compared to leased-out land— the tenants have taken nearly 10 per cent of land for lease from owners outside the village.

4.4.1. The Forms of Contracts in the Study Villages

The selected villages have different agro-climatic conditions. The study tries to find inter-regional differences in the extent of lease and their forms in land lease market. Krishna Rao (1996) has noted that the area under tenancy is tending to increase, in a form organized on a purely commercial basis with no extra economic pressure. Rent is paid either in cash or in the form of a fixed amount of produce. Where rent is paid in cash, payment is made before the paddy crop is raised. The total annual rent is paid by cultivator families in cash and kind for the leased-in land. Nabi (1985) and Bhalla (1983) point out that the tenants are either agricultural laborers or small and marginal farmers. This form of tenancy falls under the category of subsistence tenancy. There is however a difference between this and traditional subsistence tenancy, since the former is on commercial terms and may therefore be described as subsistence tenancy on commercial lines.

In these villages, the operated area of the households has been either temporarily or permanently changing hands through the different types of land transfers every year. Furthermore, a major percentage of the land transfers were in the form of tenancy

transactions only. Thus, this confirms the fact that in the Indian villages, the land market operates largely through tenancy rather than through outright sale or purchase (Bardhan and Rudra, 1978). Thus, it is appropriate to study the land market and its functioning largely in terms of tenancy, and inter-village differences in the extent of land transfers, which are largely a result of differences in the extent of tenancy. In the highly irrigated villages of Mentipudi and Kothapalli, the practice of leasing land on a seasonal basis was responsible for the high extent of tenancy compared to the other villages. Rural land lease market refers to land transfer in terms of leased-out and leased-in land in the agreement of lease, i.e., fixed rental, sharecropping, etc. Table 6 gives information on terms of lease in the study villages.

Table-4.6: Terms of Lease (in acres) in the Study Villages

Villages	Fixed Kind		Fixed Cash		Sharecropping		Total	
	Number	Extent (acres)	Number	Extent (acres)	Number	Extent (acres)	Number	Extent (acres)
Mentipudi	37 (100)	111 (100)	-	-	-	-	37 (100)	111 (100)
Kothapalli	78 (100)	200.4 (100)	-	-	-	-	78 (100)	200.4 (100)
Seethampet	1 (3.7)	1.5 (2.37)	25 (92.59)	60.8 (96.05)	1 (3.7)	1 (1.58)	28 (100)	64.3 (100)
Arepalli	8 (44.44)	19 (35.19)	6 (33.33)	15.5 (28.7)	4 (22.22)	19.5 (36.11)	18 (100)	54 (100)
Tatiparthy	3 (20)	8 (11.76)	9 (60)	51.5 (75.74)	3 (20)	8.5 (12.5)	15 (100)	68 (100)
Chinnapur	2 (7.14)	3 (5.72)	3 (10.71)	5.5 (10.49)	23 (82.14)	43.95 (83.79)	28 (100)	52.45 (100)
Nagaram	5 (25)	10.5 (31.16)	2 (10)	1.2 (3.56)	13 (65)	22 (65.28)	20 (100)	33.7 (100)
Jonanki	3 (6.98)	2.4 (4.15)	4 (9.3)	10.3 (17.82)	36 (83.72)	45.1 (78.03)	43 (100)	59.3 (100)
B.Koduru	2 (25)	1.05 (11.73)	5 (62.5)	16.3 (70.39)	1 (12.5)	1.6 (17.88)	8 (100)	21.95 (100)
Total	140 (50.91)	382.4 (56.64)	54 (19.64)	151.1 (22.38)	81 (29.45)	141.7 (20.98)	275 (100)	675.1 (100)

Source: Field Survey.
Note: Figures in brackets indicate percentages.

We observe from Table 4.6 that the number of leased-in land households as well as the extent of land is high in Mentipudi and Kothapalli, where fixed kind (100 per cent) is the dominant form of lease. Whereas in Seethampet is seen to be dominant in fixed cash 96.05 per cent of leased-in land is under fixed cash. In Tatiparthy (which was affected by drought), 75.74 per cent of the leased-in land is under fixed cash, while both fixed kind and

fixed cash are dominant forms of lease in Arepalli. Villages such as Chinnapur, Nagaram and Jonanki are seen to be having sharecropping as a dominant form of lease, while B.Koduru has fixed cash as the dominant form of lease. Hence, it is observed that the surveyed villages are different in terms of lease, the nature of irrigation facilities, type of cropping pattern, and structure of village economy.

4.5. Conclusions

The study villages are seen to be heterogeneous in terms of land distribution, cropping pattern, and irrigation. They are also seen to be different in terms of leasing-in land as well as leasing-out land and terms of lease. Furthermore, intra-village variations are also observed in terms of class and caste-wise households. For example, in villages such as Mentipudi and Kothapalli it has been observed that the percentage of agricultural laborers and non-cultivating households (absentee land owners) was high, while in Seethampet and B.Koduru, rich peasant households are dominating in agrarian structure; in Chinnapur and Nagaram villages, there are more middle peasant households; and the rest of the study villages such as Jonanki, Arepalli and Tatiparthy, are dominated by the poor peasant households. We have also found variations in terms of caste-wise distribution of households across the study villages. The backward castes such as Mala, Madiga and Scheduled Tribes have not entered into the land lease market except canal irrigated villages (Mentipudi and Kothapalli).

With regard to irrigation, it is seen that canal irrigated (highly irrigated) villages, which are also rice growing villages, have high tenancy, while low irrigated villages have low tenancy. The highly irrigated villages have fixed rent as a dominant form of lease, while dry villages have sharecropping as a dominant form of lease except in Seethampet, Tatiparthy and B.Koduru ─ these villages have peculiar characteristic features which influencing the forms of lease: Seethampet is a commercial village, where tobacco is a major crop being cultivated in leased-in lands; Tatiparthy is a drought-affected village, cultivating dry cash crops such as castor; and in the case of B.Koduru, the big landlords have taken leased-in land from marginal and small holders (reverse tenancy). It is also observed that the nature of the crop influences the form of lease in the villages. The next chapter gives information on the agents involved in the land lease market across the study villages.

CHAPTER 5

ANALYSIS OF THE AGENTS INVOLVED IN THE LEASE MARKET: AN ANALYSIS IN SURVEYED VILLAGES

5.0. Introduction:

The nine villages under study were selected from different regions in Andhra Pradesh. These villages come from different natural, historical, social and economic conditions. There are villages wherein land reforms have not made any dent, and land distribution is skewed, with only one landholder controlling a large extent of land (such as in B.Koduru). There are also villages wherein the Naxalite movement has attempted to change the pattern of land distribution but was not that successful (such as in Chinnapur and Nagaram in Karimnagar District). While some villages have a large extent of land under canal irrigation (such as Mentipudi and Kothapalli), others are rainfed (such as Seethampet) or irrigated by tanks (such as Jonanki). There is also one village (Seethampet) which has witnessed an active intervention by the industry (ITC – Tobacco) while the rest of the villages did not witness any major intervention by industry.

The villages differ in their nature of cropping pattern, structure, extent of land, and forms of land lease. On one hand there are villages with a large extent of land under tenancy (Mentipudi, Kothapalli and Jonanki), while on the other, there are villages with very little land under tenancy (Tatiparthy, Nagaram, Arepalli, B.Koduru and Seethampet). The forms of land lease also show a vast diversity: There are villages with fixed form of contract (Mentipudi, Kothapalli, Seethampet and B.Koduru) as a dominant form of lease, while some villages have a combination of contractual (Chinnapur, Nagaram, Tatiparthy and Arepalli), or sharecropping as a dominant form of lease (Jonanki). There is also evidence that in some villages the landless laborers are leasing land (Mentipudi and Kothapalli), while in some villages only the mixed tenants lease-in their land (Arepalli, Chinnapur, Nagaram and Tatiparthy). It is also observed that marginal land holders are leasing-out land (reverse

tenancy) in B.Koduru Village. The present chapter investigates the agents leasing-in or leasing-out land in the study villages.

5.0.1. Objectives

i) To find who are the agents leasing-in land or leasing-out land agents in the study villages

ii) To understand the various forms of lease

iii) To find the typology of villages in terms of land lease extent and forms of lease.

5.0.2. Methodology

For the purpose of understanding the behavior of different agents that are involved in land lease market, we need to classify the households according to their labor activity (class) and caste. Similarly, we also classified the villages based on their sources of irrigation, as this would also throw light on the land lease market. The present chapter will analyze various forms of land lease and the agents involved in the land lease market, considering households as well as villages as the units for analysis.

5.1. Behavior and Classification of Agents

From the analysis, which is dominantly from two sides of the market, it is observed that agricultural labor households may have a choice problem, i.e., an agricultural labor household can either enter the market in the casual or a lease form; and that there exist two types of land owners ─ the risk averse (referred to as the non-cultivating class in Marxian terminology), and the risk loving (referred to as the rich peasant class in Marxian framework). Hence, there could be two types of land owners in the rural economy. If the non-cultivating households are dominant in the village economy, it may be possible to generate land lease market, and if the rich peasant households are dominant in the village economy it may be possible to generate labor market (Vijay and Sreenivasulu, 2005).

The researcher has classified the village households into five broad categories, based on the nature of their participation in the agricultural labor market (Rao, 2003) ─ some households

supply labor, some demand labor, while some neither supply, nor demand, labor. In the classification adopted by Rao and Bharathi (2010), the traditional landlord class is referred to as non-cultivating households (households that own land but do not cultivate). This class could own the land to derive rental income or could buy land as an investment. Further, the Marxian class based analysis, in its five-fold classification of households, provides a simple and useful categorization of households supplying and demanding labor. The classes are: landlords (in this study we refer to them as non-cultivating class), rich peasants, middle peasants, poor peasants and agricultural labor households.

5.1.1. Classification of Households

Non-Cultivating Households: The non-cultivating class owns land but does not cultivate and is dependent on rental income for survival. These households organize production by either leasing-out land, employing farm servants to organize production, or leave the land fallow. These households can be those of landlords in the conventional sense, government servants (such as school teachers), or those belonging to non-cultivating caste groups or households without able-bodied persons. The major interest of these households is to draw a rental income from the land.

Rich Peasants: The distinguishing factor of this group is that they actively participate in the various agricultural operations on their farm. These households operate land and also use their family labor in the production process. The rich peasants are the market-friendly and labor-demanding segment in the village economy. The households may employ permanent farm servants, casual labor, or other kind of laborers. As the households draw labor from other households to meet their shortage, logically they do not work as labor for other households. These peasants participate in the production process and also employ wage labor with an objective to produce marketable surplus. In other words, these households demand labor and supply produce to the output market. If they lease-in land, it leads to capitalist or market-oriented economy.

Middle Peasants: These households cultivate the land they own with their own family resources and have minimum interaction with the market. These households neither supply, nor demand labor. By nature the group has self-consumption as an objective of production and has least market orientation and market dependency. These are self-employed cultivators with minimum demands from labor markets and minimum supply to the output market.

Poor Peasants: These households are both cultivators and agricultural laborers. They have insufficient lands compared to their consumption needs and hence also work as agricultural laborers. Thus, they are suppliers of labor in the labor market though they cultivate some land. The group may either own land, participate in the tenancy market, and may even opt for non-farm activities or out migration, if agriculture does not provide sufficient income. The strength of this group to sustain within the village depends crucially on the strength and operation of the Rich Peasant Group, which in turn is dependent on that group's dynamism and activity.

Agricultural Laborers: This group of households is entirely dependent on labor, devoid of any ownership of land. The group derives its sustenance from selling labor either as a permanent farm servant or as casual labor. They might also migrate into neighboring villages for agricultural labor, or to the urban areas as manual workers in the informal sector. Depending on the structure of the economy in which they operate, these households try to become cultivators by leasing-in land. But basically they are the suppliers of labor.

On the basis of the above classification, it can be concluded that the agents in different classes have different objective functions and hence the process of adjustment for each agent would also be different. Let us consider the case of an economy dominated by non-cultivating households. These households do not cultivate the land that they own. So these households have two options to organize production: One is to lease out the land and earn rental income and the second is to have an attached labor that organizes production for them. Hence, there is high probability that there would be dominance of lease in the economy.

5.1.2. Caste Classification

Some studies have found that caste is an important factor, despite the agrarian changes, for economic decision making in the land lease market (Reddy and Murthy, 1978; Lewis and Barnouw, 1956). Caste is also one of the forces which "seriously affects the extent and nature of participation in economic activities by different potential members of the labor force" (Rudra, 1981; pp: 4).

The households have been classified into four caste groups for the purpose of the study: Malas, Madigas, Scheduled Tribes (STs) and Others (backward castes and upper castes). The main aim of this classification is to understand the land lease transactions of dalit communities. Malas and Madigas, who come under the category of Scheduled Castes (SCs), commonly suffer from the social stigma of untouchability. Similarly, the Scheduled Tribes have been isolated from society historically, and still depend on indigenous cultivation methods. Moreover, they do not produce either for the market or for self consumption. The study attempts to understand the influence of various castes in the land lease market. In the coastal region, the Malas are in dominance, while in the Telangana Region, the Madigas are in dominance. In this context of diversity in the village structures, this chapter analyzes three issues:

Firstly, the characteristics of the households who are leasing-out land in the study villages; this includes issues such as:

Are large land owners or non-cultivating households leasing-out land? Is the land being leased-out by some specific caste groups?

Secondly, the characteristics of the households that are leasing-in land in the study villages:

Are the leasing-in agents 'capitalist farmers' / market-oriented segments? Or are they subsistence/poor peasants in the village economy? Is the land being leased-in by some specific caste groups? What are the contractual forms of land lease existing in the exchanges between different social/economic groups in the study villages?

And lastly, to identify the differences in terms of the extent and forms of land lease arrangements existing in different agro-climatic villages of the land lease market.

This chapter is divided into five sections: including the introduction, first section presents the profiles of leasing-out land agents in terms of class and caste-wise distribution across the study villages. The second section presents the leasing-in land agents in terms of class and caste-wise distribution across the different study villages. The third section discusses the forms of contracts in the land lease market across the study villages. The fourth section explains the typology of the villages based on sources of irrigation, and the extent and forms of lease. The last section presents the conclusions of the chapter.

5.2. Leasing-Out Agents of Land Lease Market in the Study Villages

There are three types of rural households that lease-out their land: households with large landholdings, the non-cultivating households, and the small and marginal farmers. Whether or not the households with large landholdings lease-out their land in the land lease market, this could be seen as a proxy for the models using the resource adjustment model. Under conditions of incomplete markets for inputs, households owning more land, in view of their non-market resource position, may opt to lease-out their land.

The non-cultivating households ─ households that own land but do not cultivate it ─ could be existent either due to the land settlement process initiated during the colonial period, or as a result of diversification into non-agricultural activities. During the colonial period, the State initiated a process of land settlement to get land revenue from the cultivators, which were namely the Ryotwari settlements, Zamindari settlements and Mahalwari settlements. The Zamindars controlled a large number of cultivators and acted as intermediaries between the State and the actual cultivators. These areas continued to have a large number of tenants even in the post-colonial period. These states include Bihar, West Bengal, etc. Further, the expansion in the non-agricultural sector also generated an increase in the proportion of land under tenancy. For example, a study by Iqbal Singh (1989) reveals that in the most advanced regions the majority of the lessors lease-out land because of their involvement in non-agricultural jobs and/or business. In fact, most of them are doing some middle level jobs in the tertiary sector. In some cases, these landowners are not even living in the village;

but this shift from the village is not complete and they still maintain their house in the village (Sawant, 1991; Parthasarathy, 1969).

The reasons for leasing-out land in many other cases are lack of manpower in the household due to widowhood or some other physical or mental handicap (Pant, 1982). In still other cases, owners having small plots of land supply it on rent. Hence, it is observed that in almost all the cases, some or the other constraint on the lessors' part is responsible for leasing-out the land (Bhalla, 1982). It seems that those large owners who were previously leasing-out land because of non-profitability of owner cultivation with hired labor have already resumed cultivating their land in the wake of land reforms (Haque, 1996). The NSS data estimates indicate Haryana, Punjab, Assam and West Bengal as high tenancy states in India. At the same time, the proportion of non-cultivating households is also high. The main reason for this is that the proportion of the households living outside the village, including those who are working in armed forces and services, have given their land on lease (Laxminarayan and Tyagi, 1982). The marginal and small farmers lease-out their land as the holdings became non-viable in the context of new technology (Sheila Balla, 1983). Further, Laxminarayan and Tyagi (1982) have stated that a reason for leasing-out land by marginal and small farmers is the lack of support from household resources and capital.

The present study focuses on some aspects in agriculture, particularly in different agro-climatic regions. For this, it may be important to understand the behavior of the land owners. Here, we attempt to analyze the agrarian structure as it is important when we study agrarian relations. In this context, ownership of land is more important, whether it is permanent or temporary ─ when there is more land under temporary ownership (leased land) there is not much investment on land development, incentives, and other agricultural progressive activities. The land owners would shift from agriculture to non-agricultural activities but they do not want to lose their permanent ownership rights on the land and hence lease-out their lands (Bardhan, 1967; Bhaduri, 1973). Moreover, the non-cultivators receive an assured rental income, and they could also make investments in non-agricultural sectors. This means that they get income from two sides ─ from agricultural activities

(without actually participating) as well as from non-agricultural activities (investing in film industry, etc.).

Table-5.1: The Distribution of Owned Land, Operated Land and Leased-out Land by Resident and Non-Resident Households in the Study Villages

Villages	Total No. of House holds	Owned Land (in acres)	Operated Land (in acres)	Land Leased -Out by Resident Households within the Village (in acres)	Land Leased-Out by Resident Households Outside the Village (in acres)	Land Leased -Out by Non-Resident House holds (in acres)	Land - Labor Ratio
Mentipudi	90	118.25	211.25	18	0	93	0.41
Kothapalli	208	128.9	302.8	26.5	0	173.9	0.89
Seethampet	170	416.14	405.34	75.1	10.8	0	1.15
Arepalli	338	1017.7	997.95	76	22	0	0.20
Tatiparthy	216	749.07	805.07	12	0	56	0.16
Chinnapur	216	305.64	294.64	64.45	12	0	0.29
Nagaram	171	396.5	422.2	5	0	28.7	0.29
Jonanki	151	267.57	196.77	59.3	28.5	0	0.27
B.Koduru	177	330.09	416.64	22.74	0	9.21	0.67
Total	1737	3729.86	4052.66	359.09	73.3	344.5	0.39

Source: Field Survey.

Table 5.1 explains the differences between owned and operated lands across the study villages. It is observed that the proportion of highest extent of land leased-out by non-resident households in the canal irrigated villages such as Mentipudi (93 acres) and Kothapalli (173.9 acres) is high. Similarly, in dry villages such as Tatiparthy and Nagaram, land is seen to be leased-out by non-resident households. However, the rest of the study villages do not have much difference between owned and operated lands. It is also observed

that in some villages such as Seethampet (108 acres), Arepalli (22 acres), Chinnapur (12 acres), and Jonanki (28.5 acres), land is leased-out by resident households to outside (neighboring villages) tenants, though there was no evidence of land being leased-out by non-resident households. A majority of the land lease transactions are found within the village, except in Mentipudi and Kothapalli. Hence, the proportion of the absentee land owners (non-resident households) is found to be highest in the canal irrigated villages. At the same time, the extent of land leased-out is also observed to be high in Mentipudi (111 acres) and Kothapalli (200.4 acres), while in some villages such as Seethampet, Arepalli, Jonanki and Chinnapur, the operating land is observed to be less than the owned land. Further, villages such as B.Koduru, Seethampet and Chinnapur, appear to be closed in terms of land lease as transactions take place only within the village. The table also gives good inferences regarding land transactions in terms of lease across the study villages. The land-labor ratio is observed to be very low in the Telangana villages such as Tatiparthy, Arepalli, Nagaram and Chinnapur, while in villages such as Kothapalli, Seethampet and B.Koduru, it is seen that the land-labor ratio is higher.

5.2.1. Class-wise Distribution

Earlier, we discussed the differences between owned land and operated land across the villages. This section discusses the various categories of households such as poor peasants, middle peasants, rich peasants, and non-cultivating households that are leasing-out land. Though the households in the village have been classified into five groups, the group of agricultural laborers (landless) has been excluded in this section because they always depend on the labor market.

Table-5.2: Class-wise Distribution of Households Leasing-out Land in the Study Villages

Class of Household	Poor Peasants		Middle Peasants		Rich Peasants		Non-Cultivating Households		Total	
Village	No.	Extent (acres)	No.	Extent (acres)	No.	Extent (acres)	No.	Extent (acres)	No.	Extent (acres)
Mentipudi	-	-	-	-	1 (20)	5 (27.78)	4 (80)	13 (72.22)	5 (100)	18 (100)
Kothapalli	-	-	2 (25)	8 (30.19)	-	-	6 (75)	18.5 (69.81)	8 (100)	26.5 (100)
Seethampet	4 (28.57)	4.5 (5.99)	2 (14.29)	6.50 (8.66)	-	-	8 (57.14)	64.10 (85.35)	14 (100)	75.10 (100)
Arepalli	4 (28.57)	6 (7.89)	2 (14.29)	14 (18.42)	-	-	9 (64.29)	56 (73.68)	14 (100)	76 (100)
Tatiparthy	1 (50)	5 (41.67)	-	-	1 (50)	7 (58.33)	-	-	2 (100)	12 (100)
Chinnapur	3 (7.69)	3.75 (5.82)	2 (5.13)	1.7 (2.64)	3 (7.69)	11 (17.07)	31 (79.49)	48 (74.48)	39 (100)	64.45 (100)
Nagaram	1 (50)	2 (40)	-	-	-	-	1 (50)	3 (60)	2 (100)	5 (100)
Jonanki	-	-	-	-	-	-	13 (100)	30.8 (100)	13 (100)	30.8 (100)
B.Koduru	25 (100)	22.74 (100)	-	-	-	-	-	-	25 (100)	22.74 (100)
Total	37 (30.33)	43.99 (13.31)	8 (6.56)	30.2 (9.13)	5 (4.10)	23 (6.96)	72 (59.02)	233.4 (70.60)	122 (100)	330.6 (100)

Source: Field Survey.
Note: Figures in brackets indicate percentages.

Table 5.2 shows the class-wise distribution of leased-out land and the number of households that are leasing-out land under the different categories. It is observed that the total number of leasing-out households is mainly in two categories: The non-cultivating households that constitute about 60 per cent of the households leasing-out around 70 per cent of the leased-out land, and the poor peasants, who constitute about 30 per cent of the households that are leasing-out about 13 per cent of the leased-out land. The table also shows that most leasing-out agents belong to the category of non-cultivating households. In Mentipudi, which is a the canal irrigated village, it is observed that out of 5 households leasing-out land, 4 are non-cultivating households that have leased-out 13 acres (72.22 per cent) of land. Similarly, in Kothapalli, out of 8 households leasing-out land, 6 are non-cultivating households, leasing-out about 18.5 acres of the land, which constitutes about 69.81 per cent of the total leased-

out land (26.5 acres) in the village. In both the villages, very few households that lease-out land are resident; non-resident lessors (absentee land owners) are more in number in these villages; this is not shown in the table[5]. In the case of Jonanki, which is irrigated by tanks, the same pattern has been observed as in the case of Kothapalli, which is canal irrigated. The researcher has observed that there are fewer instances of poor and middle peasant households leasing-out in Seethampet, Arepalli, Tatiparthy and Chinnapur. On the other hand, instances of poor peasants leasing-out land, was observed in B.Koduru, where the poor tenants have leased-out their land to a big landlord; this is known as reverse tenancy. It is observed that in Tatiparthy, out of the two households that have leased-out land, one belongs to the poor peasant category and the other belongs to the rich peasant category. Hence, the table shows that non-cultivating households are predominant as lessors in the land lease market in most of the study villages except in B.Koduru and Tatiparthy.

The total number of households that supply land in the lease market are 122 (7.02 per cent of the total number of households in the village). The extent of land leased out is 428.1 acres (11.24 per cent of the total land). There is a difference of 247 acres between the extent of land leased-out and the extent of land leased in. One can broadly identify three reasons for this mismatch: (1) Possible miss-reporting or under-reporting of details; (2) Leased-out land is held by cultivators in adjacent villages; and (3) leased-out land is being held by non-cultivators living outside the village, and hence has not been captured (due to the nature of the survey).

One reason for the difference between the extent of land leased-out and the extent of land leased-in could be under-reporting. Another reason could be due to the nature of the survey itself: We analyzed the village as a unit and had enumerated all the households in the village. So one reason for the difference could be due to the households that live in adjacent villages but own land in this village, which they lease-out. As the survey does not include non-resident households who own land in the village, they were not enumerated and so there was huge difference between the leased-out and leased-in land, especially in the canal irrigated villages. But if this is true, one should also have households in the village that own

[5] We are unable to get information about absentee land owners due to their non availability in the village. Such

land outside the village, and that should have been reported in the survey. However, there was no such case, so we may hypothesize that cultivators in the adjacent villages did not own land in the village. Another segment that lives outside the village but owns land in the village is called the non-cultivating households. So in the above three reasons, it looks that land being held by non-cultivators residing outside the village could be an important explanation for the divergence between extent of land leased-in and the extent of land leased- out.

Table 3 in Appendix III shows that across the classes, the majority of the leased-out lands are owned by non-cultivating households. While in B.Koduru the poor peasants have leased-out land (100 per cent) to rich peasants (reverse tenancy), in some villages it was observed that the rich peasants are leasing-out land (1 household in Tatiparthy and 3 households in Chinnapur) in the peak season─ the rich peasants give a piece of land to the landless labor on lease, who work as wage laborers. This is one kind of land and labor adjustment in the village economy.

5.2.2. Caste-wise Distribution

Caste-wise distribution of leasing-in and/or out of land, and the terms of lease would be useful for understanding the participation of dalits (socially excluded castes) in the land lease market. The researcher has identified the important castes in the villages as: Malas, Madigas, Schedule Tribes and Others (non-dalits) for the purpose of the study. This classification may be useful in understanding the land lease phenomenon among the dalit communities in the study villages. Table 3 gives information on the land lease distribution among the different caste groups across the study villages.

households are more in canal irrigated villages such as Mentipudi and Kothapalli in West Godavari District.

Table-5.3: Caste-wise Distribution of Lessor Households Leasing-out Land in the Study Villages

Caste	Malas		Madigas		Scheduled Tribes		Others		Total	
Village	No	Extent (acres)	No.	Extent (acres)	No.	Extent (acres)	No.	Extent (acres)	No.	Extent (acres)
Mentipudi	-	-	-	-	-	-	5 (100)	18 (100)	5 (100)	18 (100)
Kothapalli	1 (12.50)	2.5 (9.43)	-	-	-	-	7 (88)	24 (91)	8 (100)	26.5 (100)
Seethampet	-	-	-	-	-	-	14 (100)	75.1 (100)	14 (100)	75.1 (100)
Arepalli	-	-	-	-	-	-	14 (100)	76 (100)	14 (100)	76 (100)
Tatiparthy	-	-	-	-	-	-	2 (100)	12 (100)	2 (100)	12 (100)
Chinnapur	-	-	3 (7.69)	2.5 (3.88)	-	-	36 (92.31)	61.95 (96.12)	39 (100)	64.45 (100)
Nagaram	-	-	-	-	-	-	2 (100)	5 (100)	2 (100)	5 (100)
Jonanki	-	-	-	-	-	-	13 (100)	30.8 (100)	13 (100)	30.8 (100)
B.Koduru	23 (92)	21.99 (96.70)	-	-	-	-	2 (8)	0.75 (3.30)	25 (100)	22.74 (100)
Total	24 (19.67)	24.49 (7.41)	3 (3.28)	2.5 (1.06)	-	-	95 (28.74)	303.60 (91.84)	122 (100)	330.59 (100)

Source: Field Survey.
Note: Figures in brackets indicate percentages.

From Table 5.3 it is observed that there is inequitable distribution of leased-out land between dalits (Malas, Madigas and Schedule Tribes) and Others (backward and forward castes). No household from the Scheduled Tribes has leased-out any land in all the study villages, while the backward and forward caste households have leased-out land across the different agro-climatic study villages. Among the Scheduled Castes, one household has leased-out land in Kothapalli Village, while three Madiga households have leased-out land in Chinnapur. One interesting point is that 23 Mala households have leased-out land to big land owners in Jonanki Village. Therefore, one can infer that the very small amount of land, which the government has distributed to 23 Mala households under land reforms, has been taken for lease by one big landlord, and it is distressing to note that this big landlord is paying a very nominal rent (low fixed rent of Rs.500 per year) to them. However,

Mentipudi, Seethampet, Arepalli, Tatiparthy, Nagaram and Jonanki villages have no evidence of Mala, Madiga, or Scheduled Tribe households leasing-out their land.

It is further observed that in villages such as Mentipudi and Kothapalli, which are canal irrigated, there has been massive leasing-out by absentee land owners: In the leasing-out scenario of Mentipudi Village, 5 households have leased-out 18 acres of land, while the total leased-in land in the villages is 111 acres, implying that the remaining 93 acres have been leased out by non-residents. Similarly, in Kothapalli, 8 households have leased-out 26.5 acres of land, while the leased-in land is 200.4 acres. We see that both villages have huge difference between leased-out and leased-in land. The differential amount of land is taken from non-residents or absentee land owners.

In B.Koduru, we see that the total leased-out land is by residents, i.e., poor peasants, only. But in the rest of the study villages, the majority of the leased-out lands belong to resident households. Further, B.Koduru village houses more than 90 per cent Scheduled Caste households that have leased-out land to one big landlord (who belongs to a forward caste). However, in the rest of the villages, there is no evidence of land being leased-out by Scheduled Castes or Scheduled Tribes.

It is observed that the majority of the land lease exchanges have been occurring among the backward and forward caste groups, while the Scheduled Castes and Scheduled Tribes are exclusive communities in terms of land leased-in and/or out, in the study villages. Table 4 in Appendix III shows that across the castes, the Malas are leasing-in land (60 per cent) from BC and OC caste households in Mentipudi and Kothapalli; in Seethampet, leased-in land and leased-out land transactions occur only among BC and OC caste households; the BCs and OCs are leasing-out land agents in all the study villages except in B.Koduru; while in B.Koduru, 68 per cent of the Mala households are leasing-out land to OC caste households.

5.3. Leasing-In Agents of Land Lease Market in the Study Villages

Leasing-in land agents are of two types in the study villages: landless labor and landed households that lease-in land. The landless labor may lease-in land to meet their subsistence needs, while the landed households may lease-in land to produce for the market. There could be two conditions wherein the landless labor may lease-in land: One could be the case wherein markets are completely formed and an agent who is indifferent to the distinction between leasing land and selling labor power in the labor market, leases-in land; the second case could be one wherein the labor market is not formed and households enter into lease in order to meet their food security. On the other hand, a landed household may lease-in land to derive benefits from scale economy or when the size of the family is large and the members in the household are not able to get any other employment.

The available literature on resource adjustment models, which predominantly attempt to explain the leasing behavior of a household, emphasizes more on the role of market imperfections in certain key production inputs, and its impact on the forms of contracts examined. 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). This set of literature attempts to explain the reason for leasing-in as well as leasing-out by the households as the absence of some markets. The commonalities of these models are that the costs associated with transactions in factor markets lead to market failure or absence of trade. These resources could be differently distributed between households in the villages. This distribution of the resources represents an agrarian structure in the economy. If these inputs were equally distributed among the households, there is no need of any resource adjustment. Here the processing of access to these resources will be made through the market ─ if the market exists for resources, then the households that own land or labor can organize production in the economy by purchasing either the input or the services in the market. The models demonstrate adjustment of resources in imperfect markets ─ under such conditions, the land lease market unfolds in the rural economy. In other words, distribution of resources will

determine the agents that lease-in/lease-out land, and the classes that may have barriers to entry into the land lease market.

Once the labor market is formed, there is a demand for laborers. They may get sufficient employment from the labor market. The demand for labor depends on the nature of the demand in the economy. If households prefer to enter the lease market, the labor market would be incompletely formed. Under conditions of missing/incompletely formed markets for instruments, animal power, land and labor, it was shown by Vijay and Sreenivasulu (2005) that lease is a preferred choice for households.

In an earlier study by Vijay and Sreenivasulu (2006) an attempt was made to analyze the demand side factors in the labor. They have broadly identified three types of demanders in a village economy: non-cultivating households, rich peasants, and middle/poor peasants. If the economy has a dominance of non-cultivators as demanders, the dominant form of labor arrangement would be lease, whereas if the economy has dominance of rich peasants then the casual form of labor would dominate, which leads to extension of the labor market. If the economy has a dominant middle/poor peasant resource adjustment, then there would be no labor market.

5.3.1. Class-wise Distribution

In this section, we would like to find out the class of leasing-in agents in the different study villages. There were two arguments in the literature in this regard: The first argues that poor peasants (marginal and small farmers) are the agents who are leasing-in land, while the second argument states that it is the rich peasants (large land owners) who are leasing-in land. As mentioned earlier, the poor peasants lease-in land for their subsistence or survival, while the large farmers lease-in land, for scale advantage or towards commercialization of agriculture. Literature issues have given two opinions on the agents' participation in the lease market. Bardhan's (1976) field investigation points out that there are more number of smaller tenants in the market. The same opinion has also been expressed by Singh (2001). But according to Murty (2004), Laxminarayan and Tyagi (1977), and Nadkarni (1976),

large landholders enter into the land lease market in more numbers. The entry of large farmers into the lease market may further lead to capitalist development in the agricultural sector. This indicates that tenancy can also put more investment and incentives on leased-in land. When a big farmer enters into lease, he has the capacity to invest and increase productivity. This is known as capitalist tenancy. The emergence of such capitalist tenants has been reported in Punjab (Singh, 1985).

Table-5. 4: Class-wise Distribution of Households Leasing-in Land in the Study Villages

Class	Poor Peasants		Middle Peasants		Rich Peasants		Total	
Village	No.	Extent (acres)	No.	Extent (acres)	No.	Extent (acres)	No.	Extent (acres)
Mentipudi	16 (43.24)	36.5 (32.88)	13 (35.14)	29 (26.13)	8 (21.62)	45.5 (40.99)	37 (100)	111 (100)
Kothapalli	58 (74.36)	129.6 (64.67)	19 (24.36)	62.8 (31.34)	1 (1.28)	8 (3.99)	78 (100)	200.4 (100)
Seethampet	9 (32.14)	13.5 (21.00)	10 (35.71)	21.5 (33.44)	9 (32.14)	29.3 (45.57)	28 (100)	64.3 (100)
Arepalli	9 (50)	26.5 (49.07)	8 (44.44)	17.5 (32.41)	1 (5.56)	10 (18.52)	18 (100)	54 (100)
Tatiparthy	10 (66.67)	44 (64.71)	5 (33.33)	24 (35.29)	(0)	(0)	15 (100)	68 (100)
Chinnapur	15 (53.57)	29.5 (56.24)	12 (42.86)	20.75 (39.56)	1 (3.57)	2.2 (4.19)	28 (100)	52.45 (100)
Nagaram	7 (35)	10 (29.67)	12 (60)	19.7 (58.46)	1 (5)	4 (11.87)	20 (100)	33.7 (100)
Jonanki	32 (74.42)	38.2 (64.42)	9 (20.93)	12.1 (20.40)	2 (4.65)	9 (15.18)	43 (100)	59.3 (100)
B.Koduru	5 (62.5)	3.35 (10.49)	2 (25)	3.6 (11.27)	1 (12.5)	25 (78.25)	8 (100)	31.95 (100)
Total	161 (58.55)	331.2 (49.06)	90 (32.73)	211 (31.25)	25 (9.09)	158 (23.40)	275 (100)	675.1 (100)

Source: Field Survey.
Note: Figures in brackets indicate percentages.

Table 5.4 shows that out of the 37 households that have leased-in land, 16 poor peasant households have leased-in about 36.5 acres land in Mentipudi. Similarly, in Kothapalli, out of the 78 households, 58 poor peasant households have leased-in 129.6 acres of land. This shows that more than 74 per cent of households in the canal irrigated villages that are leasing- in land are poor peasant households. A similar pattern was observed in Jonanki

Village which is irrigated by public tanks. Overall in the study villages, poor peasants are observed to be dominating as leasing-in agents ─ 58.55 per cent of the poor tenant households have taken 49.06 per cent of the leased-in land. On the other hand, some study villages, such as Seethampet and B.Koduru show rich peasants dominating as leased-in land agents, while middle peasants have taken more leased-in land than other household categories in Chinnapur and Nagaram villages. Further, it was observed that one rich peasant household has taken 25 acres of leased-in land in B.Koduru from the poor peasants, while in the remaining villages, such as Arepalli and Tatiparthy the poor and middle peasant households have dominated as leasing-in land agents in the land lease market. From the table we infer that in public irrigated villages such as Mentipudi, Kothapalli and Jonanki there is high extent of leased-in land and the predominant leasing-in land agents are the poor peasants.

It was found in the study that across the classes, agricultural laborers and poor peasants are the major leasing-in households across the study villages (see Appendix III, Table 2). While majority of the leased-out households are non-cultivating households, majority of leased-in agents are the agricultural laborers and poor peasants. It was found that 75.64 per cent of the agricultural labor households are leasing-in land, and the 96.16 per cent of the non-cultivating class are leasing-out land in Kothapalli Village; in Seethampet, 67.85 per cent of the middle and rich peasants are leasing-in land from non-cultivating households; in Arepalli and Tatiparthy, poor peasants are dominantly leasing-in land from non-cultivating households; in Chinnapur, 89.29 per cent of the poor and middle peasants are leasing-in land from non-cultivating households; poor peasants were found to be the major class of lessees leasing-in land from the non-cultivating households in Nagaram and Jonanki villages; and the rich peasants were the major agents leasing-in land from poor peasants.

5.3.2. Pure and Mixed Tenants

There are two categories of tenants: pure tenants and mixed tenants. A pure tenant is one who does not own land (landless). A mixed tenant is one owns land. Usually mixed tenants take up tenancy as a labor and resources adjustment process, while pure tenants (landless labor) lease-in land as there is uncertainty of employment opportunities in the rural labor

market ─ sometimes the pure tenants do not get work throughout the year. Pure tenant households and mixed tenant households together are referred to as operational holdings reporting leased-in area. Table 5 shows the distribution of the number of households and the extent of leased-in land (in acres) in different study villages.

Table-5.5: Number of Households and Area of Distribution between Pure and Mixed Tenants

Villages	Pure Tenants		Mixed Tenants		Total	
	No. of Households	Extent of Leased-in Land (in acres)	No. of Households	Extent of Leased-in Land (in acres)	No. of Households	Extent of Leased-in Land (in acres)
Mentipudi	19 (51.35)	46.5 (41.89)	18 (48.65)	64.5 (58.11)	37 (100)	111 (100)
Kothapalli	60 (76.92)	157.1 (78.39)	18 (23.08)	43.3 (21.61)	78 (100)	200.4 (100)
Seethampet	9 (32.14)	16.5 (25.66)	19 (67.86)	47.8 (74.34)	28 (100)	64.3 (100)
Arepalli	2 (11.11)	8.5 (15.74)	16 (88.89)	45.5 (84.26)	18 (100)	54 (100)
Tatiparthy	0.0 (0.00)	0.00 (0.00)	15 (100.00)	68 (100)	15 (100)	68 (100)
Chinnapur	3 (10.71)	7.5 (14.30)	25 (89.29)	44.95 (85.7)	28 (100)	52.45 (100)
Nagaram	2 (10.00)	5 (14.84)	18 (90.00)	28.7 (85.16)	20 (100)	33.7 (100)
Jonanki	17 (39.53)	19.9 (33.56)	26 (60.47)	39.4 (66.44)	43 (100)	59.3 (100)
B.Koduru	2 (25.00)	0.45 (1.41)	6 (75.00)	31.5 (98.59)	8 (100)	31.95 (100)
Total	114 (41.45)	261.45 (38.73)	161 (58.55)	413.7 (61.27)	275 (100)	675.1 (100

Source: Field Survey.
Note: Figures in brackets indicate percentages.

Table-5.5 shows that pure tenants, who comprise 41.45 per cent of the total number of leased-in households, have leased-in 38.73 per cent of the total leased-in land. The pure tenants are dominant in two West Godavari villages such as in Mentipudi ─ where 51.35 per cent of the pure tenant households have leased-in 41.89 per cent of the land, and in Kothapalli ─ where 76.92 per cent of the pure tenant households have leased-in 78.39 per cent of the land. It is observed that pure tenants have taken 39.53 per cent of the leased-in land in Jonanki, and 32.14 per cent of the households that have leased-in land are pure

tenants. However, in the rest of the study villages, there are fewer number of pure tenants in the land lease market. It was found that mixed tenants were dominant in all the villages except in the canal irrigated ones.

5.3.3. Caste-wise Distribution

In this section we present caste-wise distribution of agents leasing-in land across the study villages. Field evidence shows that Mala and Madiga castes are not taking much leased-in land, but are participating in the labor market as wage labor or permanent labor. It has been noted that they have very less possibility to enter into the land lease market. In the case of Scheduled Tribes, they are isolated from the village economy. They are neither leasing-in nor leasing-out land in the market; instead they are depending on their indigenous activities. As for the backward and forward castes, they are highly involved in the land lease market in all the study villages. Table 6 shows the caste-wise distribution of the households that are leasing-in land.

Table-5.6: Caste-Wise Distribution of Households Leasing-in Land in the Study Villages

Caste	Malas		Madigas		Scheduled Tribes		Backward & Upper Castes		Total	
Village	No.	Extent (acres)	No.	Extent (acres)	No.	Extent (acres)	No.	Extent (acres)	No.	Extent (acres)
Mentipudi	6 (16.22)	20 (18.02)	-	-	-	-	31 (83.78)	91 (81.98)	37 (100)	111 (100)
Kothapalli	24 (30.77)	52.1 (26.00)	-	-	-	-	54 (69.23)	148.3 (74.00)	78 (100)	200.4 (100)
Seethampet	-	-	-	-	-	-	28 (100)	64.3 (100)	28 (100)	64.3 (100)
Arepalli	-	-	1 5.56	0.5 (0.93)	2 (11.11)	2.5 (4.63)	15 (83.33)	51 (94.44)	18 (100)	54 (100)
Tatiparthy	-	-	-	-	-	-	15 (100)	68 (100)	15 (100)	68 (100)
Chinnapur	3 (10.71)	5.5 (10.49)	10 35.71	20.5 (39.08)	-	-	15 (53.57)	26.45 (50.43)	28 (100)	52.45 (100)
Nagaram	-	-	3 15	6 (17.80)	-	-	17 (85)	27.7 (82.20)	20 (100)	33.7 (100)
Jonanki	-	-	-	-	-	-	43 (100)	59.3 (100)	43 (100)	59.3 (100)
B.Koduru	-	-	-	-	-	-	8 (100)	31.95 (100)	8 (100)	31.95 (100)
Total	33 (12)	77.6 (11.49)	14 5.09	27 (4.00)	2 (0.73)	2.5 (0.37)	226 (82.18)	568 (84.14)	275 (100)	675.1 (100)

Source: Field Survey.

Note: Figures in brackets indicate percentages.

The table 5.6 shows that there is an inequitable distribution of leased-in land among the Malas, Madigas, Scheduled Tribes (dalits), and the backward and upper castes. It is observed that 49 dalit households that constitute about 17 per cent of the village population have taken very less amount of leased-in land ─ about 107.1 acres (15 per cent), while 226 backward and upper caste households that constitute 86.14 per cent have taken about 568 acres (82.18 per cent) of the leased-in land. This shows that there is inequitable distribution of land among the dalits and non-dalits. It has also been noted that the leased-out agents prefer to lease-in their land to households belonging to the same caste. For example, in villages such as Seethampet, Tatiparthy, Jonanki and B.Koduru, there has been no leasing-in of land to households belonging to dalit communities. However, more number of Scheduled Caste households have leased-in land from the upper castes in Mentipudi and Kothapalli villages because there are more non-resident (absentee) land owners in these villages; while in Telangana villages such as Arepalli, Chinnapur and Nagaram, it was observed that a few dalit households have leased-in land. There are a few Mala households that have leased-in land in Mentipudi, Kothapalli and Chinnapur, a few Madiga households that have leased-in land in Chinnapur and Nagaram, and only two Scheduled Tribe households in Arepalli that have leased-in land. However, major leased-in land exchanges are observed to take place among the backward and upper castes. In fact, it is observed that 82 per cent of the households belong to other castes (BCs and OCs).

Appendix III (Table 1) shows that the land lease transactions have been occurring among similar caste groups. It was found to be high among the non-dalit households in all the study villages. Most of the lease exchanges (81.08 per cent) have taken place within BC and OC households. Precisely 94.59 per cent of the leasing-in households belong to BCs and OCs. Similarly, majority of the lease transactions occur among non-dalits (BCs and OCs), such as in Kothapalli (66.67 per cent), Seethampet (96.33 per cent), Arepalli (77.78 per cent), Tatiparthy (73.33 per cent), Nagaram (95 per cent), and Jonanki (100 per cent). However, some villages such as Chinnapur (35.7 per cent) and B.Koduru (20 per cent) reported lowest lease transactions among non-dalit families, while in Kothapalli the highest number of Mala caste households has leased-in land (33.33 per cent). But in Seethampet no dalit household is involved in land lease transactions. Furthermore, the proportion of dalit households leasing-in land is very low in dry villages such as Tatiparthy and Arepalli, and Scheduled

Tribe households are not involved in land lease transactions except for one household that has leased-in land in Chinnapur Village. In B.Koduru non-dalit households (60 per cent) have leased-in land from Mala households.

Next, if we observe that in all study villages, poor peasants are dominant when it comes to leasing-in land, as 58 per cent of these households have taken 49 per cent of the leased-in land. For example, the proportion of poor peasant households leasing-in land is 74.3 per cent in Kothapalli; 74.42 per cent in Jonanki; and 67 per cent in Tatiparthy. And while in Arepalli, Chinnapur and Nagaram, the poor and middle peasant households are dominant lessees, the rich peasant households are dominant in B.Koduru, Seethampet and Mentipudi. It is further observed that pure tenants (landless) are more in Kothapalli, Mentipudi and Jonanki villages, which have public provision of irrigation.

5.4. Forms of Contracts in the Study Villages

As the information on the leasing-in agents is more reliable when compared to the leasing-out agents, the data presented with respect to the leasing-in households. There are three forms of lease prevalent in the village economy: fixed kind, fixed cash and sharecropping. The researcher would like to present in this section the class-wise and caste-wise distribution of different forms of lease across the study villages. Most of the lease agreements (arrangements) were informal, oral or short-term agreements (crop period).

Literature evidences show that forms of lease are determined by various factors. Nature of crops is one among them; for example, sharecropping is high in paddy and wheat growing areas and fixed cash is important in areas where oilseeds, cotton, and other cash crops are prevalent. Rao (1971) has shown that crop-sharing is a pre-dominant form of lease in areas where there is economic certainty or in command areas; fixed cash lease is predominant in areas where there is less irrigation; in areas where food grain production is high, sharecropping is a predominant form of lease. Another study by Narayana and Nair (1994) shows that irrigation uncertainty leads to sharecropping, while Verma and Mishra (1994) have pointed out that the institution of share-tenancy truly reflects the conditions of subsistence tenancy in a backward agrarian setting like Bihar.

The selected villages are based on different agro-climatic conditions; this has made it possible to study inter-regional differences in the extent and form of lease in the land lease

market. Krishna Rao (1996) has noted that the area under tenancy is tending to increase, in a form organized on a purely commercial basis with no extra economic pressure. Rent is paid either in cash or in the form of a fixed amount of produce. Where rent is paid in cash, payment is made before the paddy crop is raised.

5.4.1 Class-wise Distribution

A village study by Hayami and Otsuka (1992) has found that mostly in the rice-bowl areas there are a large number of non-cultivating (absentee landowners) households, who prefer fixed tenancy. Nandkarni (1976) has pointed out that the small owners lease-out land to large farmers for a fixed rental form of lease. Hallagam (1978) projects the sharecropping contract as a screening device in a market where prospective tenants are endowed with different amounts of entrepreneurial ability. Under this situation, individuals with the greatest entrepreneurial ability choose to be fixed-rent tenants, while those with no such ability become wage earning workers, and the intermediate cases become share tenants. According to Reid (1977) the landlords as well as tenants contribute 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. Such a contract proceeds to mitigate morally hazardous behavior on the part of both agents ─ a phenomenon as yet unexplored in the literature.

If all the monitoring of input quality is undertaken by a single agent, he becomes the sole residual claimant ─ in a wage contract it is the landlord, while 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 owners and the prevailing production technology. The equilibrium contractual structure emerges as a result of optimizing the decisions of both landlords and tenants in a given environment. The 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 rents would be preferred when 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 shift from wage-work to sharecropping, then to fixed-rent tenancy, and finally to landownership (Reid, 1979).

Table-5.7: Distribution and Extent (in acres) of Terms of Lease in the Study Villages

	Form of Lease		Mentipudi	Kothapalli	Seethampet	Arepalli	Tatiparthy	Chinnapur	Nagaram	Jonanki	B.Koduru	Total
Poor Peasants	Fixed Kind	Number	17 (15.32)	59 (29.44)	1 (1.56)	13 (24.07)	1 (1.47)	2 (3.81)	2 (5.93)	3 (5.06)	2 (6.26)	100 (14.81)
		Extent	37.5 (33.78)	133 (66.17)	1.5 (2.33)	36 (66.67)	1 (1.47)	3 (5.72)	2.5 (7.42)	2.4 (4.05)	1.05 (3.28)	217.55 (32.22)
	Fixed Cash	Number			7 (10.89)		8 (11.76)	3 (5.72)	0 (0)	1 (1.69)	2 (6.26)	21 (3.11)
		Extent			11 (17.11)	0 (0)	41.5 (61.03)	5.5 (10.49)	0 (0)	1 (1.69)	0.7 (2.19)	59.7 (8.84)
	Sharecropping	Number			1 (1.56)		2 (2.94)	10 (19.07)	5 (14.84)	29 (48.90)	1 (3.130)	48 (7.11)
		Extent			1 (1.56)		6.5 (9.56)	21 (40.04)	7.5 (22.26)	35.8 (60.37)	1.6 (5.00)	73.4 (10.87)
Middle Peasants	Fixed Kind	Number	12 (10.81)	18 (8.98)		2 (3.70)	2 (2.94)		4 (11.87)			38 (5.63)
		Extent	28 (25.23)	59.8 (29.84)		4 (7.41)	7 (10.29)		6.7 (19.88)			105.5 (15.63)
	Fixed Cash	Number			10 (15.55)	2 (3.70)	1 (1.47)	1 (1.91)	1 (2.97)	2 (3.37)	2 (6.26)	19 (2.81)
		Extent			21.5 (33.44)	4 (7.41)	10 (14.71)	3 (5.72)	0.5 (1.48)	2.3 (3.88)	3.6 (11.26)	44.9 (6.65)
	Sharecropping	Number					1 (1.47)	11 (20.97)	7 (20.77)	6 (10.12)		25 (3.70)
		Extent					2 (2.94)	17.75 (33.84)	12.5 (37.09)	8.8 (14.84)		41.05 (6.08)
Rich Peasants	Fixed Kind	Number	8 (7.21)	1 (0.50)		1 (1.85)			1 (2.97)	2 (3.37)		13 (1.93)
		Extent	45.5 (40.99)	8 (3.99)		10 (18.52)			4 (11.87)	9 (15.18)		76.5 (11.33)
	Fixed Cash	Number			9 (14.00)			1 (1.91)			1 (3.13)	11 (1.63)
		Extent			29.3 (45.57)			2.2 (4.19)			25 (78.24)	56.5 (8.37)
Total	Fixed Kind	Number	38.0 (82.6)	78.0 (100)	1 (3.70)	8 (44.44)	3 (20.00)	2 (7.14)	5 (25.00)	3 (6.98)	2 (25.00)	140 (50.91)
		Extent	136.5 (100)	200.4 (100)	1.5 (2.37)	19 (35.19)	8 (11.76)	3 (5.72)	10.5 (31.16)	2.4 (4.15)	1.05 (11.73)	382.35 (56.64)
	Fixed Cash	Number			25 (92.59)	6 (33.33)	9 (60.00)	3 (10.71)	2 (10.00)	4 (9.30)	5 (62.50)	54 (19.64)
		Extent			60.8 (96.05)	15.5 (28.70)	51.5 (75.74)	5.5 (10.49)	1.2 (3.56)	10.3 (17.82)	6.3 (70.39)	151.1 (22.38)
	Sharecropping	Number			1 (3.70)	4 (22.22)	3 (20.00)	23 (82.14)	13 (65.00)	36 (83.72)	1 (12.50)	81 (29.45)
		Extent			1 (1.58)	19.5 (36.11)	8.5 (12.50)	43.95 (83.79)	22 (65.28)	45.1 (78.03)	1.6 (17.88)	141.65 (20.98)
Total		Number	37 (33.33)	78 (38.92)	28 (43.55)	18 (33.33)	15 (22.06)	28 (53.38)	20 (59.35)	43 (72.51)	8 (25.03)	275 (40.73)
		Extent	111 (100)	200 (100)	64.3 (100)	54 (100)	68 (100)	52.45 (100)	33.7 (100)	59.3 (100)	31.95 (100)	675.1 (100)

Source: Field Survey.

Note: Figures in brackets indicate percentages.

Table 5.7 shows that the terms of lease are different across the villages and among the different categories of tenants in the study villages. The poor tenants who dominate the land lease market, particularly in Mentipudi and Kothapalli villages (which are 100 per cent canal irrigated) prefer fixed kind of lease. In Seethampet, which is a dry village, fixed cash is the dominant form of lease, preferred by the poor tenants. Even in Tatiparthy, which is a drought-affected village, the poor tenants paid rent in the form of fixed cash. Sharecropping is observed to be the dominant form of lease preferred by poor peasants in dry villages like Arepalli, Tatiparthy and Chinnapur. Similarly, in the case of Jonanki Village, which is irrigated by public tanks, sharecropping is the dominant form of lease ─ here all categories of tenants (30 poor peasant and 9 middle peasant households) prefer sharecropping. Fixed cash is observed to be the dominant form of lease in B.Koduru, which is a dry village cultivating prom trees in the leased-in land. Reverse tenancy is also seen to exist in this village as one big landlord has leased lands from the poor peasants.

5.4.2. Caste-wise Distribution

Table-5.8: Caste-wise Terms of Lease in the Study Villages

Caste	Form of Lease		Mentipudi	Kothapalli	Seethampet	Arepalli	Tatiparthy	Chinnapur	Nagaram	Jonanki	B.Koduru	Grand Total
		Number	7 (18.42)	26 (33.33)	-	-	-	1 (3.57)				34 (12.36)
	Fixed Kind	Extent (acres)	26 (19.05)	59.1 (29.49)	-	-	-	1.5 (2.86)				86.6 (12.83)
		Number	-	-	-	-	-	4 (14.29)		1 (2.33)		5 (1.82)
Malas	Sharecropping	Extent (acres)	-	-	-	-	-	7 (13.35)		0.5 (0.87)		7.5 (1.11)
		Number	-	-	-	1 (5.56)	-	1 (3.57)	1 (5)			3 (1.09)
	Fixed Kind	Extent (acres)	-	-	-	0.5 (0.93)	-	1.5 (2.85	3 (8.90)			5 (0.74)
		Number	-	-	-	-	-	2 (7.14)				2 (0.73)
	Fixed Cash	Extent (acres)	-	-	-	-	-	3.5 (6.67)				3.5 (0.52)
		Number	-	-	-	-	-	6 (21.43)				6 (2.18)
	Sharecropping	Extent (acres)	-	-	-	-	-	14 (26.69)				14 (2.07)
		Number	-	-	-	2 (11.11)	-					2 (0.72)
	Fixed Cash	Extent (acres)	-	-	-	2.5 (4.63)	-					2.5 (0.37)
		Number	-	-	-	-	-	2 (7.14)				2 (0.72)
Madigas	Sharecropping	Extent (acres)	-	-	-	-	-	4 (7.63)				4 (0.59)
		Number	31 (81.58)	52 (66.67)	1 (3.70)	7 (38.89)	3 (20)		4 (20)	3 (6.98)	2 (25)	103 (37.45)
	Fixed Kind	Extent (acres)	110.5 (80.95)	141.3 (70.51)	1.5 (2.37)	18.5 (34.26)	8 (11.76)		7.5 (22.26)	2.4 (4.15)	1.05 (11.73)	290.8 (43.07)
		Number	-	-	25 (39.49)	4 (22.22)	9 (60)	1 (3.57)	2 (10.00)	4 (9.30)	4 (50)	49 (17.82)
	Fixed Cash	Extent (acres)	-	-	61 (96.05)	13 (24.07)	51.5 (75.74)	2 (3.81)	1.2 (6)	10.3 (23.95)	3.3 (36.87)	142.1 (21.05)
		Number	-	-	1 (3.70)	4 (22.22)	3 (20)	11 (39.29)	13 (65)	35 (81.40)	1 (12.5)	68 (24.73)
Others	Sharecropping	Extent (acres)	-	-	1 (1.58)	19.5 36.11)	8.5 (12.5)	18.95 (36.13)	22 (65.28)	44.6 (77.16)	1.6 (17.88)	116.2 (17.20)
		Number	38 (100)	78 (100)	1 (3.7)	8 (44.44)	3 (20)	2 (7.14)	5 (25)	3 (6.97)	2 (25)	140 (50.91)
	Fixed Kind	Extent (acres)	136.5 (100)	200.4 (100)	1.5 (2.36)	19 (35.19)	8 (11.8)	3 (5.72)	10.5 (31.16)	2.4 (4.15)	1.05 (11.7)	382.4 (56.64)
		Number	-	-	25 (39.49)	6 (33.33)	9 (60)	3 (10.71)	2 (10)	4 (9.30)	5 (62.5)	54 (19.64)
	Fixed Cash	Extent (acres)	-	-	61 (96.05)	15.5 (28.70)	51.5 (75.7)	5.5 (10.49)	1.2 (6)	10.3 (23.95)	6.3 (70.39)	151.1 (22.38)
		Number	-	-	1 (3.7)	4 (22.22)	3 (20)	23 (82.14)	13 (65)	36 (83.72)	1 (12.5)	81 (29.45)
Total	Sharecropping	Extent (acres)	-	-	1 (1.57)	19.5 (36.11)	8.5 (12.5)	43.95 (83.79)	22 (65.28)	45.1 (78.03)	1.6 (17.9)	141.7 (20.98)
		Number	38 (100)	78 (100)	27 (100)	18 (100)	15 (100)	28 (100)	20 (100)	43 (100)	8 (100)	275 (100)
Grand Total		Extent (acres)	136.5 (100)	200.4 (100)	63 (100)	54 (100)	68 (100)	52.45 (100)	33.7 (100)	57.8 (100)	8.95 (100)	675.1 (100)

Source: Field Survey.

Note: Figures in brackets indicate percentages.

From Table 5.8, it can be observed that 7 Mala households in Mentipudi and 26 Mala households in Kothapalli have preferred fixed kind as lease form. It is generally observed that the households in both villages prefer fixed kind irrespective of caste and class; there is no other form of lease in both villages. We see that fixed cash is preferred by one Madiga household in Chinnapur and one Scheduled Tribe household in Arepalli. Except for these two households no other dalit household showed preference for fixed cash in the study villages. We also observe from the table that the backward and upper caste households (31 in Mentipudi and 52 in Kothapalli) have preferred fixed kind as a lease form; however, in other study villages, very few households have preferred this form of lease. In Seethampet, the backward and upper caste households have shown preference to fixed cash, while the Madiga, Mala, and Scheduled Tribe households cannot even enter the land lease market in the village. It was observed in Jonanki that sharecropping is a dominant form of lease ─ all households leasing-in land, most of which belong to other castes showed preference to this form: out of the 42 households, 35 households preferred sharecropping, 4 households preferred fixed cash, and 3 households preferred fixed kind; while none of the dalit households entered into the land lease market in the village. In the case of B.Koduru, fixed cash is seen to be the dominant form of lease taken up by the upper caste households. Here too the dalits cannot lease-in land; while 25 Mala households have leased-out their land to an upper caste landlord under fixed cash form of lease.

Table-5.9: Summary Statistics on Value of Rent (in rupees) per acre among Pure and Mixed Tenants across the Study Villages

Village	Rent	Pure Tenant	Mixed Tenant	Total
Mentipudi	Average	7088.81	7101.70	7095.08
	CV	7.42	8.28	7.74
Kothapalli	Average	7615.96	7645.89	7622.87
	CV	11.75	3.89	10.44
Seethampet	Average	6038.51	5678.83	5794.44
	CV	9.80	15.67	14.03
Arepalli	Average	2448.86	3526.39	3392.15
	CV	28.28	15.76	18.74
Tatiparthy	Average	0.00	2049.19	2049.19
	CV	0.00	54.24	54.24
Chinnapur	Average	3306.06	4021.45	3944.80
	CV	34.23	43.35	42.78
Nagaram	Average	4407.95	3257.78	3372.80
	CV	78.57	42.26	46.43
Jonanki	Average	4022.00	3907.38	3952.69
	CV	49.39	33.08	40.01
B.Koduru	Average	0.00	1767.80	1767.80
	CV	0.00	89.21	89.21
Total	Average	6589.26	4517.89	5356.95
	CV	28.52	47.47	108.83

Source: Field Survey.
Note: CV means coefficient of variation

Table 5.9 shows that the rent value per acre and per crop paid by the tenants is very low (Rs.1767.80) in B.Koduru Village, where reverse tenancy has also been noticed. Similarly, the figure is observed to be low at Rs.2049.19 in the dry village of Tatiparthy in Mahabubnagar District. A significantly a higher rent per acre and per crop has been observed to be paid by the tenants in West Godavari District, which has canal irrigated villages such as Mentipudi (Rs.7088.81) and Kothapalli (Rs.7615.96). It is further observed that pure tenants have paid substantially lower rent per acre compared to mixed tenants in the canal irrigated villages of Mentipudi and Kothapalli, and in the other study villages too, the mixed tenants are found to be paying a substantially higher rent than the pure tenants. In villages such as

Tatiparthy and B.Koduru, the pure tenants cannot enter into the land lease market, whereas in areas which are irrigated by canals, and where paddy is a monocrop, the highest average rent has been reported. In these villages even the Co-efficient of Variance (CV) was found to be low because there was good irrigation through government canals. However, in villages which did not have good irrigation facilities, there was a low average per acre and the CV was found to be higher. The lowest rent value paid was Rs.2049.19 in Tatiparthy Village of Mahabubnagar District, which lies in the drought-prone area and where rainfed crops such as jowar, castor, etc., are predominantly grown. There was a significant amount of rent difference between pure and mixed tenants across the villages. The CV was found to be different between pure and mixed tenants across the villages. In one village, the rent value per acre was maximum at Rs.7645.89, while in another village, it was minimum at Rs.2049.19. This would imply that there was a huge difference in terms of rent value per acre across the villages.

We observe that all categories of farmers have preferred fixed kind for lease in Mentipudi and Kothapalli, whereas in Seethampet and B.Koduru, most of the tenants have preferred fixed cash for lease. In Arepalli Village, all categories of tenants have preferred fixed kind for lease, whereas in Tatiparthy Village, fixed cash was the dominant form of lease preferred by all tenants including the poor tenants. And in Chinnapur, Nagaram and Jonanki sharecropping was the dominant form of lease. If we observe these details caste wise, fixed kind was the form of lease preferred by all the caste groups in Mentipudi, Kothapalli and Arepalli, whereas in Seethampet, Tatiparthy and B.Koduru, there are no households from the Mala, Madiga and Scheduled tribes that are leasing-in land. However, the other caste groups have preferred fixed cash as a form of lease. Furthermore, in Chinnapur, Nagaram, and Jonanki, all caste groups have preferred sharecropping as the form of lease. Thus, the study villages seem to be different in terms of types of tenants and rent value per acre.

5.5. Typology of Lease Market in the Study Villages

A great deal of attention has been given to classify the study villages on the basis of agro-climatic settings. There is some literature such as Jodha (1981), who classified the three agro-climatic zones based on heterogeneity of agricultural tenancy (extent and terms of lease).

Another study by Dasgupta (1975) has attempted village classification based on socio-economic systems. The present section seeks to develop a simplified typology of the study villages based on village characteristics, inter-regional variations, variation in extent of leased-in land, terms of lease and variations among different agents involved in land lease market. The village characteristics include the nature of irrigation, cropping pattern, and land distribution, and their heterogeneity is reflected on in terms of the extent and forms of lease. Table 11 gives us the heterogeneity of village characteristics and the land lease markets in the different study villages.

Table-5.10: The Percentage Distribution of Households and Extent of Area in Different Study Villages

Village	Mentipudi	Kothapalli	Seethampet	Arepalli	Tatiparthy	Chinnapur	Nagaram	Jonanki	B.Koduru
Canal irrigation (% of total operated land)	100	100	0.00	53.26	0.00	61.47	0.00	0.00	0.00
% of land irrigated	100	100	54.77	90.35	44.76	78.16	70.74	92.22	58.09
% of land leased to operated land	52.54	66.18	15.86	5.41	8.45	17.8	7.98	30.14	7.67
% of land leased-in by pure tenants to total leased in land	41.89	78.39	25.66	15.74	0.00	14.30	14.84	33.56	1.41
% NCPH land to total operated land	8.52	8.75	18.53	7.62	1.49	21.87	1.87	15.65	5.46
% of pure tenants to total leas-in households	51.35	76.92	32.14	11.11	0.00	10.71	10.00	39.53	25
% of landless labor households	49.59	75.95	53.52	15.97	9.72	24.52	20.45	32.44	39.54
% of land owned by large land (above 10 acres) owners	12.68	17.86	51.18	43.85	17.35	23.88	20.43	41.11	54.23
% of leasing-in households to total households	41.11	37.50	16.47	5.33	6.94	12.96	11.70	28.48	4.52
% of leasing-in households belonging to Scheduled Castes	16.22	30.77	0	2.55	0	25	20	2.33	0
% land in fixed rental contracts	100	100	100	100	68.38	21.93	40.65	23.44	94.93
% land under cash crops in rental contracts	0	0	61.12	0	56.62	10.49	43.35	0	91.71
% leased-in land under paddy	100	100	38.88	100	0	89.57	86.65	100	8.29

Source: Field Survey.

Note: NCPH means Non-Cultivating Peasant Households

The table 5.10 shows that villages like Mentipudi and Kothapalli which are 100 per cent public canal irrigated have a high percentage of landless households (49.59 per cent in Mentipudi and 75.95 per cent in Kothapalli), as well as pure tenants (41.89 per cent in Mentipudi and 78.39 per cent in Kothapalli). There is also a high extent of leased-in land, i.e., 52.54 and 66.18 per cent respectively, in the above-mentioned two villages. The percentage of big land owners (above 10 acres) are less in both villages (12.68 per cent in Mentipudi and 17.86 per cent in Kothapalli). Contrastingly in B.Koduru and Seethampet there is a high percentage of big land owners (51.18 per cent in Seethampet and 54.23 per cent in B.Koduru). In the rest of the villages, we see that the percentage of big land owners is less. Next, the percentage of Scheduled Caste households leasing-in land is high in Mentipudi (16.22), Kothapalli (30.77), Chinnapur (25), and Nagaram (20), while it is very less in Arepalli (2.55) and Jonanki (2.33); and in some villages such as Seethampet, Tatiparthy and B.Koduru, we have observed that there has been no instance of leasing-in land by Scheduled Caste households.

With reference to fixed rental contracts we observe that some villages, such as Mentipudi (100 per cent), Kothapalli (100 per cent), Seethampet (100 per cent), Arepalli (100 per cent), and B.Koduru (94.93 per cent), have a dominant fixed rent system of lease, while in Tatiparthy, which is a dry village, only about 68.38 per cent has fixed rental system of lease. In the rest of the study villages, fixed rental system was significantly less, such as in Chinnapur (23.44 per cent), Nagaram (40.65 per cent), and Jonanki (23.44 per cent). With respect to leased-in land, in majority of the study villages, such as Mentipudi, Kothapalli, Arepalli, Jonanki, Chinnapur and Nagaram, paddy is cultivated as a dominant crop, whereas in Tatiparthy Village it has been observed that paddy is not cultivated in the leased-in land; and in B.Koduru only 8 per cent of the leased-in land is under paddy cultivation. Coming to cash crops, villages such as B.Koduru (91.71 per cent), Seethampet (61.12 per cent), and Tatiparthy (56.62 per cent), have been cultivating cash crops in the leased-in land.

The main inferences from the table are that in villages where irrigation is through canals, there is more percentage of operated land under tenancy, as well as a high proportion of pure tenant households. Arepalli and Chinnapur have less extent of leased-in land even though

they are irrigated by canal, the reason for which could be that they are only partly (50 per cent) irrigated through canals. Similarly Jonanki Village, which is being irrigated (92 per cent) by tanks, has a high extent of leased-in land as well as high proportion of pure tenants. Thus, the table shows that where there is public provision of irrigation, there is a high extent of leased-in land.

5.5.1 Types of Villages

The researcher attempted to classify the study villages into groups based on sources of irrigation for purpose of this study. This is to identify whether irrigation influences the extent of leasing-in/out of land and the forms of lease, and to identify if there are any differences in terms of leased-in/out land across the different agro-climatic conditions. Thus, the study villages are classified into five types of villages: (1) canal irrigated villages (public provision of irrigation); (2) well or tube well irrigated villages (private provision of irrigation); (3) tank irrigated villages (public provision depending on rainfall); (4) villages irrigated through a combination of sources (wells/tube wells and tanks and canals); and (5) dry villages (rainfed villages for which there is no certain irrigation source).

Table-5.11: Percentage Area under Tenancy, Forms of Lease and Percentage of Irrigated Area by Major Sources of Irrigation in the Study Villages

Type of Village	Village	Percentage of Area under Tenancy	Dominant Form of Lease	Percentage of Irrigated Area	Major Source of Irrigation
1	Mentipudi	52.54	Fixed Kind	100	Canal
	Kothapalli	66.18	Fixed Kind	100	
2	Seethampet	15.86	Fixed Cash	54.99	Wells/ Tube wells
	B.Koduru	7.67	Fixed Cash	58.09	
3	Jonanki	30.14	Sharecropping	92.22	Tanks
4	Arepalli	5.41	Sharecropping	90.35	Combination of Sources: Wells/ Tube wells/Tanks/ Canal
	Chinnapur	17.8	Sharecropping	78.16	
	Nagaram	7.98	Sharecropping	70.47	
5	Tatiparthy	8.45	Fixed Cash	27.49	Rain fed

Source: Field Survey.

Table 5.11 shows that in villages where irrigation is high there is a high extent of land under lease. For example, in the case of Mentipudi and Kothapalli, which are 100 per cent canal irrigated, more than 50 per cent of the land is under tenancy. However, we see that in Jonanki, which is 92.22 per cent tank irrigated, has only 30.14 per cent of land under tenancy. It is observed that in villages where wells/tube wells and a combination of irrigation sources (wells, tanks and canals) are dominant there was no significant land under tenancy. And in the case of Tatiparthy, which is a rainfed village, no significant extent of land (8.45 percent) is under tenancy.

On the other hand, in villages where canal irrigation is high fixed kind is the dominant form of tenancy; whereas in villages where well / tube well irrigation is more, fixed cash form of tenancy is dominant, and in Jonanki, which is irrigated by tanks, sharecropping is the significant form of lease. Further, villages such as Chinnapur and Nagaram, which have a combination of different sources of irrigation, it was found that sharecropping is a dominant form of lease; and in Arepalli, fixed kind is the predominant form of lease. It can be inferred from the table that the extent and forms of lease in the study villages are influenced by the nature of irrigation. In this context, the regional dimension of tenancy also plays an important role: Highly irrigated intensive villages have high tenancy and these tend to be mostly rice growing villages, while less irrigated intensive villages are seen to have low tenancy. Similarly, highly irrigated villages have fixed rent as the dominant form of land lease, whereas in dry villages it is sharecropping, except in Seethampet, Tatiparthy and B.Koduru ─ These villages are special cases: Seethampet is a commercial village, Tatiparthy is a drought-affected village, and B.Koduru is a village where a big landlord has taken land for lease from the marginal and small holders (reverse tenancy).

The major observations regarding the various types of villages are as follows:

Type 1: Canal Irrigated Village: These villages are located in the canal irrigated areas of West Godavari District. These are monocrop villages in which paddy is the only crop cultivated in both seasons. The proportion of landless labor households, and the extent of leased-in land is quite high, and the dominant form lease is fixed kind.

Type 2: Well / Tube Well Irrigated Village: There is only one such village located in the dry parts of West Godavari District. Tobacco is the principle crop here. The proportion of landless households is quite large. In this village leasing of land is not a dominant feature, but the dominant form of land lease is fixed cash. There is another village of this type, which is situated in Srikakulam District, adjacent to the coast. This village is irrigated by tube wells. Here too the proportion of landless labor households is quite large, and lease is not a dominant feature ─ a big landlord has taken land from the marginal and small farmers. The dominant lease form is fixed cash.

Type 3: Tank Irrigated Village: One such village is in Srikakulam District. It is traditionally a tank irrigated village and paddy is the dominant crop grown. The extent of leased-in land seems to be high, and sharecropping is the dominant form of lease in the market.

Type 4: Combination Sources of Irrigation (Tanks, Wells and Canals): Three villages come in this category. One is from Mahabubnagar District, which has an assured water supply from Krishna River for cultivation. This village is predominantly a paddy growing village. Two villages, which are in Karimnagar District cultivate a variety of crops such as paddy, jowar, maize and turmeric. The proportion of landless labor households and the extent of leased-in land is quite low in this village. Sharecropping is the dominant form of lease, except in Arepalli, where fixed kind is the dominant form of lease.

Type 5: *Drought-Affected Village*: This type of village is in Mahabubnagar District. This village grows a variety of dry and rainfed crops. There are very few landless labor households, and leasing is not a dominant feature in this village.

5.6. Conclusions

It is observed that in canal irrigated villages such as Mentipudi and Kothapalli non-residents lease-out most of the lands; and in non-irrigated villages such as Arepalli, Seethampet, Chinnapur, Nagaram and Jonanki, land was leased-out by resident households. It is also observed that most of the land was leased-out by non-cultivating households in canal irrigated villages. Across the castes, most of the leasing-out of lands is done by the forward and backward castes, while a few poor and middle peasant households lease-out land in private irrigated and dry irrigated villages such as Arepalli, Seethampet, Chinnapur and

Tatiparthy. We also have seen that a majority of the leasing-in land agents are landless and poor peasant households in Mentipudi and Kothapalli villages. In Seethampet, the rich peasant households are seen to be leasing-in land, while in backward villages such as Arepalli, Chinnapur, Nagaram and Tatiparthy, the poor and middle peasants are leasing-in land. In B. Koduru one big landowner has taken leased-in land from marginal farmers (all are S.C Caste) and poor peasants have leased-in land in Jonanki.

All tenants including pure tenants have preferred fixed kind of lease in Mentipudi and Kothaplli. In Seethampet, fixed cash is the dominant form of lease preferred by all classes of tenants even in Tatiparthy (which is a drought –affected village). Sharecropping was observed to be the dominant form of lease preferred by poor peasants (Mala and Madiga) in dry villages like Jonanki, Arepalli and Chinnapur. All categories of tenants were preferred sharecropping in Jonanki village which is irrigated by public tank. Fixed cash is observed to be the dominat form of lease in B.Koduru where seemed to be existing reversed tenancy. The nine different agro-climatic study villages are different from one another in terms of extent of leased land and the forms of lease. These study villages are classified as groups based on their major sources of irrigation. We have divided the study villages into five types, i.e., canal irrigated villages, villages irrigated through wells or tube wells, villages irrigated through tanks villages irrigated through a combination of sources such as tube wells, tanks, and canals; and dry villages which depend on rainfall. Next chapter gives information on factors influencing extent of leased-out/in land in different agro-climatic study villages.

CHAPTER 6

ANALYSIS OF FACTORS INFLUENCING EXTENT OF LEASED-IN/OUT LAND IN THE STUDY VILLAGES

6.0. Introduction

The previous chapter analyzed the agents involved in the land lease market as well as the terms of lease, for both leasing-in and leasing-out households, and in terms of their class and caste classification. The researcher found that the nine study villages, which represent different agro-climatic regions in Andhra Pradesh, can be grouped into five types. The first type of villages includes public irrigated villages, which have large extent of land under tenancy. While the absentee land owners are the cause for such high extent of leased land, the landless laborers (pure tenants) have also entered into the land lease market here: The davits have leased-in land, which was not considerably found in unirrigated areas. Moreover, non-dalits are dominant in both leasing-in land as well as leasing-out land. The second type of villages have private irrigation (tube well) as a major source for cultivation. Here, we have observed an active intervention by industry (ITC). Fixed cash was the dominant form of lease in these villages, and the land lease transactions occurred among poor peasants. In the third type of villages, the landed households are involved in land lease exchanges and different terms of lease exist in the villages, under the traditional tenancy system, which is practiced for resource adjustment or due to imperfect markets for resources. In these villages, most of the households participating in land lease transactions are those of poor peasants. In the fourth type, a big landlord has leased-in land from marginal farmers for fixed cash. The leased-out agents belonged to the Mala caste. And in the fifth category, which is drought-prone and rainfed, had very less amount of land under tenancy, and mostly, the middle peasants have participated in land lease exchanges. Furthermore, the nature of cropping pattern also looks to be different among the different

villages, and, given the different structures of the villages, the extent of land and forms of land lease are also different in the study villages.

The present chapter attempts to analyse the factors influencing the function of land lease market in terms of extent and forms in different agro-climatic study villages. If we observe historically, in the *Zamindari* system, all cultivable lands were under the tenancy system. The tenants (farmers) would pay rent to the local *Zamindar*, who was the intermediary between the government and the cultivating peasants. The Andhra provincial peasant association, formed in 1931, aimed to work towards the final elimination of the *Zamindari* system and all other intermediaries between the peasants and the government through legislative action. The principal feature of the statutory *Zamindari* Abolition Act in the Madras Assembly in 1947 was that the *Zamindars* were deprived from the right to collect rents from the peasants. The power of collecting rent was vested with the government and occupancy peasants were granted permanent proprietary rights to the land they cultivated, as under *ryotwari* settlement. In the *ryotwari* system, all tenants have got permanent rights on the lands which they cultivated under tenancy. In this phase, the extent of tenancy declined, but the traditional non-cultivating castes like the Brahmins have leased-out lands. Some large farmers leased-out their small piece of land to the laborers for adjustment of resources like labor, bullock power and agricultural instruments in the peak season. However, bullocks and agricultural instruments were not tradable. In this period, non-tradable resources and imperfect markets, which are the main factors influencing the land lease market, existed in the village economy. The existence of land lease in this neo-classical world may be explained purely in terms of historical factors such as market imperfection for inputs or unequal distribution of household resources. Resource adjustment was the principal reason for leasing of land (Jodha, 1981b).

The most appealing view of tenancy is that it substitutes for the absence or imperfections of a market for some factor inputs besides land, labor, bullock power, and agricultural instruments (Vijay and Sreenivasulu, 2005). Some studies have pointed out that technical know-how (Joseph Reid, 1976), managerial ability (Clive Bell- Pinhas Zusman, 1979), bullocks (Christopher Bliss and Nicholas Stern, 1982), and family labor (Pant, 1983) are

examples of factors for which markets are highly imperfect. During the green revolution the extent of leased-in land declined due to the introduction of new technology (HYV seeds, fertilizers, pesticides, etc.) in agriculture (Chandra, 1975). Land owners came forward for self cultivation in order to enhance productivity by new technology (scale advantage). According to Bhalla (1983) the leasing-out of land by marginal owners was high because the holdings became non-viable in the context of new technology.

The present chapter also attempts analyse factors leading to leasing-in of land by the household resources such as owned land, able workers, draught animals, and agricultural instruments like ploughs, bullock carts, pump sets, tractors, and sprays, in addition to looking into village characteristics such as nature of irrigation, cropping pattern, average output and rent value per acre, the proportion of agricultural labor and non-cultivating households' impact on leasing-in land, and forms of lease.

We formulate the hypothesis for this chapter: factors like household resources, nature of irrigation, average value per acre, rent value per acre, and structure of the economy would be associated with the extent of land leased-in/out, as well as the choice of the household to prefer a lease form. The rest of the chapter is organized in the following five sections: Section II presents the objectives and methodology of the chapter. Section III provides the evidence of the leased-in/out land factors, a descriptive analysis on which already exists in literature. Section IV and V analyze the factors influencing the leasing-in/out of land and analyze the regression results (probit analysis and OLS regression) across the villages. Section VI concludes the chapter.

6.0.1. Objectives and Methodology

- To analyse whether household resources influence the extent of land leased-in/out land in different agro-climatic study villages.
- To examine if the agrarian structure in the village influences the extent of land leased-in/out land in different agro-climatic study villages.
- To study whether the nature of irrigation and cropping pattern have any association with the extent of land leased-in/out land and forms of lease.

We have studied field data in nine different agro-climatic villages in Andhra Pradesh. In this chapter we analyse the different factors that influence the decision to lease-in/out land and the forms of lease. The factors include household resources, nature of irrigation, average value per acre, and rent value per acre. Both household as well as a village have been considered as a unit for the analysis. The chapter presents data information on the averages or proportions of distribution among different kind of cultivators across the villages. For the sake of analysis we used two statistical tests: the 'Logistic Model' for analysis of the choice decision of the households to lease and the 'OLS Regression Analysis' to measure the extent to which the factors can influence the extent of leased-in/out land.

6.1. Leased-In/Out Land Factors: Descriptive Analysis

In the present section, we would like to discuss several important variables which determine the extent of leased-in/out land. Empirical literature shows that different studies have seen different reasons as the determinants of tenancy, while Bardhan (1976) and Bliss and Stern (1982) reported indivisible and non-tradable inputs and nature of crops grown as important determinants of the extent of tenancy. Some studies have found new agricultural technology as an important factor that influences different aspects of tenancy relations (Murty, 1986; Rao, 1971). This study looks into the determinants such as irrigation, output per acre, rent per acre, and agrarian structure (proportion of non-cultivating households and proportion of landless laborers entering into the land lease market) that may influence the tenancy in the village.

6.1.1 Factors Influencing the Extent of Leased-In Land: Descriptive Analysis

The Average Output Value per Acre

The average output value per acre is one of the determining variables of the extent of leased-in land. If the yield per acre is low, then there is a possibility of decline in the extent of lease (Narayana and Nair, 1994). If there is a certainty in yield, it is possible to generate land lease market. In certainty, the landless laborers prefer tenancy to get employment as well as food security when there is less production risk involved. The production risks become more important to preferred tenancy (Subramanyam, 1983). The present study looks into the

relationship between the average output value per acre and the extent of leased-in land, and makes the following observations:

*A tenant does not prefer to take land for lease when he cannot face output risk. The output variability may depend on the nature of irrigation.

* If irrigation is certain (there is provision of public irrigation), then there would be high output value per acre, which leads to increase in the extent of land under lease.

* In case there is no irrigation, or there is dependence on rainfall, there would be low average output value per acre, and there is a possibility of decline in the extent of lease.

* In drought areas or non-irrigated areas there is high risk involved in the crop output. Here the tenants may not prefer tenancy, or it may be less.

* Tenancy is high in a developed area where the risk involved in yield is minimum (Verma and Mishra, 1994).

* One of the studies by Rai, Singh and Goyal, (2000) found that tenancy is relatively high where in crop productivity is high.

The present study attempts to examine the relation between the average output value per acre and extent of leased-in land. Appendix IV it shows huge differences in the average output value per acre across the study villages as they have different types of irrigation. The value of output per acre of leased-in land households in Mentipudi and Kothapalli was highest (Rs.28251.43 and Rs.21916.65), and hence, the extent of lease was also high compared to other study villages. Seethampet Village, which predominantly cultivates tobacco, witnessed higher output value per acre. Here the extent of lease was minimal due to the high risk involved in output. But in the case of Tatiparthy, the average value of output from the leased-in land households was only Rs.2568.24. The village, where the extent of lease was very less compared to others study villages, witnessed the lowest value of output from the leased-in land households; whereas in other study villages, the value of output produced by leased-in households was: Arepalli− Rs.7661.30, Chinnapur − Rs.6023.76, Nagaram − Rs.10879.12, Jonanki − Rs.8457.40, and B.Koduru − Rs.5734.95. Thus, the table results show that the average value per acre has association with the extent of leased-in land.

The Average Rent Value per Acre

This is another important variable that influences the extent of leased-in land. The economic theory would explain the inverse relationship between rent and the extent of land (Ray, 1998), but in reality, where there is high average rent value per acre, there is high extent of land under tenancy.

Narayana and Nair (1994) concluded that irrigation uncertainty plays an important role in determining the rental rates and incidence of tenancy when there is irrigation uncertainty; and if the incidence of tenancy is low even if the average size is small, rents tend to increase/decrease with yield. When the rents go up and stabilize at a certain level of assured irrigation, the rent is positively related to yield variability. In drought areas or non-irrigated areas, there is high risk involved in the crop output. Here the tenants would prefer sharecropping arrangement because the risk is distributed equally. Fixed tenancy is preferred by tenants in a developed area where the risk involved in yield is minimum (Verma and Mishra, 1994).

Another study found that tenancy is relatively high where crop productivity is high (Rai, Singh and Goyal, 2000). Yutaka Arimoto's (2005) empirical observation suggests that the tenancy contracts are likely to be affected by variability of yield, supporting the risk-sharing implication of share contracts; the tenant would prefer to share contract when the tenant is not too risk averse and/or the yield is not too unstable. Fixed rent tenancy dominates whenever the tenant is risk averse and the yield variability is low. The descriptive analysis in Appendix 1 gives the same information on the field survey evidences — the value of rent per acre of leased-in land was found to be highest in the two canal-irrigated villages of Kothapalli (Rs.7622.87) and Mentipudi (Rs.7095.08) in West Godavari District. Seethampet Village witnessed the next higher rent value per acre in the leased-in land households compared to the other leased-in land households in different study villages. The remaining study villages are paying medium value of rent: Rs.3392.15 in Arepalli, Rs.3944.80 in Chinnapur, Rs.3372.80 in Nagaram, Rs.3952.39 in Jonanki, and Rs.2049.19 in Tatiparthy. However, in B.Koduru Village where a big farmer has leased-in land from marginal farmers, the rent value was very low (Rs.1767.80 per acre and per year). This is the lowest

rent paid by the tenant compared to other study villages. So the average value of rent per acre is one of the important variables that explain the extent of leased-in land.

The Proportion of Landless Agricultural Laborers

The agrarian structure in India has been changing slowly — owner cultivators are reducing and non-cultivators are increasing across the states (Vijay, 2012). On the other hand, some studies have reported a declining trend in self-employment and increasing trend in casual wage labor in Indian agriculture (Subba Rao, 1987; Thorat, 1993; Hirway, 1995). It indicates that while part of the increase of agricultural wage laborers is necessary to increase employment in the labor market due to decline of owner cultivators, the demand for wage laborers has declined. This implies that the rural labor market cannot afford to provide employment for laborers in the village. An agricultural labor household has another option to get employment from the land market; but the labor supply households prefer the lease form, which means that the labor market has failed to provide employment, and they should get employment through access of land lease market as a tenant (Parthasarathy, 1991). For example, if the landless labor and small farmer do not get sufficient employment from the labor market, the other alternative in the village is to enter into the land lease market for survival. This occurs because of the change in agrarian structure, which means that cultivators have turned into absentee land owners. In this scenario, a high proportion of agricultural labor would become pure tenants. If the labor market is uncertain, these households find other alternatives to get employment: one of the options is to enter into the tenancy system in order to ensure more effective utilization of their surplus labor and resources; while another option is to migrate-out from the village.

On the demand side, the labor demanding households such as the cultivators have two options: one is own cultivation with/without labor, while the other is to lease-out the land. If the households choose to lease-out land because they have shifted to non-agricultural activities, or cannot cultivate their land, there may be a decline in the demand for wage labor. Where the absentee land owners are more, there is high possibility of decline in the demand for wage labor.

There could be two main sources for demand of leased-in land: mixed tenants and landless labor households (pure tenants). Mixed tenants do not have sufficient land, and want to expand the land operated by leasing-in land from other land owners who are not interested in cultivating land. The second source of demand for leased-in land is by pure tenants (the landless), who want to ensure food security under conditions of high employment uncertainty. It is not an important matter for the mixed tenants to enter into the lease market, but it does matter for the pure tenants.

The present study will look into the proportion of landless labor households and the conditions under which they enter into the land lease market as tenants. According to Bardhan (1979), where the crops are more labor-intensive, the extent of unemployment or the landless families is larger, there is imperfect market for inputs, or the landlord is risk-neutral and the tenant risk-averse, there is a possibility that the landless laborers enter into the land lease market as tenants. According to Kumar and Chamola (2000) the proportion of landless and marginal farmers, family size, and availability of family labor plays an important role in leasing-in land. Whereas compared to non-irrigated villages, pure tenants are not significantly involved in the land lease market (Mohapatra, 1994; Singh, 2001). Appendix II shows that pure tenants are more in canal irrigated villages such as Mentipudi and Kothapalli compared to the other study villages.

The Proportion of Non-Cultivating Peasant Households (NCPH)

The present study focuses on some aspects on the nature of land owners in agriculture, particularly in different agro-climatic regions, and how they impact the extent of leasing-in land and terms of lease. It might be important to study the behavior of landowners to understand the functioning of the land lease market.

The land owners are of two types: resident land owners and non-resident land owners (absentee land owners). If resident land owners leased-out land, then there is a possibility that they would involve in tenant cultivation. And if non-resident land owners (absentee land owners) leased-out land, they might not be involved in tenant cultivation directly or indirectly. In this context, there may not be much investment on land development,

incentives, and other agricultural progressive activities (Bardhan, 1967; Bhaduri, 1973). On the other hand, if non-cultivators are getting assured rental income, and they invest in the non-agricultural sector, it means that they are getting income from two sides — from agriculture (without participating in any agricultural activity) as well as non-agriculture (investing in film industry, etc.).

We have observed the non-cultivators' behavior towards economic gains (lucrative), particularly, the cultivators who became non-cultivators recently. We need to understand why cultivators would shift to the non-farm sector, particularly in canal irrigated villages, raising the extent of leased-out land. An important paper by Foster and Rosenzweing (2003a) provides a theoretical exposition of how the non-farm economy influences the farm economy, building on the great heterogeneity of non-farm activities in rural areas. It is a result of profit maximizing behavior of the farmers. While studying the dynamics of the extent of leased-in land in a private irrigated economy, it is seen that the landowners may not shift to non-agriculture and may not depend on rental income; further, the extent of leased land is also very less. However, the peasant farmers in a backward economy practicing traditional subsistence agriculture may not respond to the cultivators' shift towards the non-farm sector. This is because they do not have much surplus from the agriculture sector to invest in the non-farm sector. The data shows (see Appendix III, Table 2) that absentee land owners are high in canal irrigated villages such as Mentipudi and Kothapalli. However, the number of non-cultivating households is low in non-irrigated study villages like Tatiparthy, Nagaram and B.Koduru.

Irrigation

The type of irrigation can play an important role in the rural economy. The change in the choice of demand and supply of leased-in extent that was expressed by Parthasarathy (1967) was that the variations in tenancy are generally sought to be explained by the proportion of irrigated area. Some opinion was also expressed by Rao (1965), and Tara Shukla (1965). According to them, this appears plausible in view of the fact that areas with very high degree of tenancy are generally found to be those with high proportion of irrigation. More particularly, the research on irrigation has identified predominantly two major effects it has

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. The trend of decrease in variability due to sources of irrigation depends on whether the provision of irrigation is from a private source or a public source. Basically, the study looks into the nature of irrigation, and how it influences the demand and supply choices of leasing households. Parthasarathy (1967) pointed out that there was a positive relation between the extent of tenancy and the proportion of irrigated area. He has expressed that the high irrigated districts in Godavari have a high proportion of tenancy areas whereas Nizamabad recorded the lowest proportion of tenant areas because of the low proportion of irrigated area. The same opinion was expressed by Bardhan (1979) — his inter-regional cross-sectional study seems to suggest that the irrigationally better-off regions have a larger proportion of area under tenancy.

In case of public irrigation, all farmers will get water for irrigation, and hence the variability in yield would be low. If irrigation is through public provision (canals, tanks), then it can be expected to benefit all classes of farmers in the command area who have access to irrigation, without any substantial costs for the access. However, as land distribution is unequal, the large farmers have a scale advantage.

Thus when there is provision of a public source of irrigation, the cultivators' diversification to non-agricultural sector is not common — they do not leave their permanent rights on their lands for getting an assured rent. So the landless and small farmers occupy their cultivable lands in the form of lease (informal and insecure). Consequently, the study aims to see how the nature of irrigation (private or public) influences the extent of leased-in land and the terms of lease.

The extent of lease is very high where public irrigation sources dominate. In canal irrigated villages the labor households have declining demand from the wage labor market due to the decline in the number of big owner cultivators. Hence, the laborers are facing employment uncertainty from the labor market; and so they enter into the lease market. This implies that the agricultural labor does not participate regularly in the rural labor market because they are not getting regular employment, and the large landowners are not hiring labor from the

wage market because they prefer to lease-out their land for reducing risk and uncertainty. If both participate substantially in the labor market, this is a puzzle for the economy (indeed, as both buyers and sellers of labor). Canal irrigation, increases the effective supply of leased land and hence the demand for leased-in land is high. Where irrigation is certain, the yield is also certain; this reduces variability in the yield and the tenants' demand function for leased-in land may shift upwards (Rao, 1975).

In case of private provision of irrigation, the small farmers are at a disadvantage because of their low investment capacity as well as non-viability of their holdings. Moreover, the modes of irrigation are also varied in terms of patterns of ownership of land and control. The irrigation may be privately owned, or may be centralized; but private irrigation leads to the discriminating impact on different socio-economic classes of users who do not enjoy equal access to the irrigation sources, and are not able to own private means of irrigation. In such conditions, the land lease exchanges may take place among equal classes of farmers, relatives, and same castes. But the landless and small peasants are not able enter into the land lease market, which results in lesser extent of lease in villages that have private irrigation.

Appendix II, table 2 shows that in Mentipudi and Kothapalli, that are canal irrigated, the extent of lease is high, whereas in Arepalli, the proportion of canal irrigation is small (0.32) and so is the proportion of leased-in land households. In the case of Chinnapur the proportion of canal irrigation is higher compared to Arepalli (0.42) and similar is the proportion of leased-in land households. In the study villages such as Seethampet, Tatiparthy, Nagaram, Jonanki and B.Koduru, there is no provision for canal irrigation. We observed that in all study villages where the proportion of canal irrigation is high (0.51), there is a high proportion of leased-in land households, compared to those villages which have lesser proportion of irrigation by canal.

Tank irrigation is also one of the factors influencing the land lease market. Jonanki Village has more proportion of cultivable land under tank irrigation compared to other study villages. In this village the proportion of tank irrigation is 0.83 among the leased-in land

households. Further, in Arepalli, tank irrigation proportion is 0.36 among the leased-in land households, while in the remaining study villages; there is lesser proportion (0.10) of land cultivated by tank irrigation. The proportion of well / tube well irrigation distributed among the leased-in land households is 0.16. In Seethampet, the proportion of well irrigation is high among the study villages. In the other villages leased-in households have 0.76 proportion of well irrigation, while B.Koduru and Nagaram are irrigated predominantly by well and tube well. So where the proportion of well irrigation is high there appears to be lesser extent of land under tenancy due to the high cost involved.

The Percentage of Cultivated Land under Paddy Crop

The tenants opt to lease-in land for their food security — paddy crop appeared to be higher on pure tenant farms than on owner-operated farms (Bhuriyan and Nandal, 1987). Ensuring food security ought to be an issue of great importance in a country like India where more than one-fourth of the population is estimated to be absolutely poor (Dev, 2003). Moreover, as the land is distributed unequally, agricultural labor would not be able get full employment from the labor market. Hence, they look for land to cultivate food crops — employment uncertainty is one of the reasons for leasing-in land, and hence, food crops are generally cultivated in the leased-in lands. This is seen as a subsistence strategy of the landless and marginal farmers (Singh, 2001).

Thus, where there is more cultivation of food crops, there is a high extent of land under lease. The segment of landless laborers who lease-in land ensure survival through food security or employment. However, if the big farmers lease-in land, they may prefer to cultivate non-food crops or commercial crops.

Agricultural Instruments (endowment of agricultural instruments)

Agricultural instruments play a significant role in the land lease market. We have identified five main instruments that are used in agricultural operations — ploughs, bullock carts, tractors, pump sets and sprays. All these instruments are treated equally and we have defined the number of instruments owned as the number of instruments held by the

households. Most of the farmers use a tractor instead of a plough for their ploughing operation. This implies that there is a market for tractors.

In canal irrigated villages in West Godavari District, more than 50 per cent of the land is under tenancy (Andhra Pradesh, Land Committee Report, 2006). In the rural areas, non-existence of a market for agricultural instruments and the hiring of agricultural instruments services are limited. Moreover, the employer gives preference to the laborers who have agricultural instruments and bullocks. Hence, the labor who own agricultural instruments can enter into the land lease market as a tenant (Bliss and Stern, 1982; Vijay and Sreenivasulu, 2005).

Bardhan (1976) expected that the pattern and extent of tenancy would be influenced by household resources which are not tradable in the markets. This becomes particularly relevant when the market for endowment of households resources does not function at all or function imperfectly (Bliss and Stern, 1982; Nabi, 1985). However, the poorer households are often unable to obtain these agricultural instruments at the price paid by the better off households. Some of these features have been incorporated in a model by Bardhan (1976) in an attempt to work out their implications for tenancy. A commonly listed instance of non-marketability in the context of tenancy in Indian agriculture is the non-existence of a market for agricultural instruments.

This feature and its possible implications for tenancy were first observed by Bell (1996). He argued that the non-existence of a market for hiring agricultural instruments provided a possible motivation for land leasing. Households having surplus agricultural instruments in relation to the landholding would prefer leasing-in land since the hire services for agricultural instruments cannot be traded in the market. This is one of the reasons for leasing-out land by land owners.

Tractorization

Agricultural mechanization (tractorization) is one of the factors having a negative impact on the rural labor market — farmers are using tractors instead of human labor in agricultural

production. This is one of the reasons that labor supply households enter into the land lease market — for employment or survival. Earlier studies have emphasized that 'resource adjustment' is one of the reasons for land leasing behavior in the market, as imperfect market exists for household resources like plough, bullocks, etc. With tractorization, the importance of ploughs and bullocks in combination with human labor became negligible. Most of the tenants have been using tractors particularly in ploughing operations. This is one of the incentives for the landless labor to enter into land lease market without plough and bullocks in canal irrigated villages.

The empirical literature on the effects of tractors on labor inputs reveals sharply divergent views. Kalirajan and Shand (1982) show that labor saving effects of mechanization are largely offset by labor increasing effects on the process of agricultural production. However, Binswanger (1978), Bartsch (1934), and McInerney and Donaldson (1975) have found evidence in favor of labor displacement due to tractor usage in agricultural production. All these studies have explained the impact of tractor use on human labor and animal power (bullocks).

The present study examines how tractorization can influence leasing behavior in the village economy. The green revolution programme, introduced between 1967-68 and 1970-71 in India, aimed at increasing food grain output per acre. In this process, new technology, fertilizers, pesticides, and HYV seeds were introduced in order to increase productivity. However, the benefits of green revolution have been different among owners, tenants, and laborers: self-cultivators had a greater advantage over the others, as they resumed using land in order to benefit through adapting the new technology. Consequently, tenants were thrown out of land operation. Thus, the extent of land leased-in declined with the introduction of new technology — while the land owners benefited, the tenants did not (Sen, 1974). However, a study by Singh (2001) has pointed out that the extent of leased-in land is positively associated with modern technology.

While plough is a traditional input used for production and tractor is a modern input used by the households, the data presented in Appendix IV, quite surprisingly shows that the owners of tractors were nil in the leased-in households, though they are using tractors for ploughing

in all the study villages. Only in Chinnapur, there were 0.04 leased-in households that owned a tractor. On the contrary, the proportion of the households owning a tractor among the leased-out households was also nil in all the villages except in Arepalli. In this village the proportion of leased-in households owning tractor was 0.36.The proportion of land-owning households that also owned a plough was highest in Tatiparthy, followed by Jonanki (0.67 and 0.63 respectively), while the usage of the plough was higher in Chinnapur and Arepalli (0.58 and 0.50 respectively). In Nagaram the proportion of land-owning households that owned the plough (traditional input) was 0.28, while the proportion of households using a tractor was higher (0.04) in Kothapalli, followed by 0.03 in Arepalli, Chinnapur, Nagaram and Jonanki.

The above analysis shows that the proportion of households owning a tractor was negligible among all categories of leased-in/out households. The proportion of households owning the plough was higher in Jonanki, Chinnapur and Nagaram compared to other study villages. Pump set is considered as a material that helps in irrigation. This is mainly a modern input in agriculture. The proportion of leased-in households that have pump sets was found to be higher in Chinnapur and Nagaram (0.21 and 0.20 respectively), while in Jonanki the owners of pump sets among the leased-in land households were observed to be more compared to other villages. Appendix II shows that the ownership of pump sets per household was higher among the leased-out land households compared to all owner operating households. The number of owners of sprays among the leased-in households was almost negligible in all study villages except in Nagaram (0.10), but among the leased-out land households, the use of the spray was highest in Arepalli (0.21), while in Chinnapur and B.Koduru it was very less (0.03 and 0.04 respectively). Among the land owners, the proportion of households that owned sprays was 0.17 in Jonanki Village, which is the highest among all the villages. The proportion of ploughs owned by leased-in households was highest (0.79) in Jonanki Village, whereas in Arepalli and Chinnapur, the number of leased-in households owning ploughs was higher compared to the other villages. However, the proportion of leased-in households that owned ploughs was lowest in Nagaram (0.20), while the proportion of leased-in households that owned bullock carts was highest (0.60) in Jonanki, followed by Chinnapur and Nagaram (0.50); this proportion was found to be lowest in Arepalli.

Further, we also found that there was a very small number of leased-in households that owned a bullock cart in Kothapalli, Mentipudi, Seethampet and Tatiparthy villages — their proportion was negligible in the all the villages except in Chinnapur, Nagaram and Jonanki. The above analysis shows that among all the households in the study villages, those from Jonanki owned the highest proportion of bullock carts in case of both leased-in households as well as leased-out households.

Proportion of Animal Power

Animal power, which we define as the number of cows and bullocks owned by the households, is an important variable that has influenced the extent of leased-in land historically. In the study villages, cows as well as bullocks are used in agricultural operations. The agricultural laborers who have animal power have a chance to enter the land lease market, either because there was a missing market for the use of bullock services, or because these animals are not tradable in the market (Sreenivasulu, 2002). The absence of market for bullock power services is an important determinant of lease: If the market for services to bullock power is absent, then in order to organize production, a transfer of land to the agent who owns bullock power has to take place; and if land market is incomplete, then households with excess supply of bullock power cannot optimally use the resource. Hence, one process of adjustment is a lease contract. Households with excess supply of bullock power lease-in land from households having demand for bullock power. This feature, and its possible implication for tenancy, was first observed by Bell (1976) in his study in Purnea District, Bihar. Bell argued that the non-existence of a market for bullock hire services provided a possible motivation for land leasing (Bell, 1976; Bliss and Stern, 1982; Vijay and Sreenivasulu, 2005). The resident village investigators also report that, on many occasions, the owner of the bullocks refused to hire out their services. The hiring of draught animal services is limited in all villages, as moral hazard arguments require that bullocks should be accompanied by their owner as a driver. So if bullock power is absent then ownership of bullock power might influence the land lease market.

Appendix IV shows that the number of draught animals owned per the leased-in household is 3.25 in B.Koduru — this village witnessed the highest number of animals owned per household. In Kothapalli and Nagaram this proportion was found to be lowest (0.67 and 0.75 respectively). In case of leased-out households, the number of draught animals owned per household was highest in Seethampet (1.70), while B.Koduru also witnessed a high number (0.84). The number of draught animals owned in Mentipudi, Kothapalli and Seethampet was highest among all the villages (1.46, 1.45 and 1.41 respectively), while Arepalli witnessed the lowest number of draught animals owned per household among the owner operating households.

Proportion of Able Workers

Able persons are defined as people in households who are in the age group (not studing) between 14 and 60 years. We have clubbed male as well as female in the same group, i.e., we have considered them to be equal in this analysis. The number of adult male and female members of a household considerably influences the extent of land leased-in/out. If a family has a large number of able workers, but faces wage and employment uncertainty in the spot market, they look for a stable income and employment, and hence, lease-in land because there is no wage and employment uncertainty involved. It is important to note that social customs prevent some members from entering the labor market — for example, children below a certain age cannot work as wage laborers, and sometimes, women are also not permitted to work. However, such members may be usefully employed for cultivating the leased-in land. So able workers, including women as well as children play a significant role while leasing-in land. Pant's (1982) hypothesis is that the gender specificity of agricultural tasks and the social customs in the village concerning hired female work impose a constraint on marketability of family female labor. The number of children in the household decreases significantly as the amount of land leased-out increases and it increases significantly as the amount of land leased-in also increases; thus, the market for family labor is imperfect. Moreover, lower monitoring costs are involved in the use of family labor due to a better incentive structure compared to the wage payment system used for hired labor of adult males or children to lease-in more land and self cultivate. Here, one is concentrating especially on able workers and dependents who influence the lease market.

Similarly, caste or other social connections may act as barriers to entry into the labor force. Higher caste households would be reluctant to allow their family members to work as hired laborers (Pant, 1982), especially, if the hirer is from a lower caste household. While such members cannot work as wage laborers, they can work on owned/leased land. Thus, women and children who cannot offer themselves for wage employment may be usefully employed on self-cultivated land. They can assist in operations not involving much physical effort, for example, in the operations such as weeding, planting, or tending farm animals. Similarly, members of hired laborers can be employed for cultivation of owned or leased land. This suggests another motivation for tenancy if for some members in a household there are no employment opportunities except for working on the lands that the household may lease-in to ensure fuller utilization of its family labor.

The average number of workers per household is presented in the Appendix IV. It shows that the able workers per households engaged in leased-in land households are different in each village. In case of Mentipudi, Kothapalli, Seethampet Arepalli, Tatiparthy, Jonanki and B.Koduru, the average number of able workers per leased-in household, is more than three persons. It was observed that among all the villages, B.Koduru and Seethampet had the highest number of able workers per leased-in household, while in case of Chinnapur and Nagaram this number was the lowest; in Seethampet Village, the workers engaged in leased-in land households was observed to be the highest.

Proportion of Owned Land

Land is an important family resource for livelihood, and owned land is an important issue in economic literature. Land could be seen as an asset, as well as a production factor. Cultivable land is two types: wet and dry. If a household does not have sufficient land, they lease-in land for cultivation; but if they have sufficient owned land, there is less chance to prefer tenancy. The importance of land rental market is whether transaction costs directly associated with land leasing affect the extent to which the households are successful in adjusting their land resource. The moral hazard in land use by tenants and other agency costs may result in imperfections in the land rental market (Binswanger and Rosenweig,

1986; Bardhan, 1989). In this situation the land owner prefers to give the land to tenants because of the incomplete resource endowments. The employer would prefer to lease-out land to a household that is deficit of land, but has surplus labor, bullocks and agricultural instruments. But if land is concentrated with only a few households then there is demand for agricultural laborers; if land is concentrated with non-cultivators, then it is possible that there will be more land under tenancy; if the middle peasants dominate the village economy, then there is less demand for wage labor as well as leased-in land; if there is equal distribution of land there is lesser possibility of the existence of a tenancy system; and if there is inequality of land distribution, then the landless laborers can try to get land either through buying or leasing-in.

According to Joshi (1947), self-cultivation of land could be promoted either by redistributing landlord's land among small peasants and laborers or by inducing the landlords to undertake self-cultivation through hired labor instead of leasing-out their land to tenants. India did not follow either of the two courses: the power elites favored the middle course of reconciling the interest of the landlords with those of tenants. This resulted in a policy of curtailing (not eliminating) landlordism and of conversion of non-cultivating landlords to owners.

The rural non-farm sector is widely looked upon as a source of momentum for rural growth and poverty reduction. Employment patterns in the non-farm sector have been widely scrutinized for evidence of economic dynamism in rural areas. Visaria and Basant (1993) carefully examine the NSS and census data and document a clear increase in the share of non-agricultural employment. In addition, the evidence appears to point to a more rapid expansion of tertiary sector employment rather than that of secondary sector employment; and the bulk of employment growth is of a casual nature, rather than permanent, in places where there is irrigation uncertainty and a high variability in output (Narayana and Nair, 1994). If irrigation is through public provision (canals, tank), it is expected to benefit all classes of farmers in the command area and to provide access to irrigation without any substantial costs. Though irrigation gives equal access, the land distribution is unequal. In this situation, large farmers have a high scale of advantage. The agrarian structure in public

irrigated areas is changing and the number of owner cultivators is decreasing — they are shifting to non-agriculture activities. Thus the proportion of landless labor and small farmers entering into the land lease market is high. In canal irrigated villages, high yield certainty may be one of the reasons for increasing the extent of leased-in land. The field evidences in Appendix IV show that among all the study villages, the average land owned by leased-in households was highest in B.Koduru (13.29 acres), whereas in Kothapalli this was the lowest (0.44 acres) compared to the other villages; in Arepalli and Tatiparthy, the average land owned by the leased-in households was also high at more than 3 acres. However, in Mentipudi, Kothapalli and Jonanki, this average was less than 1 acre.

6.1.2. Factors Influencing the Extent of Leased-Out Land: Descriptive Analysis

The Average Output Value per Acre

The average output value per acre is one of the determining variables for leased-out land. If the average output value is high and certain, then the land owner may be willing to lease-out land because there will be assured rental income on that land. On the other hand, if the average output value per acre is low and not certain, then there will be a possible decline in the extent of leased-out land due to less rent and demand (Narayana and Nair, 1994). In drought areas or non-irrigated areas, the high-risk involved in the crop output results in very less rent and not much demand for leased-in land as the conditions do not favor the land owner to lease-out land. Hence, tenancy is relatively high wherein productivity is high (Rai, Singh and Goyal, 2000). In this study, we attempt to examine if there is any association with the extent of leased-out land and the average output value per acre. Descriptive Table 1 in Appendix IV shows that the value of output from the owned land was highest in Mentipudi (Rs. 27538.57) and Kothapalli (Rs. 20645.97), while the value of output was lowest (Rs. 2568.24) in Tatiparthy.

The Average Rent Value per Acre

In this analysis, we would like to explain the average rent value per acre, as it is one of the important variables influencing the extent of leased-out land. Where there is a high average rent value per acre, there is high extent of land under tenancy (Bardhan, 1976); hence, the land owner would prefer to lease-out land where there is high rent value (fixed rent) and

yield certainty. On the other hand, if the rent value per acre is very low and uncertain, there is lesser possibility that the land owner would lease-out land (Narayana and Nair, 1994). Moreover, irrigation uncertainty plays an important role in determining the rental rates and incidence of tenancy — when there is irrigation uncertainty, the incidence of tenancy is low and even if the average land size is small, rents tend to move with yield. When the rents go up and stabilize at a certain level of assured irrigation, the rent is positively related to the extent of land leased-out (Subramanyam, 1983). Hence, the rent value is one of the major variables influencing leased-out land.

In this study we consider rent as one of the variables that determines leased-out extent. In case of leased-out land households (Appendix IV) also the value of rent per acre was found to be highest in Kothapalli (Rs. 7591.47) and Mentipudi (Rs. 7444.54). Similarly in Seethampet the rent per acre of leased-out land was higher (Rs.6017.45), while Tatiparthy, Nagaram, Arepalli, Jonanki and Chinnapur have low level of rent value per acre.

The Proportion of Non-Cultivating Households

Non-cultivating households (absentee land owners) are also one of the major influencing factors for leased-out land. These non-cultivating households can be traditional non-cultivators such as the Brahmins, or there may be government employees, dependents, or single women, who might be either residents or non-residents who are not cultivating their land. Moreover, though some households shift from agriculture to non-agriculture activities, they do not want to lose their permanent ownership of the land, and hence prefer to lease-out their land for rental income. Parthasarathy (1967) has pointed out that where the number of non-cultivating households is high there is a high extent of leased-out land. A similar opinion was expressed by Vijay (2012) — where the proportion of non-cultivating households is high, there is a high extent of land under tenancy. In the study, we see the relation between the proportion of non-cultivating households and the extent of leased-out land. Appendix IV gives information about absentee land owners: their number is high in Mentipudi and Kothapalli, which are irrigated by canal; but the rest of the study villages have residential non-cultivators who have leased-out their land.

Irrigation

The nature of irrigation also plays an important role in the demand, supply, and lease extent in the rural economy. In the literature we found some studies that have analyzed that nature of irrigation as one of the important variables that determine leased-out land (Bardhan, 1976; Subramanyam, 2000; Narayana and Nair, 1994). The study aims to examine how the nature of the irrigation system (private or public) influences the extent of leased-out land. The extent of lease is very high in areas where there is a dominant public irrigation source. For example, where the proportion of canal irrigation is high, there is possibility of more land leased-out; in canal irrigated areas, the value of land and rent is also high. This might also be the reason that the land owners lease-out lands for getting assured rental income, and shift to non-agricultural activities.

Hence, irrigation increases the effective supply of leased land and so the demand for leased-in land is high, when the rental income is certain and there is an increase in the area leased-out land by land owners (Rao, 1975).

In the case of private provision of irrigation, the small farmers are at a disadvantage because of their low investment capacity as well as non-viability of their holdings. Moreover, the modes of irrigation are also varied in terms of the nature of ownership of land and control where land is leased-out by marginal and small landholders due to non-viability of their lands (Bhalla, 1983). If we observe the field evidences shown in Appendix IV, the proportion of irrigated leased-out households is highest in Mentipudi, Kothapalli and Arepalli, (value is around 1.00). In Jonanki, the proportion of irrigated land with leased-out households was only 0.38. The proportion of leased-out land under irrigation in Mentipudi and Kothapalli was found to be the highest, whereas in case of Tatiparthy the proportion of the leased-out land under irrigation was only 0.24. This implies that most of the cultivable land depends on rainfall. So where irrigation is high, there is high proportion of cultivable land under tenancy.

Agricultural Instruments

Agricultural instruments play a significant role in the lease market. In the rural areas, non-existence of a market for agricultural instruments and the hiring of their services are limited. Land owners who also own agricultural instruments may not prefer to lease-out land; rather they go for self cultivation. If the markets for instruments are imperfect in the sense that they are not tradable, then land owners would lease-out a bit of their land to laborers those who own agricultural instruments for resource adjustment. Bell (1996) and Bardhan (1976) argued that the non-existence of a market for the hire of agricultural instruments provided a possible motivation for leasing-out land. Conclusively, households with more land in relation to their ownership of agricultural instruments would lease out their surplus land. Bliss and Stern (1981) have developed a model along these lines in their study of tenancy in Palampur Village of UP.

The present study will examine if the extent of leased-out land has any association with agricultural instruments like ploughs, bullock carts, pump sets, and sprays. The descriptive analysis in Appendix IV shows that the number of ploughs owned per leased-out household is highest 1.23 per household in Jonanki whereas in B.Koduru their proportion is only 0.48. Among the leased-out households, the number of ploughs owned per household was highest in Jonanki and lowest in Seethampet where less land has been leased-out. We observed that tractors were owned by leased-out households only in Arepalli; the number of pump sets owned per leased-out household was highest in Jonanki (0.54 in proportion) and Arepalli (0.29 in proportion), while the same was nearly negligible in the rest of the villages; furthermore, none of the leased-out households owned agricultural instruments such as sprays.

Proportion of Animal Power

Animal power is another variable influencing the extent of leased-out land. The absence of market for services to animal power is an important determinant for leasing-out land. One process of resource adjustment is a lease contract — households with excess supply of animal power can lease-in land from households with excess demand for animal power. This feature and its possible implication for tenancy was first observed by Bell (1976) in his

study of Purnea District in Bihar. Bell argued that the non-existence of a market for animal hire services provided a possible motivation for leasing-out land (Bell, 1976; Bliss and Stern, 1982). Appendix IV shows that the number of draught animals owned per leased-out household was high in Seethampet at 1.70; B.Koduru witnessed a greater number of draught animals owned per household (0.84 per household) among the leased-out households, while the number of draught animals owned in Mentipudi, Kothapalli and Chinnapur was the highest among all the villages (1.46, 1.45 and 1.41 respectively); and Arepalli reported the lowest number of draught animals owned per leased-out household.

Proportion of Able Workers

The number of able male and female workers also plays a significant role on the extent of land leased-out. If land owner households have less able workers or shift to non-agricultural activities for enhancing their income, it is possible that they would lease-out land and depend on its rental income. The literature maintains that the number of able female workers plays a significant role on the extent of land leased-out (Pant, 1982). If the households own land, but there are no able persons in the household, they have two options: cultivating the land with the help of laborers (wage or permanent), or leasing-out land and depending on the rental income for survival.

It was observed from the study villages that leased-out households in Mentipudi and Jonanki have the highest number of workers per household. In these villages the number of workers per household was found to be 3.80 and 3.62 respectively (see Appendix IV); the number of able workers per leased-out household was found to be lowest in Nagaram, Arepalli and Chinnapur (2.50, 2.64 and 2.79 respectively); while in the other villages including Kothapalli, Tatiparthy and B.Koduru, a higher average number of workers per leased-out household was reported (3.38, 3.00, and 3.4 respectively). This implies that among the leased-out households, those in irrigated villages, or in villages where non-residents are prevalent, have higher number of able workers; while unirrigated villages have reported less number of able workers in the leased-out households.

Proportion of Owned Land

Land is one of the important family resources for livelihood. If they have sufficient owned land, there is less chance to prefer tenancy. In this situation the landowner prefers to give the land to tenants due to the incomplete resource endowments. The employer would prefer to give land to the labor that has deficit land but a surplus of able workers, bullocks and agricultural instruments.

If land is concentrated with a few households, then there is demand for agricultural laborers. On the other hand, if land is owned by non-cultivators, then there is a possibility of more land under tenancy. However, if middle peasants are dominating in the village economy, then there is less demand for wage labor as well as leased-in land. Hence, size of owned land is one of the variables influencing the leasing-out of land. The big land owners would lease-out a small piece of their land to laborers when the need for labor is in the peak. We can observe from field evidences in Appendix IV that in Jonanki the average owned land is highest (10.18 acres) among the leased-out households; the average land owned per household was lowest (1.21 acres) in B.Koduru, while it was higher (around 7 acres per household) in Arepalli, Tatiparthy and Seethampet. The evidences show that in B.Koduru, the poor peasants have leased-out land, whereas in the rest of the study villages, the big land owners have leased-out land.

6.2. Analysis of Factors Influencing Land Lease-in/out

Bliss and Stern (1982) gave insightful field evidences from Palanpur Village showing that leasing decisions are closely associated with the bullocks, family workers, and land endowments of rural households. They have tested (using regression analysis) this argument successfully with field data. The same opinion was expressed by Nabi (1985) with empirical support from Pakistani data. Similarly, Taslim and Ahmed (1992) have empirically tested by means of regression analysis with data from Bangladesh.

The present study attempts two sets of models: a binary probit analysis for understanding ‘choice behavior’ of the households, and a regression analysis (OLS) for measuring the extent to which the independent variables influence the extent of lease-in/out. In the first set

of models, the cultivator has to make a choice between self cultivation and leasing-out the land. As Bell (1995) points out, "any attempt to integrate the land and labor contracts must come to grip with two salient features of agrarian organization in Asia, namely, cultivating households that make very extensive use of casual labor, and most land owners who are not active in the market for lease". In other words, the owner has a choice to self cultivate the land and in the Indian context this is a sizable section of Indian peasantry. In this formulation, the owner has two options — the first is either to cultivate or to lease-out; and the second is to get into contractual arrangements in vogue. Again, there are two methods of working with this formulation: One is a simultaneous choice model wherein the owner has choice between owner cultivation, fixed rent contract and shared tenancy (Hallagan, 1978; Eswaran and Kotwal, 1985; Allen and Lueck, 1992); and the second is called the sequential choice model (Chaudhuri and Maitra, 2002). "In the sequential choice model the choice of a contract[6] is a two step problem: the land owner first decides whether to cultivate the plot on his own or lease-out to be cultivated by a tenant; once he decides to lease out the plot, he has to decide whether to use a fixed-rent or a share cropping contract" (Chaudhuri and Maitra (2002), p.445-6). The explanatory variables are the household's characteristics and the quality of the land. But these models did not attempt to explain the variables that influence the supply of land and demand of land in the land lease market.

The present study attempts to analyse the choice behavior of households on both sides of the land lease market in the study villages. On the demand side, there are the landless laborers (pure tenants) and mixed tenants; and on the supply side, there are the land owners. The study attempts to examine the conditions under which the households prefer to enter the

[1] The contractual choice in agrarian economy studied by Cheung (1969), Newbery (1975), Newbery and Stiglitz (1979), Bliss and Stern (1982), Alston, Datta and Nugent (1984), Kotwal (1981a, 1981b) and Hayami and Kikuchi (1982). These studies have used regression model to understood choice behavior of the households.

land lease market. Thus, the model also helps to understand the demand and supply factors in addition to households' choice behavior in rural economy.

6.3. Binary Probit Model

According to Nagler (2002) the probit model constrains the estimated probabilities between 0 and 1 and relaxes the constraint as the effect of the independent variable is constant across different predicted values of the dependent variables. A binary choice model was empirically used between shared tenancy and crop insurance by Rejeses, Escalante and Ashley (2005). However, the present study analyses the relationship between or choice between the households leasing-in/out land in the study villages, based on the primary data collected from different agro-climatic villages in Andhra Pradesh. The villages were classified into five groups according to the nature of irrigation. It was found in the study that there was high cultivated land under tenancy in canal irrigated villages, and the proportion of land under tenancy is low in well irrigated villages, dry villages (semi-arid areas), and in villages where farming is characterized by low productivity. Nearly 50 per cent of the landless households were found to have leased-in land, while the majority of landed households (mixed tenants) have been leasing-in land in well irrigated villages, and more than 60 per cent of the households in canal irrigated villages.

The main aim of the study is to determine the factors influencing the households' decision to lease-in/out. The study used the probit model to analyse the influence of household resources such as own land, labor, draught animals, agricultural instruments, and village characteristics such as nature of irrigation, cropping pattern, and structure of the village on a household's decision to lease-in/out land. The farm households' decisions to lease-in land would depend on the households' resource levels as well as village characteristics.

6.3.1. Characteristics of Households

A total 1736 households were involved in the study across nine different agro-climatic villages in Andhra Pradesh. Out of the 1736 households 275 households are leasing-in land,

114 households are landless; 122 households are leasing-out land; 1526 are self-cultivating households; and the remaining (301 households) are landless agricultural laborers who depend exclusively on labor work. The number of average able workers is more or less the same in leased-in households, self-cultivating households, and leased-out households. However, there was huge inequality of own land distribution among these households: The average land owned was more in leased-out households (4.47 acres per household) and less in leased-in land households (1.8 acre per household). Household resources, which includes the number of ploughs, bullock carts, draught animals, tractors, pump sets, and sprays, owned per household was less in leased-in households compared to self-cultivating households and leased-out households; an exception was the number of draught animals — their number was high in leased-in households (1.15 animals per household).

6.3.2. Village Characteristics

Nine different agro-climatic villages were selected for the study from Andhra Pradesh, including three villages from the south coastal region namely Mentipudi, Kothapalli and Seethampet; two villages from the north coastal region namely Jonanki and B.Koduru; three villages from north Telangana — Chinnapur and Nagaram; and two from south Telangana — Arepalli and Tatiparthy. Among these villages, two represent 100 per cent irrigation through public canal; while two are dominantly well or tube well irrigated; one village was dominantly tank irrigated and one village represented the dry villages. The remaining four villages had a combination of two major sources of irrigation.

The structure of the village can also be determined by the land lease market. If in the village, the number of landless households is more, there may be more possibility to generate lease or wage labor; if the village is dominated by rich peasants, then there is more dependence on wage labor; and if the middle peasants dominate in the village, then there is neither wage labor nor lease (Vijay and Sreenivasulu, 2006). Furthermore, in villages where paddy is cultivated as a major monocrop, such as in Mentipudi and Kothapalli, there is high possibility to generate land lease market; if in the village, cash crops are predominant then there is a high possibility to generate fixed tenancy rather than share cropping — for e.g., in Seethampet, B.Koduru and Tatiparthy cash crops such as tobacco, chillies and castor are

predominantly cultivated. Hence the nature of crops cultivated is also an important factor influencing the extent of leased-in land and the form of lease.

Table-6.1: Categories and Definitions of Independent Variables used in Probit Model

Independent Variables

Variables	Description
Households Characteristics	
Able Workers	Number of able workers in the household between 14 and 55 years of age.
Own Land	Area (in acres) owned by the household.
Draught Animals	Number of draught animals owned by the household.
Ploughs	Number of ploughs owned by the household.
Bullock Carts	Number of bullock carts owned by the household.
Pump Sets	Number of pump sets owned by the household.
Sprays	Number of sprays owned by the household.
Tractors	Number of tractors owned by the household.
Village Characteristics	
Canal Irrigation	Percentage of area irrigated through canal in the village.
Tank Irrigation	Percentage of area irrigated by tanks in the village.
Well / Tube Well Irrigation	Percentage of area irrigated by wells / tube wells in the village.
Poor Peasants	Percentage of poor peasant households in the village (small and marginal).
Output	Average value of output per acre of household (per acre output X price in Rs.).
Rent	Average value of rent per acre of land owned by a household (per acre rent X price in Rs.).

Dependent Variable: Assumes the value for household's decision to be 1 if the household leases-in/out land, and 0 otherwise.

6.3.3. Results Discussion:

6.3.3.1. Households' Choices for Leasing-In Land

i) Landless Households among Leased-In Households

For the sake of analysis we considered the total number of landless households, i.e., 577 households from all the study villages. Out of the 577 landless households, 144 households have leased-in land. The present study attempts to determine the factors that induced the landless laborer households to lease-in land in the different agro-climatic study villages in Andhra Pradesh.

The independent variables are of two types, i.e., household resources and village characteristics. The resources owned by the landless households are limited, and only

include able workers, draught animals and ploughs. The second set of variables includes irrigation characteristics — the percentage of canal irrigation, well irrigation, and tank irrigation considered for probit analysis. Further, we constructed another model in which we used village dummies as independent variables instead of village characteristics, and household resources with village dummies, excluding one village (Mentipudi) as it is 100 per cent irrigated through pubic canal.

Table-6.2: Leased-in Households among Landless Households

Variable	Coefficient	z-Statistic	Prob.
Constant	-7.40	-5.40	**0.00***
Able Workers	0.30	5.15	**0.00***
Animal Power	-0.07	-0.24	0.81
Ploughs	-0.30	-1.23	0.22
Canal Irrigation	0.06	4.46	**0.00***
Well Irrigation	-0.05	-3.67	**0.00***
Tank Irrigation	0.08	4.44	**0.00***
Household Resources + Village Dummies			
Constant	-1.22	-4.25	**0.00***
Able Workers	0.30	5.01	**0.00***
Animal Power	-0.13	-0.41	0.68
Ploughs	-0.35	-1.39	0.17
Kothapalli	0.05	0.21	0.84
Seethampet	-1.01	-3.74	**0.00***
Arepalli	-1.34	-3.52	**0.00***
Chinnapur	-1.07	-2.90	**0.00***
Nagaram	-1.14	-2.68	**0.01****
Jonanki	0.11	0.36	0.72
B.Koduru	-1.35	-3.52	**0.00***

Note:* = Significant at 1%; ** = Significant at 5%. *** = Significant at 10%.
Total Observations: 577
Dependent Variable: Leased-in households =1 (114 observations); otherwise=0 (463 observations).
Tatiparthy has been excluded due to insufficient leased-in households

The results of the binary probit regression coefficients of factors affecting households' decision with regard to leasing-in land are shown in Table 2. We observe a positive sign for the coefficients of variables like the percentage of canal irrigation, tank irrigation and able workers. Higher values of the variables indicate that the decision of the household to lease-in land is more, and vice versa. The results show that the percentage of canal irrigation and agricultural laborers has significant positive effect on the household's decision to lease-in land. Some of the variables like the percentage of tank irrigation and had significant positive effect, while some of the variables like the percentage of well irrigation, animal power, and

ploughs were found to have a negative sign; but the results for well irrigation were insignificant.

ii) Landed Households among Leased-in Households

The total number of households in the study is 1156, of which 275 households have leased-in land across the nine study villages. In this analysis we excluded agricultural laborers as they are not involved in the land lease market; and included landless households that always depend on wage labor market. The present study aims to determine the factors that induce the land operating households to lease-in land in the different agro-climatic study villages in Andhra Pradesh. The same variables as in the earlier model have been used.

Table-6. 3: Leased-in Households among Land Operating Households

Variable	Coefficient	z-Statistic	Prob.
C	-1.94	-7.69	**0.00***
Able Workers	0.05	1.36	0.17
Animal Power	0.06	1.19	0.23
Owned Land	-0.03	-2.81	**0.00***
Bullock Carts	0.28	0.66	0.51
Output	0.00	-1.52	0.13
Rent	0.00	11.10	**0.00***
Ploughs	-0.19	-1.73	**0.08****
Pump Sets	0.05	0.31	0.76
Sprays	-0.19	-1.04	0.30
Poor Peasants	0.16	5.83	**0.00***
Canal Irrigation	0.03	10.69	**0.00***
Well Irrigation	-0.02	-7.27	**0.00***
Tank Irrigation	0.03	8.76	**0.00***
Households Resources + Village Dummies			
C	0.09	0.41	0.68
Able Workers	0.06	1.81	**0.07****
Owned Land	-0.01	-0.86	0.39
Bullock Carts	0.20	1.22	0.22
Ploughs	-0.14	-1.24	0.22
Sprays	-0.16	-0.87	0.38
Kothapalli	0.42	1.96	**0.05****
Seethampet	-0.61	-2.71	**0.01****
Arepalli	-1.76	-8.35	**0.00***
Tatiparthy	-1.64	-7.30	**0.00***
Chinnapur	-1.04	-4.60	**0.00***
Nagaram	-1.27	-5.80	**0.00***
Jonanki	-0.50	-2.25	**0.02****
B.Koduru	-1.58	-6.18	**0.00***

Note : * = Significant at 1%; ** = Significant at 5%; *** = Significant at 10%.
Total Observations: 1156
Dependent Variable: Leased-in households =1 (275 observations); otherwise=0 (881 observations).

This implies that landless farmers as well as landed households mostly prefer to lease-in land in canal irrigated villages rather than in well or tube well irrigated villages; hence the positive significant sign for the coefficients of the variables. Conversely, the number of ploughs and own land have a significant negative effect on households' decision to lease-in land. This implies that the chances of a household's leasing-in land decreases with plough ownership in villages irrigated by wells or non-irrigated villages. The estimated coefficient of the village dummy variables of leased-in households has a positive and insignificant value for Kothapalli, while in the rest of the study villages it is statistically insignificant and negative. Canal irrigation (as in Mentipudi and Kothapalli) is an important criterion (probability is high at 1 per cent level significance) in leasing-in land decisions.

6.3.3.2. Households' Choices for Leasing-out Land

In this model, we took 985 landed (own land) households for studying leasing-out behavior of the household. Of these, 121 households have leased-out their lands across the nine study villages. In this analysis absentee land owners have been excluded as they do not reside in the village, and hence were not accessible — such land owners are more in canal irrigated villages like Mentipudi and Kothapalli. For the sake of analysis we only considered resident leased-out households and the landed households in the villages. The same variables that were used in the earlier model have been used here; the variables are of two types: household resources and village characteristics.

Table-6.4: Leased-out Households among Landed Households

Variable	Coefficient	z-Statistic	Prob.
C	-7.43	-5.17	**0.00***
Able Workers	-0.08	-0.86	0.39
Owned Land	0.04	1.70	**0.09****
Animal Power	-0.10	-1.11	0.27
Ploughs	-0.01	-0.03	0.98
Pump Sets	0.59	1.45	0.15
Output	0.00	-11.62	**0.00***
Bullock Carts	-0.51	-1.67	**0.10****
Sprays	-0.10	-0.19	0.85
Canal Irrigation	0.07	7.15	**0.00***
Well Irrigation	0.08	7.04	**0.00***
Tank Irrigation	0.07	5.53	**0.00***
Poor Peasants	0.13	3.77	**0.00***
Households Resources + Village Dummies			
C	3.06	1.39	0.16
Able Workers	-0.13	-1.34	0.18
Owned Land	0.08	2.66	**0.01****
Animal Power	-0.10	-0.93	0.35
Ploughs	-0.12	-0.57	0.57
Pump Sets	0.64	1.56	**0.12*****
Bullock Carts	-0.37	-1.21	0.23
Kothapalli	0.72	0.12	0.90
Seethampet	-2.19	-1.00	0.32
Arepalli	-2.69	-1.24	0.22
Tatiparthy	-4.34	-1.98	**0.05****
Chinnapur	-1.00	-0.46	0.65
Nagaram	-3.21	-1.45	0.15
Jonanki	-1.72	-0.78	0.43
B.Koduru	-0.63	-0.29	0.77

Note:* = Significant at 1%; ** = Significant at 5%; *** = Significant at 10%.
Total Observations: 985
Dependent Variable: Leased-out households =1 (121 Observations); otherwise=0 (864 Observations).

The probit regression result shows that the factors effecting household's decisions about leasing-out land. Variables such as canal irrigation, percentage of non-cultivating households were found to be positive and significant. On the other hand, the variables percentage of well irrigation and tank irrigation; and poor peasants had positive and statistically significant. This implies that these variables influence the households' decision to lease-out land. With regard to villages dummies, the estimated co efficient with reference to Mentipudi, except Kothapalli village rest of study villages have shown negative sign and not significant.

6.4. Factors Influencing the Extent of Land under Lease: A Village-wise Regression Analysis

The second set of econometric models on the lease market following Bliss and Stern (1982) model on lease arrangements in Palanpur tries to explain the desire to cultivate a certain area. In the context of their study the bullock hire market was absent, and there was high search cost with wage labor and restrictions on sale/purchase of land; hence, there was adjustment of resources through the land lease market, and the net area leased-in can be explained in terms of the households' ownership of the non-marketed resources. Such models can explain the demand as well as the supply of land in the land lease market.

Following the tradition of Bliss and Stern, an attempt is made to model the factors influencing the demand and supply of land in the land lease market. Here we have introduced three major changes to the basic model of Bliss and Stern. First, we propose that the agents may not be homogeneous in terms of their objective for the organization of production: one can have a set of owners of land who have no interest in the organization of production, and we call them the non-cultivating households. One would like to see if these households have an impact of the extent of land leased-out by the households. Second, we introduce the output produced on the land as a proxy for the quality of the land used in cultivation. Third, we propose that variability in output and/or rent has an important influence on the extent of land leased-out/in.

6.4.1. Extent of Land Leased-out

Given the initial allocation of resources, there are some households that own land and some that do not own land. The former households can either self cultivate (maybe with family labor or casual labor) or lease-out their land. So we include all the households who own land. Among these households, some have leased-out land (value of variable—ELO = 0) while some have not leased-out the land (value of variable—ELO = 1). The set of variables influencing the Extent of Land Leased-Out (ELO) are a combination of household's characteristics and characteristics of the land owned:

$$ELO = a + \sum bi\ Hi + \sum ciVi.$$

Where, ELO represents the extent of land leased-out; Hi represents the set of household characteristics; and Vi represents the set of village characteristics.

Hi — set of households characteristics, includes:

(1) Owned land in acres

(2) Number of able workers

(3) Number of draught animals

Vi — the set of village characteristics, includes:

(1) Percentage of total irrigation in the village

(2) Average output value per acre

(3) Average rent value per acre

(4) Percentage of Non-Cultivating Households (NCPH) in the village

The variable extent of land leased-in is defined in terms of the actual land leased-in by the households; the remaining variables are excluded from the equation due to insufficient resources owned by the household and collinear problem. The present study considered more than one model for each village because the use of a single model is not appropriate on econometric grounds, as it poses the problem of multi-collinearity — the variables are correlated with each other. For example, the total net irrigated area and the composition of the irrigation sources is used in this analysis. The main sources of irrigation are well irrigation and canal irrigation. It was found that increase in irrigated area was not a significant factor for the increase in the leasing-in of land. The coefficient for the increase in irrigation was observed to be positive in all the models as well as for all the villages; but its impact was insignificant on the extent of leased-in land. In villages like Mentipudi and Kothapalli, the whole land is irrigated by canal; thus own land cultivation and irrigated land in the two villages are highly correlated with each other (correlation is 1).

With a view to identify the important variables, the regression equations were estimated by taking the variables in all possible combinations. The model with the highest F-statistics value was accepted and presented here in Table 5. Some models show serious problem of autocorrelation, which is overcome by including the auto regressive term AR(1) as an

explanatory variable. The significance of the coefficients was judged at three levels, viz. 1%, 5%, and 10%.

The independent variables included here for analysis are divided into two categories: household resources and village resources. The household resources includes able workers, own land, animal power, and agricultural instruments such as ploughs, bullock carts, pump sets, tractors, sprays, etc.; all the household resources have been treated equally. The second category, i.e., village characteristics, includes percentage of irrigated land, the average output value per acre, the rent value per acre, percentage of poor peasants, middle peasants, rich peasants, and non-cultivating households, and cropping pattern (food crops, cash crops).

Table-6.5: Estimated Results of the Factors Affecting Leasing-out of Land in Different Villages

	Mentipudi	Kothapalli	Seethampet	Arepalli	Tatiparthy	Chinnapur	Nagaram	Jonanki	B.Koduru
C	-0.06 (-0.09) (0.93)	-0.30 (-0.70) (0.49)	-0.53 (-3.37) **(0.00)***	-0.48 (-2.95) **(0.00)***	-0.02 (-0.79) (0.43)	0.47 (2.91) **(0.00)***	0.14 (3.07) **(0.00)***	0.08 (1.04) (0.30)	0.20 (3.18) **(0.00)***
NCPH	3.37 (4.98) **(0.00)***	3.23 (7.97) **(0.00)***	6.05 (21.89) **(0.00)***	6.04 (21.27) **(0.00)***	6.00 (80.39) **(0.00)***	0.73 (3.98) **(0.00)***	2.86 (16.37) **(0.00)***	2.22 (12.21) **(0.00)***	0.75 (14.93) **(0.00)***
Rent value per acre	0.003 (0.56) (0.61)	0.00 (-0.02) (0.98)		0.00 (-0.09) (0.93)		-0.01 (-1.93) (0.08)	0.00 (-0.44) (0.66)	0.00 (-1.19) (0.24)	
Output value per acre	0.001 (0.32) **(0.00)***	0.01 (0.29) **(0.00)***	-0.00 (-2.63) **(0.01)****	0.003 (2.22) **(0.03)****	-0.0004 (-0.77) (0.44)	-0.01 (-3.15) **(0.00)***	-0.002 (-2.69) **(0.01)****	-0.01 (-2.45) **(0.02)****	0.004 (4.66) **(0.00)***
Able workers	0.02 (0.30) (0.76)	0.03 (0.40) (0.69)			0.0001 (-0.36) (0.72)			0.04 (1.22) (0.22)	0.00 (0.10) (0.92)
Animal power		-0.05 (-0.75) (0.44)		-0.006 (-0.81) 0.56			-0.02 (-1.25) (0.22)		
Irrigation	0.06 (1.54) (0.13)	0.07 (2.09) **(0.04)****	0.07 (5.20) **(0.00)***	0.07 (5.24) **(0.00)***	-0.00005 (0.17) (0.86)	0.21 (13.10) **(0.00)***	-0.01 (-0.79) (0.43)	0.001 (1.91) **(0.06)****	-0.003 (-1.94) **(0.06)****
Own land		0.05 (0.75) (0.44)	0.46 (2.37) (0.22)		0.00 (1.48) (0.14)	0.06 (1.18) (0.28)	0.02 (1.25) (0.22)	0.11 (1.24) (0.19)	
AR (1)			-0.18 (-3.00) **(0.00)***	-0.15 (-2.52) **(0.01)****					
R^2	0.80	0.85	0.69	0.69	0.97	0.79	0.78	0.80	0.89
DW	2.18	1.90	2.05	2.05	2.07	2.05	1.94	2.14	1.50

Note: The first value without parentheses indicates coefficient values.
Second value in the parentheses indicates the t-statistics values.
The third value in the parentheses indicates the probability values.
* = Significant at 1%; ** = Significant at 5%; *** = Significant at 10%.
In this table, only the important variables are presented and the model with highest F-statistics value is accepted but we have run the regression with all possible combinations of the independent variables.

In this analysis, it was found that NCPH (non-cultivating peasant households) have high positive influence on leasing-out land. The value was found to be statistically significant in all the study villages. The coefficient values for NCPH across the study villages indicate increased leased-out land, i.e., 3.37 in Mentipudi, 3.23 in Kothapalli, 6.05 in Seethampet, 6.04 in Arepalli, 0.23 in Tatiparthy, 0.73 in Chinnapur, 2.86 in Nagaram, 2.2 in Jonanki and 0.75 in B.Koduru. The increase in rent value per acre indicates a possibility in the decline of leased-out extent. The regression results show that this value was insignificant and negative in most of the study villages, except in Chinnapur, where its value was significant. It is observed that able workers do not significantly influence the decision to lease-out land. The study considered results from five villages and all were found to be insignificant.

Irrigation was observed to be a significant factor while leasing-out land. There are some study villages such as Mentipudi, Kothapalli and Jonanki, whose coefficient values were found to be 0.06, 0.07, 0.01, respectively and significant at 5% level. Villages such as Seethampet and B.Koduru have a negative coefficient and are statistically significant; these villages are irrigated by wells and tube wells, and most of the cultivable lands are held by rich peasants, whereas in B.Koduru Village, a big land owner leased-in lands from the poor peasants. In this model we would like to include household resources such as ploughs, bullock carts, sprays and pump sets. It was observed that agricultural instruments were not significant factors for leasing-out land in all the study villages.

6.4.2. Extent of Land Leased-In

A household that wants to cultivate the land is a potential demander of land in the land lease market. Some of these households may want to lease-in land while some may have ‘enough’ land and may not be leasing-in land, and some households may be denied access to leased-in land. All households operating land and the set of agricultural labor households form the set of potential demanders of land in the land lease market. The variable, actual extent of land leased-in (ELI), assumes the actual value of land leased-in for all households that have leased-in land, and zero if the households have potential to lease-in land but have not done so.

The set of variables influencing the value of ELI are a combination of the household's characteristics and the characteristics of the land:

$$ELI = a + \sum bi\ H_i + \sum ciVi$$

Where in ELI represents the extent of land leased-in; H_i represents the set of household characteristics; and Vi represents the set of village characteristics.

Hi includes:
(1) Owned land in acres
(2) Number of able workers
(3) Number of draught animals

Vi includes:

(1) Percentage of total irrigation in the village
(2) Average output value per acre
(3) Average rent value per acre
(4) Percentage of poor peasant households in the village

Table-6.6: Estimated Results of the Factors Affecting Leased-in Land in Different Villages

	Mentipudi	Kothapalli	Seethampet	Arepalli	Tatiparthy	Chinnapur	Nagaram	Jonanki	B.Koduru
C	-0.55 (-0.74) (0.45)	0.01 (0.06) (0.95)	0.54 (2.91) **(0.00)***	-0.17 (-1.34) (0.17)	0.09 (0.59) (0.55)	-0.30 (-2.33) **(0.02)****	0.02 (0.60) (0.55)	-0.08 (-0.94) (0.35)	-1.49 (-5.68) **(0.00)***
Output value per acre	0.001 (4.52) **(0.00)***	0.02 (6.04) **(0.00)***	-0.01 (-3.93) **(0.00)***	0.002* (2.83) **(0.00)***		0.0001 (1.81) **(0.07)****		0.02 (4.61) **(0.00)***	-0.00 01 (-0.38) (0.70)
Able workers	0.02 (1.04) **(0..03)***	0.01 (4.12) **(0.00)***		-0.03 (-1.49) (0.13)	-0.04 (-0.95) (0.34)			0.03 (2.46) **(0.02)****	
Animal power			0.05 (0.77) (0.45)		0.05 (2.09) **(0.04)****	0.05 (1.99) **(0.05)****	0.01 (6.12) **(0.00)***		
Irrigation			0.01 1.10) (0.27)	0.007 (0.61) (0.54)	0.0006 (-0.04) (0.97)	0.01 (0.52) (0.60)	0.0005 (-0.94) (0.35)	0.01 (3.12) **(0.00)***	
Rent value per acre	-0.01 (-6.21) **(0.00)***	-0.02 (-4.63) **(0.00)***	0.0004 (16.16) **(0.00)***		0.008 (12.11) **(0.00)***		0.01 13.02) **(0.00)***	-0.02 (-11.69) **(0.00)***	0.03 (6.98) **(0.00)***
Poor peasants			-0.53* (-2.89) **(0.00)***	0.33* (2.61) **(0.00)***		0.35 (2.51) **(0.01)****			-1.48 (-5.44) **(0.00)***
Owned land	-0.003 (2.13) (0.18)	-0.002 (-1.20) (0.23)			-0.00003 (-0.05) (0.96)		-0.003 (-1.75) (0.08)	0.00001 (0.24) (0.81)	0.15 (22.19) **(0.00)***
AR (1)		1.04 (142.23) **(0.00)***					0.82 (65.39) **(0.00)***	0.56 (21.33) **(0.00)***	-0.59 (-8.18) **(0.00)***
R^2	0.60	0.99	0.66	0.61	0.71	0.73	0.98	0.92	0.82
DW	2.13	1.62	2.02	1.99	2.02	2.12	1.71	1.55	2.30

Note: The first value without parentheses indicates coefficient values.
The second value in the parentheses indicates the t-statistics values.
The third value in the parentheses indicates the probability values.
* = Significant at 1%; ** = Significant at 5%; *** = Significant at 10%.
In this table, only the important variables are presented and the model with highest F-statistics value is accepted but we have run the regression with all possible combinations of the independent variables.

From the OLS regression results (Table 6), we observe that the output value per acre has a positive sign and is statistically significant in highly irrigated villages like Mentipudi — coefficient value = 0.01 and t-statistics = 4.52. For Kothapalli the coefficient value is 0.02, while in Jonanki and Arepalli it is 0.002 and 0.02 respectively. For two villages, i.e., Seethampet and B.Koduru, which are mainly irrigated by well and tube well, the value is negative.

In the case of rent value per acre, the regression results are mostly negative and statistically significant at 5% level: the value of the coefficients for Mentipudi, Kothapalli and Jonanki are 0.01, -0.02, -0.02 respectively. This implies that only in villages where there is more land under tenancy rent is a significant factor. The number of draught animals was found to be insignificant in Mentipudi and Kothapalli, which are irrigated through canal, but was found to be significant in study villages such as Tatiparthy, Chinnapur and Nagaram the coefficient values are 0.05, 0.05, and 0.01, respectively and were significant at 5% level. Irrigation has a collinear problem in Mentipudi and Kothapalli villages which are cent per cent irrigated through canal. In the case of Jonanki, the coefficient value is 0.01, at 5 per cent level of significance. In all the remaining villages except, in Tatiparthy and Nagaram, the coefficients are positive but insignificant; Tatiparthy and Nagaram have negative and insignificant coefficients.

If the number of able persons is more in the households, then there is a possibility that they will practice own cultivation (if they own land), or lease-in land for cultivation in preference to wage employment (if they do not own land). From the present regression analysis it was found that the number of able workers has a positive but insignificant impact on leasing-in land (the study has used the number of able workers in all the models and in none of the models this was found to be significant; thus the values for the villages have not been specifically presented), except in Mentipudi, Kothapalli and Jonanki — the coefficient values for able workers were 0.01, 0.02, and 0.03 respectively and significant at 5% level. This shows that a unit increase in the number of able workers leads to the 0.03 units increase in the extent of leased-in land. In Arepalli and Tatiparthy the coefficient values for the

number of able persons was found to be negative. This may be because in a drought prone village, the able workers migrate out.

If the extent of land owned by the household increases, then there may be lesser chance to lease-in land; but if along with increase in the land owned, the number of able workers also increases in the household then the leased-in land may increase. In Nagaram and B.Koduru, the increase/decrease in the extent of land owned was found to be a significant factor that affects the leasing-in of land. The coefficient for the increase in owned land

was negative in most of the study villages, and significant in some of the villages (0.003 and 0.15 in Nagaram and B.Koduru, respectively). This implies that a unit increase in the extent of owned land leads to 0.003 and 0.15 units decrease in the leased-in extent. In Tatiparthy and Jonanki, the coefficient for owned land was found to be positive but insignificant, while in Kothapalli it was negative but insignificant. In all the remaining villages the coefficient of owned land was positive but insignificant in all possible combinations of variables. Hence, if the extent of owned land increases in the labor supplying households or among the landless agricultural labor, there is lesser chance of increase in leased-in land.

When the proportion of agricultural laborers increases in a village and there is less demand from the labor market, they prefer lease-in land. The present analysis found that in Arepalli, Chinnapur and B.Koduru the increase in the number of agricultural laborers significantly affected the increase in the extent of leased-in land. The coefficient for the factor in all the three villages was positive and significant at 1% level. The result for the above three villages shows that a unit increase in the proportion of the agricultural labor leads to 0.33, 0.35 and 1.48 units increase in the extent of leased-in land in the respective villages. The coefficient for the proportion of agricultural labor was negative and significant in Seethampet, which implies that increase in agricultural labor leads to decline in the leased-in extent — unit increase in agricultural labor leads to 0.53 units decline in the extent of leased-in land. In all the other villages the increase/decrease in proportion of agricultural labor was not found to be statistically significant.

6.5. Conclusions

We have found five groups of irrigated villages — canal irrigated, well irrigated, tank irrigated, combination of various sources of irrigation, and rain fed villages. The main sources of irrigation are one of the important factors to influencing the extent of leased-in/out land. The results of the binary probit regression analysis shows a positive sign for the coefficients like the percentage of canal irrigation, tank irrigation and able workers of factors affecting landless household's decision to leasing-in land. The results shows that landed households mostly preferred to leased-in land in well and tube well irrigated villages. The estimated coefficients of the village dummies with reference to Mentipudi, it is a positive and insignificant value for Kothapalli and Jonanki. While in the rest of the study villages have negative and statistically significant. The probit regression results shows that the factors effectives households decisions about leased-out land, variables such as percentage of canal and non-cultivating households were found to be positive and significant.

The OLS regression results shown that NCPH (Non-Cultivating Peasant Households), output value per acre and irrigation have high positive influence on leased-out extent, the value was found to be statistically significant in all the study villages but the value of output per acre and irrigation were not be found as significant in Tatiparthy and Nagaram. The rest of the variables in the analysis were not significant factors to influenced leased-out extent. Similarly, we observed that output value per acre has a positive sign and statistically significant in all study villages except Tatiparthy, Nagaram and B.Koduru. Rent value per acre has negative and statistically significant in public irrigated villages like Mentipudi, Kothapalli and Jonanki. It has a positive significant in Seethampet, Tatiparthy, Nagaram and B.Koduru. The proportion of poor peasants was to be found a positive significant in Arepalli and Chinnapur. It has a negative significant in Seethampet and B.Koduru where rich peasants are high.

The probit analysis results have shown that there was a high probability that landless as well as landed households in public irrigated villages such as Mentipudi, Kothapalli and Jonanki would lease-in land. In this analysis, we also found that ‘absentee land owners’ are more in canal irrigated villages, and factors such as percentage of canal irrigation, percentage of non-cultivating households, and percentage of cultivable area under paddy are positive and statistically significant. According to probit regression results, in villages where the percentage of canal irrigation and percentage non-cultivating households are more, there is higher probability to lease-out land. Landless labourers can enter into land lease market in canal irrigated villages.

CHAPTER 7

CONCLUSIONS

Land is an important factor for rural livelihood, but there is unequal distribution of land among the rural households. While few own hundreds of acres of land, most of them do not have even a cent land. There is large inequality in the distributed of land among the rural households in India. Second, the nature of ownership of land also plays an import role in which access to land can be obtained; it is the core of the livelihood of a majority of poor who do not have sufficient land for cultivation. In the context of this inactive land market temporary land transfers its nature and impact is important. Tenancy arrangements facilitates transfer of land from owners, who are unable or do not want 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 in their household. Historically, there are many views on the existence of tenancy system in the agricultural sector. According to the neo-classical view, imperfect market for household resources is one of the reasons for the existence of tenancy. Another important reason expressed by institutional economists is that informal institutions are substitute for formal markets and could be the reason for the existence of tenancy. Marx expressed that class structure or unequal distribution of resources is one of the reasons for the inception of the tenancy system in the rural economy. Present study makes an attempt to analyse the existence of tenancy in rural areas as a rational response to missing markets where there is unequal distribution of irrigation, land, labour and agricultural implements. In contrast, there is a need for resource adjustments in the different imperfect or missing markets. A rural household having surplus labour, animal power and agricultural implements but not having land in relation the resource adjustment takes place in the form of leasing-in land. While the households who have excess land in relation to lack of other family resources their lease-out land, given that

the land and labour are made adjustments based on these missing markets. In this context, land tenancy has played a significant role in a less developed economy like India. The main objective of the study is to analyze whether the sources of irrigation have any association with the extent of lease and forms of lease. In addition, the work focuses on the agents of leasing-in and leasing-out land in study villages across different agro-climatic regions. The nature of irrigation as a one of the determine factor to the extent and forms of lease.

Analysis was conducted at two levels state level and village level; at state level (based on the NSSO data) the proportion of land reported under tenancy has been different in the states. For the recent year 2002-03, the proportion of land under tenancy was highest (16.8 per cent) in Punjab, followed by Haryana (14.4 per cent), which are highly canal-irrigated states. Similarly, the states that reported the lowest extent of land under tenancy were Rajasthan (2.8 per cent), followed by Madhya Pradesh (3.6 per cent), Karnataka (3.6 per cent), and Kerala (4 per cent), which represent the less-irrigated states. The trend on the terms of lease was also observed in the study, and it was found that most of the states, such as Andhra Pradesh, Haryana, Kerala, Punjab, and West Bengal, have moved towards fixed rent form of lease, while some states such as Bihar, Orissa, Uttar Pradesh, Rajasthan, and Assam still have sharecropping as a dominant form of lease; in states such as Kerala (though lease is legally banned) and Maharashtra, “other terms” of lease are observed to be dominant, which is reportedly not a proper form of lease. High irrigated states are having large extent of land under tenancy system. High tenancy states such as Punjab (16.8 per cent), Haryana (14.4 per cent), U.P (9.5 per cent) and West Bangal (9.3 per cent) where irrigation also high (Punjab (95 per cent), Haryana (70 per cent), U.P (67 per cent) and West Bengal (43 per cent). It implies that the irrigation plays an important role in the extent of lease and form of lease. With reference to form of lease, fixed rent is high in the states like Haryana (81 per cent), Punjab (80.7 per cent) where irrigation is also high.

The study villages are known to show heterogeneity. Such heterogeneity is reflected in terms of vary in extent of leased-in land and forms of lease. Some villages are high extent of

lease to total operated land in Mentipudi (52.54 per cent) and Kothaplli (66.18 per cent). Contrastingly in Arepalli (5.4 per cent) B. Koduru (7.62) and Tatiparthy (8.45 per cent) which are less percentage of extent of lease-in land due to lack of irrigation(dry villages). In some villages, the extent of leased-in land is not significant amount (Seethampet (15.86 per cent) and Chinnapur (17.8 per cent). Arepalli, Chinnapur, Nagaram, Seethampet, B.Koduru and Tatiparthy do not have a significant amount of land under tenancy. It was found that canal irrigation areas also have a large share of land under tenancy. The nature of irrigation plays an important role in the extent of leased-in land and form of lease, which is found to be varying in the study villages. The villages where irrigation is through canals, there is more percentage of operated land under tenancy, as well as a high proportion of pure tenants. The fixed kind of lease system is high in canal irrigated villages. However, Jonaki village which is being irrigated by tanks has a high extent of leased-in land (30.14 per cent) and sharecropping as a pre-dominant form of lease.

Empirical evidence suggests that the regions with high irrigation also witness higher extent of land under tenancy. Across the regions, the extent of land lease and forms of lease are observed to be different, and contribute to different sources of irrigation. The two coastal villages of Mentipudi and Kothapalli are 100 per cent canal-irrigated which are dominated by fixed kind form of lease, while Seethampet and B.Koduru are mainly irrigated through tube wells where fixed cash as a dominant form of lease. In Arepalli, canal and tanks are the predominant sources of irrigation; in Chinnapur canal and wells; in Nagaram tank and wells; and in Jonanki, tanks are the predominant sources of irrigation.

We used correlation analysis to see variables co vary, and quantify the strength of the relationship between the variables. The used variables are proportion of leased-in extent, share of canal irrigation, one form supply side factor of lease that share of non-cultivating peasant households and another from demand side factor of lease that share of agricultural labour households. The correlation analysis reveals that the percentage of non-cultivating households and share of land under canal irrigation are significant positive relation with the extent of leased-in land in the year of 1981-82. Furthermore, the share of land under canal irrigation is positively correlated with the extent of leased-in land for all the three years

1981-82, 1991-92 and 2002-03. The variables such as percentage of agricultural labour households and percentage of pure tenant households were found to be in positive correlation with the extent of leased-in land, though not statistically significant. Rank correlation analysis was carried out for three years across 15 major states—the states we classified for the sake of analysis. The results also showed same relationship between canal irrigation and extent of leased-in land that is statistically significant for the three periods in the highly irrigated states, while in the less irrigated states, there was a negative correlation between irrigation and extent of leased-in land. The other variables used for the analysis, such as proportion of agricultural labourers, pure tenants, and NCPH were not statistically significant. It was observed that canal irrigation in the highly irrigated states was highly correlated and significant for the three decades. The regression results also show same results that the share of canal irrigation is positively significant with extent of leased-in land at 1 per cent level. This means that for one unit increase in canal irrigation there will be 7.4 units increase in the extent of leased-in land in the state level.

At village level, the sample villages were selected from different agro-climatic regions, and were found to be different in terms of the extent and forms of lease. With regard to irrigation, it is observed that canal-irrigated (highly irrigated) villages, which are also rice-growing villages, have high tenancy, while less-irrigated villages have low tenancy. The highly irrigated villages have fixed rent as a dominant form of lease, while the dry villages have sharecropping as a dominant form of lease; except in Seethampet, Tatiparthy and B.Koduru, which have peculiar characteristic features influencing the form of lease: Seethampet is a commercial village, where tobacco is the major crop cultivated in the leased-in lands; Tatiparthy is a drought-affected village, cultivating dry cash crops such as castor; and in B.Koduru, the big landlords have leased-in land from marginal and small holders (reverse tenancy). It is also observed that the nature of the crop (cash crop) influences the form of lease in the villages. Fixed rent kind of lease was the preferred form of lease among all categories of households in Mentipudi and Kothapalli, whereas in the village of Seethampet, fixed cash is the predominant form of lease preferred by all households except the poor peasant households, which preferred sharecropping. In Arepalli, fixed kind is the predominant form of lease and is preferred by the poor and middle

peasants; but two middle peasant households have opted for fixed cash as a form of lease. In Tatiparthy Village, which is a drought-prone village, the predominant form of lease among the poor and middle peasant households is fixed cash, and there were no rich peasants in the land lease market. In villages such as Chinnapur, Nagaram and Jonanki, sharecropping is observed to be the preferred form of lease among the poor and middle peasants rather than the fixed form of lease; however, the rich peasants did not prefer sharecropping in these three villages. In B.Koduru, one rich peasant household has leased-in land (78 per cent) from the poor peasants for fixed cash.

The study has found that the leasing-out land agents are: non-cultivating peasant households—these households have been leasing-out land massively (70 per cent of the leased-out land) in all the study villages. In B.Koduru, the poor peasants leased-out their land to one big landowner. However, in Seethampet and Arepalli, land was leased-out by the rich peasant households, while in Chinnapur a significant amount of land was leased-out by the poor and middle peasants. The leased-out agents are not significant in all the study villages; for example in B.Koduru 23 marginal farmers (mala caste households) have leased-out their land to one landlord (forward caste).

One more interesting point is that there is more pure tenancy in public irrigated villages such as Mentipudi (51 per cent of the pure tenant households), Kothapalli (77 per cent of the pure tenant households), and Jonanki (39.53 per cent of the pure tenants households). The landless and poor peasants are predominant classes leasing-in land in Kothapalli, Mentipudi and Jonanki, while in Tatiparthy, Arepalli, Nagaram and Chinnapur, it was observed that middle peasants are predominantly leasing-in their land; rich peasants are observed to be dominant leasing-in agents in B.Koduru and Seethampet. However, the proportion of tenants is high in public irrigated villages such as Mentipudi, Kothapalli and Jonanki. Across castes, the Kapu castes are dominantly lease-in land compared to the malas (SC), madigas (SC) and the Schedule Tribes (ST). A few mala (SC) households in Mentipudi (16 per cent) and Kothapalli (30 per cent) have leased-in land, while Chinnapur accounted for about 50 per cent of the mala and madiga (SC) households leasing-in land.

However, the study also found intra-village variations in terms of the agrarian structure, class and caste distribution of the study villages. Among the different social caste groups, the mala (SC) households owned 0.43 average land; while the madiga (SC) households owned 0.85 average land; the Schedule Tribe households owned 0.86 average land; and the other caste groups owned 2.58 average land in the nine study villages. Another important characterstic, such as cropping pattern, also seems to be varying across the different study villages. The climatic conditions, however, do not vary much in the study villages, though the nature of crops is observed to be different across the study villages. In the coastal study villages of Mentipudi, Kothapalli and Seethampet, which have flat and alluvial lands, the fertile lands are used to cultivate crops such as paddy as a mono crop in Mentipudi and Kothapalli; there are two crops cultivated per year. In Seethampet, which is irrigated through tube wells, tobacco was the major crop produced. Another two study villages, namely Jonanki and B.Koduru, from Srikakulam District cultivate paddy as a major crop, along with other crops such as chillies and jowar, which are cultivated in dry lands. In Arepalli, Chinnapur and Nagaram, paddy is cultivated as a major crop, along with other crops such as turmeric, maize, jowar and chillies. Castor and jowar are the major crops cultivated in Tatiparthy. The study has found that the extent of tenancy and the proportion of pure tenants is high in public irrigated villages. Forms of lease are found to be varied in the study villages: fixed kind was the dominant form of lease in canal-irrigated villages, where paddy is cultivated as a mono crop. Fixed cash is high where private irrigation is a major source of irrigation; and sharecropping was seen to be dominant in villages where tank irrigation was high. Nature of the crop also is a determinant factor of form of lease in the study villages cultivating cash crops; in such villages fixed cash is observed to be the dominant form of lease.

In this study, regression analysis is used for focus on the relationship between the extent of leased-in/or out land as a dependent variable and sources of irrigation, households resources like able workers, own land, draught animals, ploughs, bullock carts, pump sets, sprays, tractors and village resource output value per acre, rent value per acre, share of NCPH and poor peasant households as independent variables. More specifically, this analysis helps to understand how the extent of leased-in/out land changes when any one of the independent variables is varied. Village

level data regression results shows that share of public irrigation (canal and tank) have high positive significant influenced on extent of leased-in land in Mentipudi, Kothaplli and Jonanki villages. It is implies that only in villages Tatiparthy, Seethampet and Nagaram where there is less irrigation has negative and insignificant influence on extent of leased-in land. The extent of land was accounted less in these dry villages which are dominated by tube well irrigation as a major source of irrigation. The results show that NCPH's (Non-Cultivating Peasant Households'), output value per acre and irrigation have high positive influence on leased-out extent; the value was found to be significant in all the study villages; however, the value of the output per acre and irrigation were not be found to be significant in Tatiparthy and Nagaram where irrigation is very less. The variables like able workers, animal power and owned land were not significant enough to influence the extent of leased-out land in the analysis. Similarly, we observed that the output value per acre has a positive sign and is statistically significant in all study villages except Tatiparthy, Nagaram and B.Koduru. The rent value per acre was negative and statistically significant in public irrigated villages such as Mentipudi, Kothapalli and Jonanki. It has a positive significance in Seethampet, Tatiparthy, Nagaram and B.Koduru. The proportion of poor peasants was found to be positively significant in Arepalli and Chinnapur; it has a negative significance in Seethampet and B.Koduru where the proportion of rich peasants is high.

The binary probit regression analysis was done in the study to understand factors affecting household's decision to leased-in/ out land in the study villages. The results of show a positive sign for the coefficients such as the percentage of canal irrigation and tank irrigation factors affecting the landless households' decision to lease-in land. The results show that landed households mostly preferred to lease-in land in well and tube well irrigated villages. The estimated coefficients of the village dummies with reference to Mentipudi, were positive; they had insignificant values for Kothapalli and Jonanki, while the rest of the study villages showed negative and statistically significant results. The probit regression results show that the factors effecting the households' decisions regarding leasing-out land, and variables such as percentage of canal and non-cultivating households are positive and significant.

The study results show that the decision of a household regarding to leasing-in/out land is different across the study villages due to imperfect or missing market for some household's resources like bullocks, tractors etc. In canal irrigated villages, farmers are using tractors instead of human labor and bullocks in agricultural production. All the tenants have been using tractors particularly in ploughing operations and the important of plough and bullocks with human labour became negligible. This is one of the incentives for the landless labor to enter into land lease market without plough and bullocks in canal irrigated villages. However, there are available markets for new technology, fertilizers, pesticides and HYV seeds in order to increase productivity. This can influence leasing behavior of a rural household, and landless households who having labour power without other resources to enter into the land lease market. In the case of backward villages where public provision of irrigation is less and not yet developed markets for technology. Here, the household resources like ploughs and bullocks in combination with human labor became importance and missing market for tractor. Farmers depend on human labour and bullocks which can influence leasing behavior of the households. The households who owned resources like land, plough, bullocks and agricultural implements, they can enter into land lease market. This might be reason land less labours can not take leasing-in land in unirrigated villages. Thus, missing markets is one of the reasons for leasing behavior of rural households in the areas not irrigated while the presence of landless labour households without alternatives sources of employment and sizable presence of non cultivating households are the dominant reason for lease in the irrigated areas.

Tenancy is an important production arrangement in agriculture because the tenancy system facilitates transfer of land informally. This system does not provide adequate incentives for investment for new technology or promoting land development to increase production and yield. Poor tenants are inefficient to introduce new technology or promoting adequate incentives on agriculture. However, pure tenants are not market friendly because their produce gone for self-consumption and rent. It implies that such a tenancy system is big constrained for agricultural growth in long-run.

BIBILOGRAPHY

Adams W and Norman Rask [1988], "Economics of Cost-Share Leases in Less Developed Countries". *American Journal of Agricultural Economics.* Nov 1968, PP-935-942.

Agarawal B [1983], *Tenancy, Input-Intensity and Productivity – A Study based on Orissa and Punjab*. Delhi, Institute of Economic Growth, 1983. (Working Paper E/82/83).

Agenor, Pierre Richard, [1996], "The Labour Market and Economic Adjustment". *IMF Staff Papers*, Vol: 43(2), June 1996, PP-261-335.

Ahmed, Iqbal [1981a], "Farm Size and Labour Use: Some Alternative Explanations" *Oxford Bulletin of Economics and Statistics.* Vo:43, No:1, PP-73-78.

Akerlof G [1970], "The Market for Lemons: Qualitative Uncertainty and the Market Mechanism", *Quarterly Journal of Economic*, Vol: 84, PP-488-500.

Allen D and D Lueck [1992], "Contract Choice in Modern Agriculture: Cash Rent Versus Cropshare". *Journal of Law and Economics,* Vol:35, October, PP-397-426.

Anderson J.R and Hardaka J.B [1979] Economic Analysis in Decision of New Technologies for Small Farmers. In A. Vardes, G.M. Scobie and J.L. Dillon (eds) *Economic and the Design of Small-Farmer Technology*. Ames: *Lowa State University Press.* PP-11-26.

Anderson J.R. and Hardaka J.B. [1977], *Agricultural Decision Analysis*, Ames: Lowa State University Press.

Aoki, Masahiko and Yujiro Hayami (eds) [2001], *Communities and Markets*. Oxford: Oxford University Press.

Athreya, V.G. Djurfeldt and S Lindherg [1990], "Barriers Broken: Production Relations and Agrarian Change in Tamil Nadu". *Sage Publications,* New Delhi and London.

Athrya V.B. [1986], "Production Relations and Agrarian Change", *Social Scientist*, Vol: 14, No: 5, PP-3-14.

Athrya V.B. [1986a], "Economics of Scale or Advantages of Class? Some Results from a South Indian Farm Economy Study". *EPW,* Vol:21, No:13, PP-A2-14.

Bagchi [1975] "Crop-Sharing Tenancy in Agriculture: A Regoinder", *Economic and Political Weekly,* Volume. 10, July,26.

Bagchi [1976] "Crop-Sharing Tenancy and Neoclassical Economics", *Economic and Political Weekly,* Vol. 11, January, 17.

Bagchi, A.K [1973] "Some Implications of Unemployment in Rural Areas". *Economic and Political Weekly,* Special Number, August, PP. 1501-10.

Banhi Chakravarthy [1995], "Mechanisms of Wage Fixation in India", *India Journal of Economics,* Vol: 76, No: 300, July, PP-31-45.

Bardan P.K. [1977], "Variations in Forms of Tenancy in a Peasant Economy", *Journal of Development Economics,* Vol:4, PP-105-118.

Bardha, Kalapana [1977], "Rural Employment, Wages and Labour Markets in India", *EPW,* Vol:12, July 9, PP-1101-1116.

Bardhan P [1979], "Wages and Employment in a Poor Agrarian Economy: A Theoretical and Empirical Analysis". *JPE,* June 1979.

Bardhan P. K. and Ashok Rudra [1980] " Terms and Conditions of Sharecropping Contract". *Journal of Development Studies,* Vol:16, No:3.

Bardhan P.K. [1973] "Size Productivity and Return to Scale: An Analysis of Farm Level Data in Indian Agricultural". *Journal of Political Economy,* Vol:81, No:6, PP-1370-1386.

Bardhan P.K. [1984], "Determinants of Supply and Demand for Labour in a Poor Agrarian Economy: An Analysis of Household Survey Data from Rural West Bengal eds. Binswanger Hons P and Rosenzweig Mark R [1984] *Contractual Arrangements, Employment and Wages in Rural Labour Markets in Asia*. Yale University Press. New Haven and London.

Bardhan, Pranab [1979], "On Class Relations in Indian Agriculture", *EPW,* Vol:14, No:19.

Bardhan, Pranab [1982], Agrarian Class Formation in Indian, *Journal of Peasant Studies,* Vol:10, No:1, October.

Bardhan, Pranab K, [1976] "Variations in Extent and Forms of Agricultural Tenancy-1: Analysis of Indian Data across Regions and Over Time". *EPW,* Sept-11, 1976, PP-1505-1546.

Basu K [1986], " The Market for Land , An Analysis of Interim Transactions". *Journal of Development Economics,* Vol:20, No:1, PP-163-177.

Basu K [1990], *Agrarian Structure and Economics Underdevelopment,* Harwood Academic Press. Chur, Switzerland.

Basu K [1992], "Limited Liability and Existence of Share Tenancy". *Journal of Development Economics.* Vol:38(1), PP-203-220.

Basu, Kaushik [1983], "The Emergence of Isolation and Inter-linkage in Rural Markets". *Oxford Economic paper,* Vol: 35, No: 2.

Bell C [1976], "Production Conditions Innovations and Choice of lease in Agriculture" *Sankhya the Indian Journal of Statistics.* Vol:38, Series Part 4, PP-165-190.

Bell C [1993], "Interactions between Institutional and Informal Credit Agencies in Rural India". In K Hoff, A Braverman and J Stiglitz (eds), The Economics of Rural Organization: Theory, Practice and Policy. London: *Oxford University Press.*

Bell Clive, and Zusman, Pinhas [1976] " A Bargaining Theoretic Approach to Cropsharing Contracts" *American Economic Review,* 66 (September); Pp. 578-88.

Bellanted D, Jackson M, [1979], *Labour Economics: Choice in Labour Market*. New York, McGraw – Hill.

Benassy, Jean – Pascal [1982], *The Economics of Markets Disequilibrium*. Orlando: Academic Press.

Beteille A [1974], *Studies in Agrarian Social Structure. Delhi*: Oxford University Press.

Beteille, Andre [1979], *Studies in Agrarian Social Structure*.: Raksh Press. New Delhi

Bewley, Truman F [1995], "A Depressed Labour Market as Explained by Participants". *AER*, 85:2, PP-250-254.

Bhaduri, Amit [1984], *Economic Structure of Backward Agriculture*, Macmillan Indian Ltd. New Delhi.

Bhagwati J and Chakravarty S, [1969], "Contributions to Indian Economic Analysis: A Survey "*AER.*, 59 Supple, September [1969]: PP-1-118.

Bhalla Sheila [1977], "Changes in Acreage and Tenure Structure of Land Holdings in Haryana, 1962-72, *EPW*, Vol:XII; No:13, March 26, 1977.

Bhalla, Sheila [1983], "Tenancy Today: New Factors in Determination of Model of Level of Payments in Agricultural Land". *EPW*, Annual No. May.

Bhalla, Sheila [1993], "The Dynamics of wage Determination and Employment Generation in Indian Agriculture". *IJAE*, Vol:48, No:3, July-Sep, PP-448-470.

Bharadwaj K [1978], *Classical Political Economy and Rise to Dominance of Supply and Demand Theories*, R.C. Dutt Lectures, 1976, Orient Longmans, Reprinted in 1986. 330.1 M86 BHA.

Bharadwaj K [1986], Production and Exchange in Theories of Price Formation in M. Baranzini and R. Scazzieri (eds), Foundations of Economics, Basit Blackwell.

Bharadwaj K [1989], The Formation of Rural Labour Markets: An Analysis with Special Reference to Asia, World Employment Programme Research, Working Papers: WEP10-6/WP98, ILO.

Bharadwaj K and Das P [1975], "Tenurial Conditions and of Exploitation". *EPW*, Annual Number, February and June 20.

Bharadwaj Krishna [1989], On the Formation of the Rural Labour Markets in Rural Asia. Centre for Economic Studies and Planning, Jawaharlal Nehru University, New Delhi – 331.12M 89 BHA.

Bhardwaj, Krishna [1974], *Production Conditions in Indian Agriculture,* Cambridge University Press, Cambridge, New York, U.S.A.

Bhaumik S.K. [1993], *Tenancy Relations and Agrarian Development. A Study of West Bengal*. New Delhi, *SAGE,* 1993.

Bhuiyan M.S.R. and Nandal D.S. [1987], "Tenurials Status of Farm, Resources Endowment, Resource Use and Productive Efficiency in Mymensingh District of Bangladesh", *IJE,* Vol:42(2), April-June.

Birthal Pratap Singh and Singh R.P [1991] "Land- Lease Market, Resource Adujestment and Agricultural Development", *Indian Journal of Agricultural Economics*, Vol. 46, No. 3, PP.361.

Bliss, Christopher.J and Stern, N.H [1982] *Palanpur: The Economy of an Indian Village*. Oxford: Clarendon Press.

Braman A and J.E. Stiglitz [1982], "Sharecropping and the Interlinking of Agrarian markets". *American Economic Review*, Vol: 72, No: 2, PP- 695-715.

Braverman. Avishay and Srinivasan, T.N. [1981] "Credit and Sharecopping in Agrarian Socieites" *Journal of Development Economics*, December, 9:289-312.

Breman, Jan [1974 b], Patronage and Exploitation: Changing Agrarian Relations in South Gujarat, Berkley, CA: *University of California Press.*

Bromlely, Daniel W [1982], "Improving Irrigated Agriculture: Institutional Reform and the Small Farmer". Washington D.C, World Bank Staff Working Paper No.531.

Byres T.J. [1981], "The New Technology, Class Formation and Class Action in the Indian Countryside". *Journal of Peasant Studies,* July, Vol:8.

Byres T.J. [1999], "Rural Labour Relation in India: Persistent Themes, Common Progresses and Differential Outcomes", *The Journal of Peasant Studies*, Vol:26(2&3), Jan & April 1999, PP-10-24.

Chadha G.K. and Bhaumik S.K. [1992] "Changing Tenancy Relations in West Bengal: Popular Notions, Grassroot Realities, *EPW*, Vol:27, No:19, PP-20-21, May-9, PP-16-23.

Chakravarty, Aparajita and Rudra Ashok [1973] "Economic Effects of Tenancy: Some Negative Results", *Economic and Political Weekly*, 8 (July 14): 1234-46.

Chandra N.K., [1974] "Farm Efficiency under Semi-Feudalism: A Critique of Marginalist Theories and Some Marxist Formulations" *Economic and political weekly,* August.

Chandra, Nirmal [1975] "Agrarian Transition in India". *Frontier,* Vol:7, No:28 - 30.

Chaudhuri A and P Maitra [2001] "Tenant Characteristics and the Choice of Tenurial Contracts in Rural India" *Journal of International Development*, Vol: 13(2), PP-169-181.

Chayanov A.V. [1966] The Theory of Peasant Economy Education by Daniel Thorner, Baile Kerblay and R.E.F. Smith, Richard D Frurn, Inc. Homewood, Illinois.

Chenng S.N.S. [1969] "*The Theory of Share Tenancy*" University of Chicago Press. Chicago.

Cheung S.N.S [1969], "Transaction Costs, Risk Aversion and the Choice of Contractual Arrangements" *J.Law Economics*. April 1969, Vol: 12, PP-23-42.

Chistopher J Barrow [2005], *Alternative Irrigation: The Promise of Runoff Agriculture*. Earth Scan Publications Ltd, London.

Cooper C.M. and Clark J.A., [1982], "Employment Economic and Technology": The Impact of Technological Change on the Labour Market. Sussex: *Wheatusheaf Books,* 1982.

Coward E.W.Jr. (ed) [1980] *Irrigation and Agricultural Development in Asia: Perspectives from the Social Sciences*. Cornell University Press. Ithaca.NY. pp. 369.

Daniel Thorner [1956], *The agrarian Prospect in India,* Allied Publishers Pvt. Ltd. New Delhi.

Dantwala M.L., [1987], "Rural Assets Distribution and Composition of Labour Force", *IJAE*, Vol:42(3), July-Sept.

Dasgupta, Biplap [1975] "A Typology of Villages Socio-Economic Systems From Indian Village Studies, *Economic and Political Weekly,* Special Number, August.

Dasgupta, Biplap [1977 a] Village Society and Labour Use, *Oxford University Press*, Delhi.

Detos Angeles Crummett, Maria [1987], "Class Household Structure and the Peasantry: An Empirical Approach" *The Journal of Peasant Studies.* Vol:14, No:3, PP-363-379.

Dev S Mahendra [2003] "Agriculture, Employment and Social Sector Neglected", *Economic and Political Weekly*, Vol. 38, No. 14. PP.1353.

Dhawan B.D [1985] "Labour Absorption in Irrigated Agricuture: The Case of Canal Irrigation in Maharashtra, in Proceeding of the Seminar, Employment Generation Through Improved Irrigation, Indian Water Resource Society, Roorkee, PP.21-22.

Dhawan B.D [1993] *Trends and New Tendencies in Indian Irrigated Agricuture*, Commonwealth Publishers, New Delhi.

Dreze J and A Mukherjee [1987], labour Contracts in Rural India: Theories and Evidence: *Working Paper No:7,* London: London School of Economics, The Development Research Programme.

Dreze, Jan and Mukherjee, An India [1989], Labour Contracts in Rural India: Theories and Evidence in S Chakravarty (ed), The Balance between Industry and Agriculture Economic Development, Vol.III (London:Macmillan).

Dwivedi, Harendranath and Rudra Ashok [1973] "Economic Effects of Tenancy : Some Further Negative Results" *Economic and Political Weekly,* 8 (July 21) : 1291-94.

Ellis F [1986], *Peasant Economic: Farm Households and Agrarian Development*, Cambridge University Press.

Eswan.M and A.Kotwal [1985] "A Theory of Contractual Structure in Agriculture" *American Economic Review*, 75 (3) PP. 352-67.

Eswaran M and A Kotual [1986], "Access to Capital and Agrarian Production Organisation". *Economic Journal*, Vol:96, PP-482-498.

Frykenberg R.E. [1977], *Land Tenure and Peasant in South Asia*. New Delhi, Manohar, 1977.

Gale Johnson [1950], "Resource Allocation Under Share Contracts". *Journal of Political Economy.* Vol: LVIII, April 1950, PP-111-123.

Ghanekar – Kajale, Jayanti, [1999], "Changing Economic Structure and Rural Labour Institutions: Micro Level Evidence from Maharashtra", *The IJLE,* Vol:42(4), Oct-Dec 1999, PP-829-839.

Greene W. H. [1997], *Econometric Analysis*. New Jersey, Prentice Hall.

Greenwald B and J.E. Stiglitz [1986], "Externalities in Economics with Imperfect Information and Incomplete Markets". *Quarterly Journal of Economics.* Vol:101, PP-229-264.

Greenwald B, J.E. Stiglitz and A Weiss [1984], "Informational Imperfections and Macroeconomics Fluctuations". *American Economic Review.* Vol:74, PP-194-199.

Grewal S.S. and P.S. Rangi [1981], "An Analysis of Agrarian Structure in the Punjab" *IJAE,* Vol: 36, No:4, October-December, PP-173-183.

GoAP, (2006) 'Land Committee Report, Submitted to the Government of Andhra Pradesh in 2006 under the Chairmanship of Sri. Koneru Ranga Rao.

Griffin Keith [1979], *The Political Economy of Agrarian Change: An Essay on the Green Revolution.* The Macmillan Press, New York.

Hall, Robert E and Lilien, David, [1979], "Efficient Wage Bargains Under Uncertain Supply and Demand" *AER*, December, 1979, No: 69, PP-868-879.

Hallagam W [1978] "Self Selection by Contractual Choice and the theory of Sharecropping" *Bell Journal of Economics.* Vol:9, No:2, PP-344-354.

Haque T [1996], *Sustainability of Small Holder Agriculture in India,* Concept Publishing Company, New Delhi.

Haque T [2001], Impact of Tenancy Reforms on Productivity Improvements and Socio-Economic Status of Poor Tenants. New Delhi, *NCAEPR, 2001. (Policy Paper 13).*

Haque T and Sirohi A.S. [1986], *Agrarian Reforms and Institutional changes in India*, Concept Publishing Company, New Delhi.

Harris Marshall [1937] "A Suggested Adjustment in the Farm Tenancy System" *Journal of Farm Economics*, Vol: 19. November.

Hayami Y and Godo Y [2005], "Development Economics: From the Poverty to the Wealth of Nations". *Review of Agricultural Economics*, Vol:21, No:1, PP-148-176, 1999.

Hayami Y and M Kikuchi [1981], *Asian Village Economy at the Cross Road: An Economic Approach to Institutional Charge, University of Tokyo Press*, Tokyo.

Hayami Yujiro and Keijuro Otsuka, [1993], *The Economics of Contract Choice: An Agrarian*: Oxford University Press, New York

Hayami Yujirs [1981], "*Understanding Village Community and the Direction of Agrarian Change in Asia*". Hindustan Publishing Corporation, Delhi.

Hayami, Yujiro and Masao Kikuchi [1999], "Technology Market and Community in Contract Choice: Price Harvesting in the Phillipines". *Economic Development and Culture Change*, 47:2, PP-371-386.

Himanshu, [2003], "Changes in Workforce Structure among Social Groups in Rural India", *The IJLE*, Vol:46(4), Oct-Dec 2003, PP-1009-1130.

Hirashima S and Muqtadas, in ed. [1986], "*Hired Labour and Rural Labour Markets in Asia*, ILO, Asia Employment Programme, New Delhi.

Hirschman A O [1958], *The Strategy of Economic Development*, Yale University Press, New Haven.

Hirschman S and M Muqtada [1986], Hired Labour and Rural Labour Markets in Asia: Studies based on Farm-Level Data, Asian Employment Programme, 120/ARTEP, New Delhi.

Holmstron, Bengt, [1981] "Contractual Models of the Labour Market, *AER*, May 1981, No:71, PP-308-313.

Hoppe R and K Wiebe, “Land Ownership and Farm Structure”. Agricultural Resources and Environmental Indicators, 2000. Resources Division, Economic Research Services. U.S. Department of Agriculture, Sept-2000.

Hopper W.D. [1965] “Allocation Efficiency in a Traditional Indian Agriculture” *Journal of Farm Economics*, Vol:47, PP-611-624.

Horden, S. T. B. Shiferaw etat [2001], “Market Imperfections and Land Productivity in the High Lands of Ethopia”, *Journal of Agricultural Economics*, Vol: 52 (3), PP-62-79.

Iqbal Singh [1989], “Reverse Tenancy in Punjab Agricultural: Impact of Technological Change”, *EPW*, June-24.

Islam M.M. and B.N. Banerjee [1987], Tenancy and Resource Use Efficiency in Agriculture. *Mittal Publications*, Delhi.

Jainath M.S. [2002], “Institutional Reforms - A case study of Agricultural Markets in India”, *IJAE*, Vol:57, No:4, PP-535.

Jaynes G.D. [1982] “Production and Distribution in Agrarian Economics” *Oxford Economic Papers* Vol:34, PP-346-367.

Jodha N.S. [1981] “Agricultural Tenancy: Fresh Evidence from Dry Land Areas in India” *EPW* Annual Number. A118-A128.

Joshi P.C. [1978], “Agrarian Structure and Employment: Some Aspects of Historical Experience”, *Economic Political Weekly*, Annual number, February, 1978, PP-315-331.

Kiran Pandya [1996] *Agrarian Structure New Technology and Labour Absorption in Indian Agriculture*. Himalaya Publishing House, Bombay.

Krishna Rao, Y.V [1996] “Re-emergence of Tenancy and Policy Options” in Yugandhar B.N (ed) Land Reforms in India: Andhra Pradesh People’s Pressue and Administrative Innovations, Volume 3, Sage Publication, New Delhi.

Krishnaji N [1980], “Agrarian Structure and Family Formation”. *EPW*, Vol:15, No:13.

Kumar. P and S.D.Chamola [2000] “Emerging Land Lease Market: A Case Study of Haryana” *Indian Journal of Agricultural Economics*, Vol. 55, PP. 55-61. April-June.

Kusum Nair [1983], Transforming Traditionally: Land and Labour Use in Agriculture in Asia and Africa. *Allied Publishers Private Limited.* New Delhi.

Laxminarayan,H and Tyagi S.S [1982] *Changes in Agrarian Structure in India*, Agricole Publishing Academy, New Delhi.

Laxminarayan. H and Tyagi S.S. [1977] “Inter-State Variations in Types of Tenants” *Economic and Political Weekly*, Vol: 12 (39) September, 24, Review of Agriculture.

Leibenstein H [1957], “The Theory of Underemployment in Backward Economics”, *Journal of Political Economy.* Vol:65.

Leibenstein, Haney, [1957], *Economic Backwardness and Economic Growth*: John Wiley and Sons, New York

Lewis, Oscar and V. Barnouw [1956] Caste and the Jajmani System in a North Indian Village, *Scientific Monthly*, Vol. 83, PP. 66-81.

Mani G and V.P. Gandhi [1994] “Are Land Markets Worsening the Land Distribution in Progressive Areas? A Study in Meerut District in western U.P”, *IJAE,* Vol:49, No:3, July-September, PP-330-338.

Marshall Harris [1937], “A Suggested Adjustment in the Farm Tenancy System”. *Journal of Farm Economics.* Vol:19, Nov 1973.

Mazumdar, Dipak [1975] “The Theory of Share Cropping with Labour Market Dualism”, *Economica*, Vol:42, No:167, August, PP-261-271.

Mehra, Shakuntala [1981] Instability in Indian Agriculture in the Context of the New Technology, Research Report No: 25. International Food Policy Research Institute, Washington D.C., U.S.A.

Mukhherjee A and D Ray [1992], “Wages and Involuntary Unemployment in the slack season of a village Economy” *Journal of Development Economics*, Vol:37, PP-227-264.

Murty C. S. [1979], "Backward Castes and Tenancy: A Village Study", *EPW*, July 1979.

Murty C.S. [1987], "Impact of Technological Change on the extent of Tenancy and on Composition of Tenants: A Study in two Delta Villages", *IJAE,* July-September, PP-286-293.

Nabi I [1985] "Rural factor Market Imperfections and the Incidence of Tenancy in Agriculture", *Oxford Economic Papers.* Vol:37, No:2, PP-319-329.

Nadkarni, M.V [1976] "Tenanacy from the Dominant Class: A Developing Contradiction in Land Reforms, *Economic and Political Weekely*, Vol: 11 (52), December 25, Review of Agriculture.

Narain.D. and Roy.S. [1980] Impact of Irrigation and Labour Availability on Multiple Cropping: A Case Study of India. Research Report No:30. Washington, D.C: International Food Policy Reseach Institute.

Narayana D, Nair K.N. [1994], Role of the leading Input in Shaping Institutions: Tenancy in the Context of Irrigation Uncertainity. Thiruvananthapuram: *CDS, 1994, (Working Paper, 260).*

National Sample Survey Organization [1986], Some Aspects of Operational Land Holdings 1981-82, NSS 37th Round, Report Number 331.

National Sample Survey Organization, [1987], A Note on Some Aspects of Ownership Holdings, *Sarvekshana* NSS 37th Round, January –December, 1982, DSMP, vol: 11(2), Issue No: 33, October.

National Sample Survey Organization [1988], "A Note on Some Aspects of Operational Holdings". *Sarvekshana,* NSS 37th Round, January-December, 1982, Department of Statistics, Ministry of Planning, Vol:12(1), Issue No:36, July.

National Sample Survey Organization [1997], *Operational Land Holdings in India*, 1991-1992, Salient Features, NSS 48th Round, NSSO Report No. 407.

National Sample Survey Organization [2006], Some Aspects of Operational Land Holdings in India, 2002-03, NSS 59th Round, Report Number. 492.

Newberg, D.M.G and J.E. Stiglitz [1979] “Share Cropping, Risk Sharing and the Importance of Imperfect Information” in J.A Rumasset, J.M Boussard and I Singh (Eds) 1979, Risk Uncertainty and Agricultural Development, *Agricultural Development Council*, New York U.S.A.

Newberry D. M.G. [1975], “The Choice of Rental Contract in Peasant Agriculture”. In L. G. Reynolds (eds). Agriculture in Development Theory, *Yale University Press,* 1975.

Newbery D.M.G. [1977] “Risk Sharing, Share Cropping and Uncertain Labour Market” *Review of Economic Studies.* Vol:44(3), No:138, PP-586-594.

Otsuka, K.H. Chuma and Y Hayami [1992] “Land and Labour Contracts in Agrarian Economics: Theories and Facts” *Journal of Economic Literature*, Vol:30(4), PP-1965-2018.

Pal, Sarmistha, [1997], “An Analysis of declining incidence of regular Labour Contracts in Rural India”, *Journal of Development Studies,* Vol:34(2), Dec 1997, PP-133-155.

Pandya, Kiran, [1997], “Imperfections in the Labour Market and its Implications for the Labour Absorption in Agriculture”, *The IJLE,* Vol:40(2), April-June 1997, PP-339-345.

Pant C [1981], Tenancy in Semi-Arid Tropical Villages of South India – Determinants and Effects on Cropping Patterns and Input use. Hyderabad: *ICRISAT, (Progress Report, 20*).

Pant C [1983] “Tenancy and Family Resource: A Model and Some Empirical Analysis”, *Journal of Development Economics.* Vol:12, PP-127-139.

Papola T.S., [1999], “Labour Studies in India: Some Reflections on Developments in the Post Independence Period”, *The IJLE,* Vol:42(2), April-June 1999, PP-175.

Parthasarathy G [1991] “Agricultural Tenancy in the 1970’s: A Comment, *Indian Journal of Agricultural Economics*, Vo. 46, No. 1 PP-71.

Parthasarathy G [1991], “Lease Market, Poverty and Policy Options”, *EPW,* Vol: 26, No: 13, PP- A31-A38.

Parthasarathy R, [1997], “Surplus Labour in Agriculture: A Review of Literature and Some Evidence”, *Manpower Journal,* Vol:33(1), April-June 1997, PP1-19.

Parthasarathy.G and B Prasada Rao [1969], “Land Reforms in Andhra Pradesh” (A Study Sponsored by the R.P.C. Planning Commission). Scientific Book Agency 22, Raja Woodmunt Street, Calcutta.

Patnaik, Utsa [1976] “Class Differentiation within the Peasantry: An Approach to Analysis of Indian Agriculture”, *EPW,* Vol.II, No:39, Review of Agriculture, September.

Prasad B.T. [1979], “Caste and Class in Bihar”, *EPW,* Vol:XIV, No:7&8, Annual February, 1979.

Prasad, P.H [1973] “Production Relations: Achilles ’ heel of Indian Planning” *Economic and Political Weekly*, May.

Praveen Kumar and S.D. Chamola [2000], “Emerging Land Lease Market-A Case of Haryana”. *IJAE,* Vol:55, No:1, Jan-March-2000, PP-55-61.

Pushkar Maitra and Ananish Chaudhuri [2002], “On the Choice of Tenancy Contracts in Rural India”, *Economica*, Vol:69, Issue No:275, Month August, Pages-445-459.

Quibrial M.G. and S. Rashid [1984], “The Puzzle of Sharecropping : A Survey of Theories” *World Development.* Vol:12, No:2, PP-103-114.

Rader, Roy, [1970], “Problems in the Theory of Markets Under Uncertainty”, *AER ,No:*60.

Rai K.N, Singh S.P and Goyal K.C, [2000] “Changing Pattern of Tenancy and Its Impact on Productive /Allocative Efficiency”, *Agricultural Situation in India*, Vol. 57, No. 9 PP. 491.

Rainer Schickele [1941], “Effect of Tenure Systems on Agricultural Efficiency”. *Journal of Farm Economics.* Vol:23, February 1941.

Raj K.N. [1970], “Ownership and Distribution of Land”, *Indian Economic Review*, Vol:5, No:1 (New Series).

Raj K.N. [1985], Essays on the Commercialization of Indian Agriculture/Edited by K.N. Raj, Delhi, *Oxford University Press*.

Rajagopalan R and Anuradha B [1987], "Structural Change in Land Holdings of Thanjavur District of Tamil Nadu" *IJAE,* Vol:XVII, No:3, Conference Number, July-September, PP-307-312.

Rakshi M.K. [1982], "The Labour Supply Economy: A Neo-Keynepian Approach", *Delhi, Macmillan.*

Ramchandran, V.K, Vikas Rawal and Madhura Swaminathan [2010] *Socio-Economic Surveys of Three Villages in Andhra Pradesh*, Tulika Books, New Delhi.

Rao C. H. H. [1971], "Uncertainty Entrepreneurship and Sharecropping in India Journal of Political Economy, , Vol:15, 79, PP-580.

Rao, Prasada Macharla, [2004], "Rural Labour Force Quality and Employment: A Case Study of Two Villages in Andhra Pradesh", *The Indian Journal of Labour Economics*, Vol:47(4), Oct-Dec 2004, PP-773-780.

Rao, R.S and M. Bharathi [2010] "Comprehensive Study on Land and Poverty in Andhra Pradesh: A Preliminary Report" in M. Bharathi (ed)., *In Search of Method*, Published by B-1 Collective and Center for Documentation, Reseach and Communication, Hyderabad.

Ray D and A Sen [1992], "On the Economic Theory of Quantity Controls", in K Basu and P Nayak (eds), *Economic Theory and Development* – New Delhi, *Oxford University Press*.

Reddy, V.N, and Murthy C.S [1978] "Backward Castes and Tenancy: A Village Study, *Economic and Political Weekely*, Vol. 13, No. 26.

Reid J.D. [1973], "Sharecropping as an understandable Response: The Post-Bellum South" *The Journal of Economic History,* Vol:33, No:1, March, PP-106-130.

Reid, J.D., Jr. [1976] "Sharecropping and Agricultural Uncertainty" *Economic Developmnet and Cultural Change*, 24, PP. 549-76.

Reid, J.D.,Jr. [1979] "Tenancy in American Histrory", in J.A.Roumasset et at., eds., *Risk Uncertainty and Agricultural Development*. SEARCA, A.D.C. Publication.

Reynolds, Lloyd G [1969], "Economic Development with Surplus Labour: Some Complications", *Oxford Economic Papers,* Vol:21, No:1, March, PP-89-103.

Robert G, Chambers and John Quiggin [2000], Uncertainty, Production, Choice and Agency. The State Contingent Approach, *Cambridge University Press.*

Roderick M. Rejesus [2005], "Share Tenancy, Ownership Structure and Preneuated Planning Claims in Crop Insurance", *American Journal of Agricultural Economics,* Vol:87, No:1, 2005, PP-180.

Rodgers G.B. [1975], Nutritionally-based Wage Determination in the Low Income Labour Market, *Oxford Economic Papers* 27.

Roemer J [1982], A General Theory of Exploitation and Class, Cambridge: *Harvard University Press.*

Ronald Coase [1937] "The Nature of the Firm" *Economic*. 4: PP-386-405.

Rosen, Shezwin [1974] "Hedonic Prices and Implicit Markets: Product Differentiation in Pure Competition", *Journal of Political Economy.* Vol:82, No:1, PP-34-55.

Rosenzweig, M.R. and K.I. Wolpin [1985] "Specific Experience, Household Structure and Intergenerational Transfers: Farm Family Land and Labour Arrangements in Developing Countries", *Quarterly Journal of Economics,* Vol:100, PP-961-987.

Rosenzweig, Mark R [1988], "Risk, Implicit, Contracts and the Family in Rural Areas of Low Income Countries". *Economic Journal,* Vol:98, PP-1148-1170.

Rudra Ashok [1990], "Class Relations in Indian Agriculture" in Utsa Patnaik (ed) 1990, Agrarian Relations and Accumulation Mode of Production Debate in India". *Oxford University Press.* New Delhi.

Rudra, Ashok [1992] *Political Economy of Indian Agriculture*, New Delhi, K.P. Bachi and Company.

Sankar U and Mythili G [1991] "Uncertainty and Farm Productions Decisions". *Himalaya Publishing House,* Bombay.

Sanyal S. K. [1979], “Changing in the Structural Distribution of Land Ownership and Use: A Few Comments”, *IJAE,* Vol: 34, No: 1, Jan-March 1979, PP-101-107.

Sanyal, S.K, [1976], “A Review of the Conceptual Framework of Land Holding Surveys”, *IJAE,* Vol:XXXI, No:3, July-Sept-1976.

Sarap K [1995] “Land Sale Transactions in an Indian village: Theories and Evidence”, *Indian Economic Review,* Vol: 30, No:2, PP-223-240.

Sarap, Kailas, [1981], “On the Operation of the Land Market in backward Agriculture: Evidence from a Village in Orissa. Eastern India”, *Journal of Peasant Studies,* Vol:25(2), Jan 1998, PP-102-130.

Schultz, T.W. [1965], “Transforming Traditional Agriculture”. New Haven: *Yale University*.

Sen A.K. [1966], “Peasants and Dualism with or without Surplus Labour” *Journal of Political Economic,* Vol:74, PP-425-450.

Sen A.K. [1973] *On Economic Inequality*. Oxford Clarendon Press.

Sen A.K. [1983] “Development: Which way now?” *Economic Journal,* Vol:93, PP-742-762.

Sen. A [1981], “Market Failure and Control of Labour Power: Towards an Explanation of Structure and Change in Indian Agriculture Part”, *Cambridge Journal of Economics,* Vol:5, PP-201-228.

Shaban Radwan Ali [1985] “Agricultural Land Tenancy with Endogenous Contracts: A Theoretical and Empirical Investegation” Ph.D, Dissertation Stanford University.

Shankar K [1980], Concealed Tenancy and its Implications for Equity and Economic Growth: A Study of Eastern Uttar Pradesh. New Delhi: 1980.

Sharma and Virendulana [2003], “Functioning of Agriculture Labour Market” Micro Evidence from an Agriculturally Developed Region of Himachal Pradesh”, *Indian Journal of Agricultural Economics,* Vol: 58, No:4, PP-695.

Sharma, H. R. (2006), 'Liberalising the Lease Market', *Economic and Political Weekly*, Vol. XLI, No. 8, pp. 696-698.

Sharma, H. R. (2007), 'Land Distribution and Tenancy among Different Social Groups', *Economic and Political Weekly*, Vol. 42, No. 41, pp. 4183-4185.

Sharma, H. R. (2008), 'Tenancy Relations in India: Legislation, Grassroots Realties and Policy Options', in *Contract Farming and Tenancy Reforms*, R. S. Deshpande (ed), Concept Publishing Company, New Delhi.

Sharma, H.R. [2000] "Tenancy Relations in Rural India: A Temporal and Cross Sectional Analysis", *Indian Journal of Agricultural Economics,* Vol. 55, No. 3. PP. 210-22.

Sharma, H.R. [2006] "Liberalising the Lease Market, *Economic and Political Weekly*. Vol: XLI, No: 8. PP. 696-698.

Shetty S [1988] "Limited Liability, Wealth Differences and the Tenancy Ladder in Agrarian Economics" *Journal of Development Economics,* Vol:29, PP-1-22.

Singh J.P., [1975], "Resource Use, Farm Size and Returns to Scale in a Backward Agriculture", *IJAE,* Vol:XXX, No:2, April-June 1975.

Singh, Balder [1982], *Land Market "Theory and Practice in Rural India*, Agricole Publishing Academy, New Delhi.

Skoufias E [1991] "Land Tenancy and Rural Factor Market Imperfections" Reviewed *Journal of Economic Development,* Vol:16(1), PP-37-55.

Skoufias, E. [1995] "Household Resource, Transactions Costs and Adjustment Through Land Tenancy", *Land Economics*, 71 (1): 42-56.

Skoufias. E, [1996], "Intertemporal Substitution in Labour Supply: Micro Evidence from Rural India", *Journal of Development Economics*. Vol:51(2), Dec 1996, PP-236-237.

Solow, Robert [1990], "The Labour Market as a Social Institution". Cambridge: *Basil Blackwell*.

Smith, Adam[1910], *The Wealth of Nations* Harmondsworth: Penguin Books.

Srivastava, Rave [2000], "Change in Contractual Relations in Land and labour in India". *Indian Journal of Agricultural Economics,* Vol:55, No:3,PP-253-282.

Sreenivasulu (2002**),** Rural Labour Market: Nature of Fragmentation (An Investigation into Kondaiahgaripalli Village), Unpublished M.Phil. Dissertation, Department of Economics, University of Hyderabad.

Stiglitz J.E. [1974], "Alternative Theories of Wage Determination and Unemployment in LDCS: The Labour Turnover Model", *Quarterly Journal of Economics.* May, PP-194-227.

Subramanian S [1984], Production Risks and the Choice of Mode of Tenancy – A Theoritical Note. Madras, *Madras Institute of Development Studies*, 1984, *Working Paper, 40.*

Subramanyam, S [2000] "Agricultural Tenancy in India: Growth Promoting or Growth Retarding", *Artha Vijnana*, Vol. XLII, No. 4, PP-360-66

Sundarayya P [1977], "Class Differentiation of the Peasantry: Results of Rural Surveys in Andhra Pradesh, *Social Scientist,* Nos: 56 and 57, March-April.

Suryawanshi, S.D and Kapa, P.M [1985] "impact of Ghod Irrigation Project on Employment of Female Agricultural Labour, *Indian Journal of Agricultural Economics*, Vol. XL (3).

Swain, Mamata [1999], "Agricultural Tenancy and Interlinked Transactions-1: Neo-Classical and Markist Approaches". *EPW,* Vol:34, No:37 and 38, Sep-11-17 and 18-24.

Swain. M [1997], Agricultural Share Tenancy and Efficiency: Examining Neoclassical and Marxist Approach with Micro-Level Data from Orissa. Ncds, 1997, 43 P (O.P) Occasional Paper, Bhubaneswar, Ncds. Patel B.B, Agricultural Tenancy in Gujarat Magnitude and Paltren SPIESR, 1984.

Swamy Dalip S [1988], "Agricultural Tenancy in the 1980`s", *IJAE* Oct-Dec, Vol:XVII, No:4, PP-555-568.

Taslim M. A. [1989], "Short-Term Leasing, Resource Allocation and Crop-Share Tenancy". *American Journal of Agricultural Economics.* Vol:71, PP-785-790.

Taslim M. A. [1992], “Labour Market Dualism, Threat of Eviction and Crop Share Tenancy”. *Journal of Agricultural Economics.* Vol:43, PP-43-55.

Taslim M.A., [1990], “Leasing Decision of the Farm”, *Atlantic Economic Journal* 18 (June 1990): 95.

Taslim N.A. and E.V. Ahmed [1992] “An Analysis of Land Leasing in Bangladesh Agriculture” *Economic Development and Cultural Change.* Vol:41, No:1, PP-615-628.

Thorner, David and Alice Thorner [1962], Land and Labour in India, *Allied Publishers,* Bombay.

Tyagi D.S. [1981], “Growth of Agricultural Output and Labour Absorption in India”, *Journal of Development studies.* Vol: 18, No: 1, October.

Vaidyanatha A [1978], Labour use in Indian Agriculture: An Analysis Based on Farm Management Survey Data, “Labour Absorption in Indian Agriculture: Some exploratory Investigations International Labour Organisation”, Bangkok.

Vaidyanathan A [1994], “Agrarian Relations in the Context of New Agricultural Technology: An Issues Paper”, *IJAE,* Vol: 49, No:3, July-September, PP-317-321.

Venkateswarlu, [2003], “A Changing Workforce Structure in India and Andhra Pradesh: 1961-2001”, *IJLE,* Vol: 46(4), Oct-Dec 2003, PP-1043-1163.

Verma B.N. and Mishra R.R [1984] “Subsistent Tenancy in a Backward Agrarian Setting: A Case Study of North Bihar, *Social Scientist,* Vol. 12, No. 8, Pp-46.

Vijay R [1992], “Land Market Activity: A Framework” IJAE, Vol: 57, No: 4, PP-714-882.

Vijay, R. and Sreenivasulu, Y. (2005), Household Resources and Factor Markets Adjustment: A Village Economy Investigation, *Indian Journal of Labour Economics*, Vol. 48, No. 1.

Vijay, R. and Sreenivasulu, Y. (2006), A Note on Land Lease as A Constraint to the Formation of the Labour Market, Presented at the National Seminar on *Land Relations*, Sambalpur University, 2006.

Vyas V.S. [1979] "Some Aspects of Structural Change in Indian Agriculture" *IJAE* Vol: 34, No: 1, Jan-March.

Vyas V.S. and Mathai George [1978], "Farm and Non-Farm Employment n Rural Areas", *EPW*, Vol: XII, Annual Number, February 1978.

Wadhwa D.C. [2002] "Guaranteeing Tide to Land: The Only Sensible Solution" *EPW*, Vol:23(50), PP-30-65.

Western, Bruce [1997], *Between Class and Market: Postwar Unionization in the Capitalist Democracies: Princeton* University Press, Princeton.

World Bank [1990], World Development Report, 1990. *Oxford University Press.*

Yoshimori Morooka and Yujiro Hayami [1989], "Contract Choice and Enforcement in an Agrarian Community: Agricultural Tenancy in Upland Java", *Journal of Development Studies.* October 19, PP-28-57.

Young, H Peyton and Mary Burke [2001], "Competition and Custom in Economic Contracts: A Study of Illinois Agriculture". *AER*, 91:3, PP-559-573.

Yugandhar B.N. [1996], *Land Reforms in India: Andhra Pradesh Peoples Pressure and Administrative Innovations*, New Delhi, SAGE.

Yugandhar B.N., Iyer K.G., (eds) [1993], *Land Reforms in India. Bihar: Institutional Constraints*. New Delhi: SAGE.

Yugandhar P.N., [2001], *Land Reforms in India: Intervention for Agrarian Capitalist Transformation in Punjab and Haryana.* New Delhi, SAGE.

APPENDICES

APPENDIX: I
ALTERNATE SECONDARY DATA SOURCES ON LEASE CONTRACTS

Data on the proportion of land under tenancy at the state level are provided by two agencies in India. One is the NSSO which conducts surveys on ownership of land and its agricultural operations. The information is provided in title "the Survey on Land and Livestock Holdings or Some Aspects of Operational Holdings in India". Another available source of data agency is Agricultural census, which is providing same information on land and its agricultural operations. This section, to provide brief information on different NSSO rounds and different Agricultural Census. In addition to provides a bird eye view of the methodology used in two sources and the advantage of using the NSSO rounds for analysis.

National Sample Survey Organisation (NSSO) was set up in 1950 as a permanent survey organization to conduct national sample surveys to assist in socio-economic planning and policy-making. The first round of NSS, covering rural India was conducted during 1950-51. Since then NSSO has been conducting sample surveys on a variety of subjects and the data have been widely used by the Government, social scientists and other users. The National Sample Survey Organisation (NSSO) conducts regular survey on landholding and related matters with the objective of generating basic quantitative information on the agrarian structure of the country. The first survey on landholding was taken up in its eighth round (July 1954-April 1955). A similar survey was also conducted again in the sixteenth round (July 1960-August 1961) and seventieth round (September 1961- July 1962) as part of the Agricultural Census Programme of 1960. Since then, the NSSO has been regularly conducting landholding Survey every 10 years. They are (1) Twenty Sixth round (July 1971-June 1972), (2) Thirty seventh round (January -December 1982), (3) forty-eight round (January- December 1992) and (4). Recent round is 59th (2002-03). These surveys aim to study two important aspects of the agrarian structure of the country. The ownership of land and its agricultural operation. The surveys accordingly collect information that allows the identification of both ownership holdings of land and operational holdings. In the 59th

round, information on various aspects of ownership and operational holdings was collected for both rural and urban areas. Particulars of land owned, land leased out and leased in and types and terms of lease formed the main body of information for the study of ownership holdings. For the operational holdings, data were collected on size, composition, tenurial form, land use, extent of irrigation, fragmentation of holdings, drainage facilities and other related aspects.

The large-scale sample surveys on land holdings have so far been conducted by NSS in its 8th round (1954-55), 16th round (1960-62), 17th round (1971-72), 37th round (1981-82), 48th round (1991-92) and recent round is 59th round (2002-03). NSS Report No. 492 on "Some Aspects of Operational Land Holdings in India, 2002-03" based on the sixth nationwide Land and Livestock Holdings Survey, carried out in the 59th round (January to December, 2003) by the National Sample Survey Organisation (NSSO) in the Ministry of Statistics and Programme Implementation, Government of India, has been released. This is the third in a series of four reports. The report deals with the changes in aggregate characteristics and size distributions of operational holdings over the last four decades. The nature and extent of tenancy, a few aspects of the use of land holdings in terms of agricultural operations carried out in them are also dealt in. Two reports of the survey already released are: "Livestock Ownership Across Operational Land Holding Classes in India, 2002-03", and "Seasonal Variation in the Operational Land Holdings in India, 2002-03".

The Agricultural Census:

The first comprehensive Agricultural Census on complete enumeration basis was conducted with 1970-71 as the reference year by the Ministry of Agriculture, Government of India, by resorting to re-tabulation of data from the land records maintained by the revenue offices. For collection of basic data on structure and other characteristics of agricultural holdings, planning and development purposes, the Govt. of India decided to conduct Agricultural Census from the year 1970-71. In the previous two Agricultural Censuses, namely, 1950 and 1960, data required for the World Agricultural Census were collected through sample survey carried out by the erstwhile Directorate of National Sample Survey (now called

'National Sample Survey Organization') which gave estimates for the country as a whole and for the states. The second Agricultural census was due to be conducted in 1975-76, but had to be postponed due to administrative reasons and this was conducted with 1976-77 as the reference year for data. The third Agricultural census was carried out with the Agricultural year 1980-81 as the reference period. It was undertaken on a complete enumeration basis in all land record states except Himachal Pradesh, Punjab and Rajasthan where it was carried out on a sample basis as in past. The fourth Agricultural census was conducted with the reference year 1985-86. The census was also conducted partly on complete enumeration basis and partly on sample basis. The present Agricultural Census which is fifth in the series was conducted with the reference year 1990-90. Since then Agricultural Censuses have been conducted by the Ministry of Agriculture quinquenally. The particulars of operational holdings formed the core of all the four large-scale sample surveys on land holdings as well as of Agricultural Censuses so far conducted.

The data on the number and area of operational holdings according to different size-classes and social groups would be collected and compelled on complete enumeration basis through retabulation of information available in the village land records. This would imply covering all the survey numbers within each village and preparing a list of operational holdings there from. The operational holding is the basic unit of enumeration. The holding of the land who actually cultivate the land and not the owner, is the unit for collection of data, some holdings may not be complete within the village and they may be spread over to other villages. For preparation of a list of operational holdings, necessary matching of the part-holdings has to be done. A holding may cut across the boundary of a village/patwari circle/ Revenue Inspector circle/ District / State. As in the previous census, the Mandal will be the outer limit for pooling of all the parcels of an operational holding. For the purpose of pooling of part holdings, the criteria that has to be adopted is the resident operational holder, but this will be applicable only to those who are residing within the Mandal. If the operator is residing outside, the Mandal, then for the purpose of the census he will be considered as redident operator and his holding in the village will be treated as a separate operational holding. For collection of other data viz.,

i). distribution of holdings according to the tenancy status

ii). Area under different land uses

iii). Distribution of holdings according to irrigation status

iv). Area irrigated source wise and

v). area under principal crops, are collected from those 20 per cent villages selected randomly would constitute the base. In these villages, information relating to the above characteristics would be complied from the relevant Khatauni and Khasra in respect of all the resident cultivators. Resident cultivators of urban areas will also be covered.

Comparisons of NSSO and Agricultural Census:

The comparative study of the results of land holding surveys of NSS with those of Agricultural Censuses it is desirable to examine the reference periods, methodology of collection of data, concepts and definitions adopted by the two agencies. Although the reference periods of the 26th round of NSS and the Fist Agricultural Census were exactly the same, the reference periods of 37th round of NSS and the third Agricultural Census were not so. The reference period of the former was the major crop season of the Agricultural year 1981-82 while that of the latter was the agricultural year 1980-81. Nevertheless, the reference periods being close to each other and being more or less normal agricultural years, the results obtained from the two sources may be regarded as comparable. The land holding survey of 37th round was in the nature of a repeat survey of the 26th round survey with some modification in items coverage and method of collection of data. Thus the concepts and definitions employed in the 37th round were in fact, same as those in the 26th round. The 37th round survey made provision to collect information on operational holdings separately for the Kharif and Rabi seasons of the Agricultural year 1981-82 at the end of each season by making two visits to every sample household at an interval of nearly six months. The data for the kharif season of 1981-82 were collected in the first visit to the sample households during January to June 1982 while the information for the Rabi season of 1981-82 was obtained through a revisit to the same households during July to December 1982. In the 37th round also, data were collected for both the seasons. Since particulars for each season were collected, for avoiding duplication the plots possessed by a household during the major part of a season were included in the operational holding reported by the respective household

during the season. Along with the season wise information, data were also collected in respect of the major crop season of the locality from each sample household. From the two sets of season wise data, one relating to the holdings operated during the major crop season was considered for tabulation. Such estimates would relate to the major crop season of the Agricultural year 1981-82. It may be mentioned here that the land holdings survey of the NSS 37th round covered all the main items of information of operational holdings as collected in the 26th round excluding, however, the information on the use of fertilizers and pesticides and area under different crops.

As distinct form the household enquiry method adopted by the NSS, in the Agricultural Census, data on operational holdings were compiled from the land records in the areas where such data were available on complete enumeration basis. For the other parts of the country, however, in absence of suitable records the relevant data were collected by interviewing the households on a sample basis. But in the major part of the country the enumeration through re-tabulation of existing land records constituted the basis for the Agricultural Census. In the Agricultural censuses, as against the interview method adopted by the NSS, the Patwaries were required to go through the Khasra registers, i.e. land records maintained by the Revenue Agencies and provide the relevant information. In the Khasra form, the name of the owner, name of the cultivator, his/her residence, type of tenure and details of area cultivated and irrigated etc., are recorded separately for two seasons, Kharif and Rabi for each survey/ sub-survey number. For the Agricultural censuses the Patwaris were required to note down the name of the cultivator against each survey/sub-survey number from the khasra registers and piece together the plots cultivated by the same cultivator. Through this procedure of re-tabulation of available data emerged the basic list of operational holdings. Between the two Agricultural Censuses under examination, i.e., first and third in 1970-71 and 1980-81 respectively, there is no major difference either in the methodology or in the concepts and definitions. However, in the third Agricultural Censuses owing to non-cooperation of Patwares in three states where comprehensive land records exist, viz. Punjab, Himachal Pradesh and Rajasthan, the data on operational holdings were collected on a sample basis, through household enquiry method in Punjab and through re-tabulation method in the other two states. At the all India level, the figure of Agricultural

Census 1980-81 for the percentage of holdings leasing-in land was only 3.7 claiming only 1.4 per cent of the operated area. While the respective estimates of NSS 37th round were 15.85 and 7.18 per cent. Since unrecorded tenancy is prevalent in the country to a large extent, the Agricultural Census by the method of re-tabulation of village records could, perhaps, obtain information for the 'recorded' part only.

The estimates of the agricultural census and of the NSS data both are quite different (Laxminarayana and Tyagi (1977). Some more information of the study and its implication of source is useful. All India level, trends of variation in tenancy have been discussed by Sundaram (1968) and Laxminarayan and Tyagi (1977). Laxminarayan and Tyagi examined the inter-state variations in tenancy, basing on a comparative examination of three different sources of data, namely Agricultural Census, National Sample Survey (NSS) and village surveys. Their examination has led the authors to observe that the various estimates of tenancy emerging from these three independent sources are rather conflicting, some times to a marked degree and that the data from the village studies are more reliable them the other two sources.. Given the context of protective tenancy legislations in states, there would be under reporting of tenancy in the two sources of data but the errors generated in NSSO might be less when compared to the agricultural census. Given the data collection process of Agricultural Census which is the patwari, an agent of the state, who is well informed about the protective legislation would under report the extent of land under tenancy which may not be the case when the individual (specifically the leasing in agent) revealing information of the amount of land leased in. For the purpose of analysis here, the available data of National Sample Survey for the years 1981-82, 1991-92, and 2002-03 have been used. The relevant NSSO rounds before 1981-82 are not considered for the analysis. The basic for taking the 1981-2 as the cut off point is that the 1970's are one period in the Indian history which witnessed large scale legislations related to tenancy and so a comparison of pre-post tenancy legislation gets influenced by the response of the agents to the legislations and the 'will' of the state machinery to implement the legislations.

Definition of terms used in "land Operated" by NSSO

Ownership of land: i). A plot of land was considered to be owned by a household if permanent heritable possession, with or without the right to transfer the title was vested in a member or members of the household. Land held in owner-like possession under long term lease or assignment was also considered as land owned. Thus, in determining the ownership of a plot of land two basic concepts were involved, namely,

a). land owned by the household, i.e. land on which the household had the right of permanent heritable possession with or without the right to transfer the title, e.g.Pattadars, Bhumidars, Jenmons, Bhumiswamis, Rayat Sithibans, etc. A plot of land may be leased out to others by the owner without losing the right of permanent heritable possession.

b). land held under special conditions such that the holder did not possess the title of ownership but the right for long term possession of the land (for example, land possessed under perpetual lease, hereditary tenure and long term lease for 30 years or more) was considered as being held under owner-like possession. In states where land reform legislation has provided for full proprietorship to erstwhile tenants, they were considered as having owner-like possession, even if they had not paid the full compensation.

ii). Sometimes a plot may be possessed by a tribal in accordance with traditional tribal rights from local chieftains or village/district council. Again, a plot may be occupied by a tenant while the right of ownership vests in the community. In both the cases, the tribal or the other individual (tenant) was taken as owner, for in all such cases, the holder had the owner like possession of land in question.

Operational Holdings: An operational holding is defined as a techno-economic unit used wholly or partly for agricultural production and operated (directed/managed) by one person alone or with the assistance of others, without regard to title, size or location. The holding might consist of one or more parcels of land, provide they are located within the country and form part of the same technical unit. In the context of agricultural operations, a technical unit is a unit with more or less independent technical resources covering items like land, agricultural equipments and machinery, draught animals etc. Holdings used exclusively for livestock and poultry raising and for production of livestock and poultry products (primary)

and / or pisciculture are considered as operational holdings whereas holdings put exclusively to uses other than agricultural production are not considered as operational holdings. Holdings operated by co operative farms are also not considered as operational holdings.

Individual and Joint holdings: An operational holding managed by the members of a single household is taken as an individual holding and a holding managed by members of different households jointly is considered a joint holding.

Otherwise possessed land: this was understood to mean all public/institutional land possessed by the household without title of ownership or occupancy right. The possession was without the consent of the owner. Private land (i.e. land owned by the household sector) possessed by a household without title of ownership and occupancy right was not included in this category. As in the 37th round survey, all private land encroached upon by the household was treated as leased-in land.

Homestead land: (i) Homestead of a household was defined as the dwelling house of the household together with the courtyard, compound, garden, out-house, place of worship, family graveyard, guest house, shop, workshop and offices for running household enterprises, tanks, wells annexed to the dwelling house. All land coming under homestead was defined a homestead land.

(ii). Homestead may constitute only a part of a plot. Sometimes, gardens orchards or plantations, though adjacent to the homestead and lying within the boundary walls, may be located on a clearly distinct piece of land. In such cases, land under garden, orchard or plantation was not considered as homestead land.

Extent of Leased-in Land:

According to NSSO, the lease – out land is defined as the "land given to others on rent or free by owner of the land without surrendering the right of permanent heritable possession is defined as land leased –out (the NSS report no. 492 title is " Some Aspects of Operational Land Holdings in India, 2002-03" pp. 7). The lease – in land is defined as "if it is taken by a household on rent or free without any right of permanent or heritable possession". The lease contract may be a written one or an oral. According to the Tenancy Amendment Act 39 of 1974, the cultivating tenant means "a person who cultivates by his own labour or by that of any other members of his family or by hired labour under his supervision and control any land belonging to another under a tenancy agreement, express

or implied but does not include a mere intermediary" (NSS Report No. 492, 2002-03, pp.7). The definitions on lease of land is same in the three rounds (26th. 37th and 59th rounds).Tenancy is usually measure in two ways; one is the proportion of tenants to total cultivators and second is the proportion of area under tenancy to total cultivated area. The study can looks into the proportion of tenants as well as the proportions of area under tenancy.

Terms of Lease

Leasehold under crop-sharing basis means that the owner of land receives a stipulated share of the produce but does not participate in the work, nor does he manage or direct or organize the agricultural operations on the plot of land that he has leased-out. Land is considered as leased under service contract if an employer gives some land to an employee for cultivation in lieu of the services provided by him under the condition that the land can be retained so long as the employee continues to serve the employer, and no other specific terms of lease are contracted. Where 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. Sometimes, land owned by a household is looked after and operated by a close relative. For example, a person staying away from his village may own a piece of land in the village that is looked after and used by his brother's household. All such land owned by the household but looked after and used by some relative's household, under no contract of payment of any kind to the owner, is treated as leasing –out to 'relatives under no specified terms,. All rent-free leases, other than to (or from) 'relatives under no specified terms', are considered lease 'under other terms'.

The data on forms of tenancy i.e., terms of lease was published by NSSO for 1981-82, 1991-92 and 2002-03. The term of lease for each round was expanded and they are presented in the following statement. Leasing of land is contracted by two parties under certain terms of lease that are binding on both parties. In the present survey, data were collected for the following specific terms of lease. Terms of lease of for leased-in area in 26th, 37th and 48th Rounds:

Table-1: NSSO Considering Specific Terms of Lease in Different Rounds i.e. 1981-82 (37th round), 1991-92 (48th round) and 2002-03 (59th round).

1981-82 (37th Round)	1991-92 (48th Rounds)	2002-03 (59th round)
1.Fixed money 2.Fixed produce 3.Share of produce 4.Usufructury mortgage 5.Share of produce with other terms 6. other terms 7. Not recorded (n.r) 8.Neither owned nor leased in (but occupied)	1.Fixed money 2.Fixed produce 3.Share of produce 4.Usufructury mortgage 5.Share of produce with other terms 6.Service contract 7.From relatives: no specified terms 8.Other terms 9.Not recorded (n.r)	1.Fixed money 2.Fixed produce 3.Shae of produce 4.Under service contract 5.share of produce together with other terms 6.Under usufructurary mortgage 7.form relatives under not specific terms. 8. other terms. 9. Not recorded (n,r)

Source: Based on 37th , 48th and 59th Rounds of NSSO, Govt. of India Report No: 331, 407 and 492.

The NSS rounds 8th, 17th and 26th have been shown that leased –in land constituted only 5 terms like fixed money, fixed produce, share of produce, usufructuary mortgage and other terms. Before assessing the extent of leases under different terms it is necessary to mention a striking feature of above table. The percentage of area leased-in under' not recorded terms' measured separately from 1981-82 on wards which is still a prevalent practice in rural India. Estimates of leased-in area under 'not recorded terms' are not available for the earlier rounds viz.,8th ,17th and 26th. But that the percentage of leased-in area under 'other terms' in these rounds which definite terms could not be specified were all included under 'other terms' in 8th, 17th, and 26th rounds. The statement shows that "other terms" in each round are different. For easy grasp and comparative purpose, it is preferred to keep the first three terms separately while the remaining terms in each round (except item 8 in 1981-82) are clubbed together under the category of "other terms". Item 8 in 1981-82 is not taken into consideration because it was shown separately from the actual leased-in area (Chadha and Sharma, 1992). It may be noted here that leasehold under crop-sharing basis means the owner of land received a stipulated share of the produce but he did not participate in the work nor did he manage or direct or organizes the agricultural operations on the plot of land which he had leased out. Leasehold under service contract means that an employer give some land to employee for cultivation in lieu of the services provided by him/her under the condition that the land can retained so long as the employee continued to serve the

employer and no other specific terms of lease is contracted. The term by which the mortgagor retains the ownership of land till the foreclosure of the deed but the possession of the land was transferred to the mortgagee would be considered as leasing-out under usufructuary mortgage. Sometimes land owned by a household is looked after and used by some close relative. For example, a person staying away from his village may own a piece of land in his village which may be used by his brother's household. All such type of land owned by one household but cultivated by some relative's household, under no contract of payment of any kind to the owners, are treated as lease-out to relatives under no specified terms. Lease on terms other than those specified for types 1 to 6 which are like under service contract, share of produce together with other terms, under usufructurary mortgage, from relatives under not specific terms, others and not recorded (n.r) stated above was treated as under other terms. All rent free leases, other than to relatives under no specified terms, are treated as lease under other terms.

The terms of lease for each round was expanded and different. For easy grasp and comparative purpose, it is preferred to keep the first three terms separately while the remaining terms in each round are clubbed together under category 'other terms'. Different tenancy contracts have been clubbed under four major heads like fixed money, fixed produce, share of produce and other terms. Thus, in the 37^{th} round, 'other terms' includes holdings and area operated under usufructuary mortgage. The new terms of tenancy introduced in the 37^{th} 48^{th} and 59^{th} rounds including usufructuray mortgage, was clubbed with other terms to ensure temporal comparability.

APPENDIX II: (Tables related to 4th chapter)

Table: 1: Different Crops Being Cultivating in Acres by Different Caste and Class in the Study Villages

Villages	Caste	Crops	Poor Peasants	Middle Peasants	Rich Peasants	Non-Cultivating Household	Total
	Mala	Paddy	4.05 (7.6)	2.13 (4)	2.13 (4)	0.00 (0)	8.32 (15.6)
	BCs and Ocs	Paddy	10.93 (20.5)	27.41 (51.4)	40.00 (75)	13.33 (25)	91.68 (171.9)
Mentipaudi	Total Area		14.99 (28.1)	29.55 (55.4)	42.13 (79)	13.33 (25)	100.00 (187.5)
	Mala	Paddy	16.94 (46.2)	1.83 (5)	0.00 (0)	0.00 (0)	18.77 (51.2)
	BCs and Ocs	Paddy	33.25 (90.7)	38.44 (104.85)	9.53 (26)	0.00 (0)	81.23 (221.55)
Kothapalli	Total Area		50.19 (136.9)	40.27 (109.85)	9.53 (26)	0.00 (0)	100.00 (272.75)
		paddy	4.54 (16.5)	11.90 (43.24)	7.16 (26)	2.20 (8)	25.81 (93.74)
		Tobacco	1.65 (6)	17.62 (64)	38.95 (141.5)	1.10 (4)	59.33 (215.5)
		Maize	3.30 (12)	1.38 (5)	0.00 (0)	0.00 (0)	4.68 (17)
	BCs and Ocs	S.cane	0.28 (1)	3.58 (13)	6.33 (23)	0.00 (0)	10.19 (37)
Seethampet	Total Area		9.77 (35.5)	34.48 (125.24)	52.44 (190.5)	3.30 (12)	100.00 (363.24)
	Mala	Paddy	0.07 (0.5)	0.00 (0)	0.00 (0)	0.00 (0)	0.07 (0.5)
		Paddy	1.59 (11)	0.00 (0)	0.00 (0)	0.00 (0)	1.59 (11)
		Jower	0.87 (6)	0.00 (0)	0.00 (0)	0.00 (0)	0.87 (6)
	Madiga	Castorl	1.30 (9)	0.00 (0)	0.00 (0)	0.00 (0)	1.30 (9)
	Schedule Traibs	Paddy	0.51 (3.5)	0.00 (0)	0.00 (0)	0.00 (0)	0.51 (3.5)
		Paddy	16.34 (112.75)	43.24 (298.45)	10.58 (73)	5.51 (38)	75.66 (522.2)
		Jower	5.22 (36)	3.48 (24)	0.00 (0)	0.00 (0)	8.69 (60)
	BCs and Ocs	Castorl	5.65 (39)	5.65 (39)	0.00 (0)	0.00 (0)	11.30 (78)
Arepalli	Total Area		25.21 (174)	16.08 (111)	21.15 (146)	11.01 (76)	100.00 (690.2)

Table: 1 Contd ……

Villages	Caste	Crops	Poor Peasants	Middle Peasants	Rich Peasants	Non-Cultivating Household	Total
	Mala	Jower	0.33 (2)	0.00 (0)	0.00 (0)	0.00 (0)	0.33 (2)
		Castorl	0.33 (2)	0.00 (0)	0.00 (0)	0.00 (0)	0.33 (2)
	Madiga	Paddy	0.00 (0)	0.33 (2)	0.00 (0)	0.00 (0)	0.33 (2)
		Jower	4.30 (26.2)	0.82 (5)	0.00 (0)	0.00 (0)	5.12 (31.2)
		Grams	0.16 (1)	1.31 (8)	0.00 (0)	0.00 (0)	1.48 (9)
		Castorl	2.71 (16.5)	0.66 (4)	0.00 (0)	0.00 (0)	3.36 (20.5)
		Jower	0.82 (5)	0.00 (0)	0.00 (0)	0.00 (0)	0.82 (5)
		Castorl	0.66 (4)	0.00 (0)	0.00 (0)	0.00 (0)	0.66 (4)
	BCs and Ocs	Paddy	3.36 (20.5)	3.94 (24)	1.48 (9)	0.00 (0)	8.78 (53.5)
		Maize	0.41 (2.5)	0.66 (4)	0.00 (0)	0.00 (0)	1.07 (6.5)
		Jower	28.36 (172.9)	12.14 (74)	1.80 (11)	0.00 (0)	42.31 (257.9)
		Grams	1.80 (11)	1.80 (11)	1.48 (9)	0.00 (0)	5.09 (31)
		Castorl	17.80 (108.5)	10.50 (64)	1.97 (12)	0.00 (0)	30.27 (184.5)
		Mirchy	0.08 (0.5)	0.00 (0)	0.00 (0)	0.00 (0)	0.08 (0.5)
Tatiparthy	Total Area		61.12 (372.6)	32.15 (196)	6.73 (41)	0.00 (0)	100.00 (609.6)
	Mala	Paddy	4.44 (8.08)	2.47 (4.5)	0.00 (0)	0.00 (0)	6.91 (12.58)
		Maize	1.09 (1.98)	0.27 (0.5)	0.00 (0)	0.00 (0)	1.36 (2.48)
		Turmeric	0.27 (0.5)	0.00 (0)	0.00 (0)	0.00 (0)	0.27 (0.5)
	Madiga	Paddy	4.31 (7.84)	3.01 (5.48)	0.00 (0)	0.00 (0)	7.32 (13.32)
		Maize	0.08 (0.15)	1.18 (2.15)	0.00 (0)	0.00 (0)	1.26 (2.3)
Chinnapur	Madiga	Turmeric	0.11 (0.2)	0.00 (0)	0.00 (0)	0.00 (0)	0.11 (0.2)

Table: 1 Contd ……

Villages	Caste	Crops	Poor Peasants	Middle Peasants	Rich Peasants	Non-Cultivating Household	Total
Chinapur		Castorl	0.27 (0.5)	0.27 (0.5)	0.00 (0)	0.00 (0)	0.55 (1)
	BCs and Ocs	Paddy	9.71 (17.67)	31.55 57.42)	13.19 (24)	7.83 (14.25)	62.28 (113.34)
		Maize	4.33 (7.88)	10.37 (18.88)	0.21 (0.38)	1.24 (2.25)	16.15 (29.39)
		Turmeric	0.48 (0.88)	0.27 (0.5)	0.00 (0)	0.00 (0)	0.76 (1.38)
		Castorl	0.14 (0.25)	1.79 (3.25)	0.00 (0)	0.00 (0)	1.92 (3.5)
		Mirchy	1.10 (2)	0.00 (0)	0.00 (0)	0.00 (0)	1.10 (2)
	Total Area		26.34 (47.93)	51.20 (93.18)	13.40 (24.38)	9.07 (16.5)	100.00 (181.99)
Nagaram	Mala	Paddy	0.50 (1.5)	0.00 (0)	0.00 (0)	0.00 (0)	0.50 (1.5)
		Maize	0.25 (0.75)	0.00 (0)	0.00 (0)	0.00 (0)	0.25 (0.75)
		Turmeric	3.51 (10.5)	0.00 (0)	0.00 (0)	0.00 (0)	3.51 (10.5)
		Grams	1.00 (3)	0.00 (0)	0.00 (0)	0.00 (0)	1.00 (3)
	Madiga	Paddy	0.17 (0.5)	0.00 (0)	0.00 (0)	0.00 (0)	0.17 (0.5)
		Maize	1.19 (3.55)	0.00 (0)	0.00 (0)	0.00 (0)	1.19 (3.55)
		Turmeric	0.59 (1.75)	0.00 (0)	0.00 (0)	0.00 (0)	0.59 (1.75)
		Grams	0.17 (0.5)	0.00 (0)	0.00 (0)	0.00 (0)	0.17 (0.5)
		Mirchy	0.21 (0.63)	0.00 (0)	0.00 (0)	0.00 (0)	0.21 (0.63)
	BCs and Ocs	Paddy	13.18 (39.4)	17.73 (53)	15.15 (45.3)	2.09 (6.25)	48.15 (143.95)
		Maize	3.76 (11.24)	4.28 (12.8)	3.68 (11)	0.50 (1.5)	12.22 (36.54)
		Turmeric	4.71 (14.09)	9.06 (27.1)	4.52 (13.5)	1.00 (3)	19.30 (57.69)
		Grams	1.67 (5)	1.34 (4)	0.84 (2.5)	1.00 (3)	4.85 (14.5)
		Mirchy	2.34 (7)	3.21 (9.6)	2.34 (7)	0.00 (0)	7.89 (23.6)
	Total Area		33.25 (99.41)	35.62 (106.5)	26.53 (79.3)	4.60 (13.75)	100.00 (298.96)

Table: 1 Contd ……

Villages	Caste	Crops	Poor Peasants	Middle Peasants	Rich Peasants	Non-Cultivating Household	Total
	BCs and Ocs	Paddy	45.05 (87.35)	38.50 (74.65)	13.25 (25.7)	3.20 (6.2)	100.00 (193.9)
Jonanki	Total Area		45.05 (87.35)	38.50 (74.65)	13.25 (25.7)	3.20 (6.2)	100.00 (193.9)
		Paddy	3.84 (7.99)	0.00 (0)	0.00 (0)	0.00 (0)	3.84 (7.99)
		Grams	0.79 (1.65)	0.00 (0)	0.00 (0)	0.00 (0)	0.79 (1.65)
	Mala	Mirchy	0.48 (0.99)	0.00 (0)	0.00 (0)	0.00 (0)	0.48 (0.99)
		Paddy	11.96 (24.86)	27.42 (57)	23.09 (48)	5.29 (11)	67.77 (140.86)
		Grams	0.91 (1.9)	3.03 (6.3)	6.25 (13)	0.00 (0)	10.20 (21.2)
	BCs and Ocs	Mirchy	1.44 (3)	6.33 (13.15)	9.14 (19)	0.00 (0)	16.91 (35.15)
	Total Area		19.43 (40.39)	36.78 (76.45)	38.49 (80)	5.29 (11)	100.00 (207.84)
B.Koduru							
		Paddy	2.39 (71.87)	0.45 (13.5)	0.13 (4)	0.00 (0)	2.97 (89.37)
		Maize	0.09 (2.73)	0.02 (0.5)	0.00 (0)	0.00 (0)	0.11 (3.23)
		Jower	0.07 (2)	0.00 (0)	0.00 (0)	0.00 (0)	0.07 (2)
		Turmeric	0.37 (11)	0.00 (0)	0.00 (0)	0.00 (0)	0.37 (11)
		Grams	0.15 (4.65)	0.00 (0)	0.00 (0)	0.00 (0)	0.15 (4.65)
		Castorl	0.07 (2)	0.00 (0)	0.00 (0)	0.00 (0)	0.07 (2)
	Mala	Mirchy	0.03 0.99)	0.00 (0)	0.00 (0)	0.00 (0)	0.03 (0.99)
		Paddy	0.64 (19.34)	0.25 (7.48)	0.00 (0)	0.00 (0)	0.89 (26.82)
		Maize	0.12 (3.7)	0.07 (2.15)	0.00 (0)	0.00 (0)	0.19 (5.85)
		Jower	1.07 (32.2)	0.17 (5)	0.00 (0)	0.00 (0)	1.24 (37.2)
		Turmeric	0.06 (1.95)	0.00 (0)	0.00 (0)	0.00 (0)	0.06 (1.95
		Grams	0.05 (1.5)	0.27 (8)	0.00 (0)	0.00 (0)	0.32 (9.5)
Total	Madiga	Castorl	0.86 (26)	0.15 (4.5)	0.00 (0)	0.00 (0)	1.01 (30.5)

Table: 1 Contd ……

Villages	Caste	Crops	Poor Peasants	Middle Peasants	Rich Peasants	Non-Cultivating Household	Total
Total		Mirchy	0.02 (0.63)	0.00 (0)	0.00 (0)	0.00 (0)	0.02 (0.63)
	Schedule Traibs	Paddy	0.12 (3.5)	0.00 (0)	0.00 (0)	0.00 (0)	0.12 (3.5)
		Jower	0.17 (5)	0.00 (0)	0.00 (0)	0.00 (0)	0.17 (5)
		Castorl	0.13 (4)	0.00 (0)	0.00 (0)	0.00 (0)	0.13 (4)
	BCs and Ocs	Paddy	14.31 (430.23)	25.42 (764.01)	11.71 (352)	3.62 (108.7)	55.05 (1654.94)
		Tobacco	0.20 (6)	2.13 (64)	4.71 (141.5)	0.13 (4)	7.17 (215.5)
		Maize	1.12 (33.62)	1.35 (40.68)	0.38 (11.38)	0.12 (3.75)	2.98 (89.43)
		Jower	6.95 (208.9)	3.26 (98)	0.37 (11)	0.00 (0)	10.58 (317.9)
		Turmeric	0.50 (14.97)	0.92 (27.6)	0.45 (13.5)	0.10 (3)	1.97 (59.07)
		Grams	0.60 17.9)	0.71 (21.3)	0.82 (24.5)	0.10 (3)	2.22 (66.7)
		Castorl	4.92 (147.75)	3.53 (106.25)	0.40 (12)	0.00 (0)	8.85 (266)
		Mirchy	0.42 (12.5)	0.76 (22.75)	0.86 (26)	0.00 (0)	2.04 (61.25)
		S.cane	0.03 (1)	0.43 (13)	0.77 (23)	0.00 (0)	1.23 (37)
Grand Total			35.46 (1065.93)	39.88 (1198.72)	20.59 (618.88)	4.07 (122.45)	100.00 (3005.98)

Source: Field Survey

Note: Figures in Brackets is indicate percentages

Table- 2: Different Sources of Irrigation Available for Cultivable Lands in Terms of Caste and Class Wise Across the Study Villages.

Villages	Caste	Irrigation Source	Poor Peasants	Middle Peasants	Rich Peasants	Non-cultivating Household	Total
Mentipudi	Schedule Caste	Canal	3.89 (4.6)	3.38 (4)	3.38 (4)	0.00 (0)	10.66 (12.6)
	BC and Ocs	Canal	2.62 (3.1)	22.03 (26.05)	30.87 (36.5)	33.83 (40)	89.34 (105.65)
	Total		6.51 (7.7)	25.41 (30.05)	34.25 (40.5)	33.83 (40)	100.00 (118.25)
Kothaplli	Schedule Caste	Canal	2.11 (2.5)	4.23 (5)	0.00 (0)	2.11 (2.5)	8.46 (10)
	BC and Ocs	Canal	12.09 (14.3)	59.70 (70.6)	15.22 (18)	13.53 (16)	100.55 (118.9)
	Total		13.03 (16.8)	58.65 (75.6)	13.96 (18)	14.35 (18.5)	100.00 (128.9)
Seethampet	BC and Ocs	Well	31.75 (425.94)	32.33 (433.72)	25.62 (343.73)	4.55 (61)	94.51 (1267.89)
		Tank	0.74 (9.89)	0.15 (2)	0.37 (5)	0.07 (1)	1.33 (17.89)
		No Irri	0.35 (4.7)	0.83 (11.09)	2.68 (36)	0.22 (3)	4.16 (55.79)
	Total		32.84 (440.53)	33.31 (446.81)	28.68 (384.73)	4.85 (65)	100.00 (1341.57)
Arepalli	Schedule Caste	Canal	1.74 (17.25)	0.00 (0)	0.00 (0)	0.00 (0)	1.74 (17.25)
		Well	0.33 (3.25)	0.00 (0)	0.00 (0)	0.00 (0)	0.33 (3.25)
		No Irri	0.99 (9.75)	0.00 (0)	0.00 (0)	0.00 (0)	1.01 (10)
	Schedule Tribe	Canal	0.20 (2)	0.00 (0)	0.00 (0)	0.00 (0)	0.20 (2)
		No Irri	0.86 (8.5)	0.00 (0)	0.00 (0)	0.00 (0)	0.86 (8.5)
	BC and Ocs	Canal	15.06 (149)	26.73 (264.5)	1.82 (18)	2.32 (23)	46.13 (456.5)
		Well	0.61 (6)	2.78 (27.5)	0.00 (0)	3.69 (36.5)	7.07 (70)
		Tank	3.23 (31.95)	13.26 (131.25)	6.87 (68)	3.44 (34)	26.80 (265.2)
		No Irri	4.24 (42)	9.25 (91.5)	0.30 (3)	1.47 (14.5)	15.86 (157)
	Total		27.25 (269.7)	52.01 (514.75)	8.99 (89)	10.91 (108)	100.00 (989.7)

Table-2: Contd…..

Villages	Caste	Irrigation Source	Poor Peasants	Middle Peasants	Rich Peasants	Non-cultivating Household	Total
Tatiparthy	Schedule Caste	Well	0.13 (1)	0.00 (0)	0.00 (0)	0.00 (0)	0.13 (1)
		Tank	0.74 (5.5)	0.00 (0)	0.00 (0)	0.00 (0)	0.74 (5.5)
		No Irri	7.99 (59.32)	2.96 (22)	0.00 (0)	0.00 (0)	12.78 (94.82)
	Schedule Tribe	Well	0.27 (2)	0.00 (0)	0.00 (0)	0.00 (0)	0.27 (2)
		No Irri	0.54 (4)	0.00 (0)	0.00 (0)	0.00 (0)	0.54 (4)
	BC and Ocs	Well	11.76 (87.25)	9.57 (71)	2.16 16)	0.00 (0)	23.48 (174.25)
		Tank	1.83 (13.6)	1.35 (10)	0.00 (0)	0.00 (0)	3.18 (23.6)
		No Irri	40.68 (301.9)	17.25 (128)	0.00 (0)	0.00 (0)	58.88 (436.9)
	Total		63.95 (474.57)	31.13 (231)	2.16 (16)	0.00 (0)	100.00 (742.07)
Chinnapur	Schedule Caste	Canal	3.04 (8.1)	5.63 (15)	0.75 (2)	0.38 (1)	9.80 (26.1)
		Well	1.01 (2.7)	0.00 (0)	0.00 (0)	0.00 (0)	1.01 (2.7)
		Tank	0.41 (1.1)	0.00 (0)	0.00 (0)	0.00 (0)	0.41 (1.1)
		No Irri	2.92 (7.78)	1.13 (3)	0.00 (0)	0.00 (0)	4.19 (11.16)
	BC and Ocs	Canal	4.22 (11.25)	27.60 (73.52)	7.32 (19.5)	5.99 (15.95)	45.13 (120.22)
		Well	0.17 (0.45)	15.84 (42.18)	0.00 (0)	6.68 (17.8)	22.69 (60.43)
		Tank	0.09 (0.25)	1.80 (4.8)	6.01 (16)	0.11 (0.3)	8.01 (21.35)
		No Irri	6.50 (17.31)	1.60 (4.25)	0.00 (0)	0.28 (0.75)	8.75 (23.31)
	Total		18.38 (48.95)	53.59 (142.76)	14.08 (37.5)	13.44 (35.8)	100.00 (266.38)

Table-2: Contd…..

Villages	Caste	Irrigation Source	Poor Peasants	Middle Peasants	Rich Peasants	Non-cultivating Household	Total
	Schedule Caste	Well	4.40 (4.75)	0.00 (0)	0.00 (0)	0.00 (0)	4.86 (5.25)
		Tank	2.68 (2.9)	0.00 (0)	0.00 (0)	0.00 (0)	2.68 (2.9)
		No Irri	4.35 (4.7)	0.00 (0)	0.00 (0)	0.00 (0)	6.20 (6.7)
	BC and Ocs	Well	33.35 (36.02)	78.69 (85)	45.64 (49.3)	0.00 (0)	160.46 (173.32)
		Tank	30.64 (33.1)	41.84 (45.2)	10.18 (11)	10.18 (11)	92.85 (100.3)
		No Irri	18.53 (20.02)	25.92 (28)	43.51 (47)	10.18 (11)	100.00 (108.02)
Nagaram	Total		37.37 (101.49)	58.25 (158.2)	39.51 (107.3)	8.10 (22)	146.00 (396.49)
		Well	0.77 (2.1)	3.31 (9)	3.94 (10.7)	1.10 (3)	9.13 (24.8)
		Tank	12.81 (34.8)	16.17 (43.9)	6.44 (17.5)	38.48 (104.5)	73.90 (200.7)
	BC and Ocs	No Irri	3.55 (9.65)	4.28 (11.62)	0.00 (0)	9.13 (24.8)	16.96 (46.07)
Jonanki	Total		17.14 (46.55)	23.76 (64.52)	10.38 (28.2)	48.72 (132.3)	100.00 (271.57)
	Schedule Caste	Well	1.95 (6.76)	0.00 (0)	0.00 (0)	0.00 (0)	1.95 (6.76)
		No Irri	6.59 (22.9)	0.00 (0)	0.00 (0)	0.00 (0)	6.59 (22.9)
	BC and Ocs	Well	4.02 (13.97)	11.55 (40.10)	29.37 (102.00)	28.79 (100.00)	73.88 (256.57)
		Tank	0.00 (0.00)	0.92 (3.20)	3.17 (11.00)	0.00 (0.00)	4.09 (14.20)
		No Irri	4.08 (14.17)	9.42 (32.7)	0.00 (0)	0.00 (0)	13.50 (46.87)
B.Koduru	Total		16.64 (57.8)	21.88 (76)	32.54 (113)	28.79 (100)	100.00 (347.3)

Table-2: Contd……

Villages	Caste	Irrigation Source	Poor Peasants	Middle Peasants	Rich Peasants	Non-cultivating Household	Total
	Schedule Caste	Canal	0.71 (32.45)	0.52 (24)	0.13 (6)	0.08 (3.5)	1.43 (65.95)
		Well	0.40 (18.46)	0.00 (0)	0.00 (0)	0.00 (0)	0.41 (18.96)
		Tank	0.21 (9.5)	0.00 (0)	0.00 (0)	0.00 (0)	0.21 (9.5)
		No Irri	2.27 (104.46)	0.54 (25.00)	0.00 (0.00)	0.00 (0.00)	3.16 (145.58)
	Schedule Tribe	Canal	0.04 (2)	0.00 (0)	0.00 (0)	0.00 (0)	0.04 (2)
		Well	0.043 (2)	0.00 (0)	0.00 (0)	0.00 (0)	0.043 (2)
		No Irri	0.27 (12.5)	0.00 (0)	0.00 (0)	0.00 (0)	0.27 (12.5)
	BC and Ocs	Canal	3.86 (177.65)	9.44 (434.68)	2.00 (92.00)	2.06 (94.95)	17.41 (801.28)
		Well	12.42 (571.74)	15.39 (708.51)	11.34 (521.73)	4.74 (218.30)	44.05 (2027.27)
		Tank	2.69 (123.59)	5.22 (240.35)	2.79 (128.50)	3.28 (150.80)	13.98 (643.24)
		No Irri	8.90 (409.76)	6.67 (307.16)	1.87 (86.00)	1.17 (54.05)	18.99 (873.97)
Total	Total		31.81 (1464.10)	37.80 (1739.69)	18.13 (834.23)	11.33 (521.60)	100.00 (4602.24)

Source: Field Survey

Note: Figures in Brackets is indicate percentages

Table-3: Owned Land Distribution in Terms of Caste and Class in the Different Study Villages (in Acres).

Villages	Caste	Poor Peasants	Middle Peasants	Rich Peasants	Non-cultivating Household	Total
	Schedule Caste	3.89 (4.6)	3.38 (4)	3.38 (4)	0.00 (0)	10.66 (12.6)
	BC and Ocs	2.62 (3.1)	22.03 (26.05)	30.87 (36.5)	33.83 (40)	89.34 (105.65)
Mentipudi	Total	6.51 (7.7)	25.41 (30.05)	34.25 (40.5)	33.83 (40)	100.00 (118.25)
	Schedule Caste	1.94 (2.5)	3.88 (5)	0.00 (0)	1.94 (2.5)	7.76 (10)
	BC and Ocs	11.09 (14.3)	54.77 (70.6)	13.96 (18)	12.41 (16)	92.24 (118.9)
Kothapalli	Total	13.03 (16.8)	58.65 (75.6)	13.96 (18)	14.35 (18.5)	100.00 (128.9)
	BC and Ocs	4.99 (20.75)	28.07 (116.79)	48.66 (202.5)	16.85 (70.1)	100.00 (416.14)
Seethampet	Total	4.99 (20.75)	28.07 (116.79)	48.66 (202.5)	16.85 (70.1)	100.00 (416.14)
	Schedule Caste	3.27 (33.25)	0.00 (0)	0.00 (0)	0.00 (0)	3.29 (33.5)
	Schedule Tribe	0.34 (3.5)	0.00 (0)	0.00 (0)	0.00 (0)	0.34 (3.5)
	BC and Ocs	22.45 (228.45)	47.19 (480.25)	14.35 (146)	11.59 (118)	96.36 (980.7)
Arepalli	Total	26.06 (265.2)	47.19 (480.25)	14.35 (146)	11.59 (118)	100.00 (1017.7)
	Schedule Caste	8.99 (67.32)	2.94 (22)	0.00 (0)	0.00 (0)	13.53 (101.32)
	Schedule Tribe	0.80 (6)	0.00 (0)	0.00 (0)	0.00 (0)	0.80 (6)
	BC and Ocs	50.56 (378.75)	27.63 (207)	6.14 (46)	0.00 (0)	85.67 (641.75)
Tatiparthy	Total	60.35 (452.07)	30.57 (229)	6.14 (46)	0.00 (0)	100.00 (749.07)
	Schedule Caste	6.18 (18.88)	4.87 (14.87)	0.00 (0)	0.98 (3)	12.07 (36.88)
	BC and Ocs	10.29 (31.44)	35.83 (109.51)	16.20 (49.5)	25.62 (78.3)	87.93 (268.75)
Chinnapur	Total	16.47 (50.32)	40.70 (124.38)	16.20 (49.5)	26.60 (81.3)	100.00 (305.63)
	Schedule Caste	3.11 (12.35)	0.00 (0)	0.00 (0)	0.00 (0)	3.75 (14.85)
	BC and Ocs	22.23 (88.15)	39.90 (158.2)	27.06 (107.3)	5.80 (23)	96.25 (381.65)
Nagaram	Total	25.35 (100.5)	39.90 (158.2)	27.06 (107.3)	5.80 (23)	100.00 (396.5)

Table-3: Contd……..

Villages	Caste	Poor Peasants	Middle Peasants	Rich Peasants	Non-cultivating Household	Total
	BC and Ocs	17.40 (46.55)	23.55 (63.02)	9.60 (25.7)	49.45 (132.3)	100.00 (267.57)
Jonanki	Total	17.40 (46.55)	23.55 (63.02)	9.60 (25.7)	49.45 (132.3)	100.00 (267.57)
	Schedule Caste	9.00 (29.7)	0.00 (0)	0.00 (0)	0.00 (0)	9.00 (29.7)
	BC and Ocs	8.52 (28.14)	22.42 (74)	39.08 (129)	20.90 (69)	91.00 (300.39)
B.Koduru	Total	17.52 (57.84)	22.42 (74)	39.08 (129)	20.90 (69)	100.00 (330.09)
	Schedule Caste	4.52 (168.61)	1.23 (45.88)	0.11 (4.00)	0.15 (5.50)	6.40 (238.86)
	Schedule Tribe	0.25 (9.5)	0.00 (0)	0.00 (0)	0.00 (0)	0.25 (9.5)
	BC and Ocs	22.51 (839.63)	35.00 (1305.42)	20.39 (760.5)	14.66 (546.7)	93.34 (3481.5)
Total	Total	27.29 (1017.73)	36.23 (1351.29)	20.50 (764.5)	14.80 (552.2)	100.00 (3729.85)

Source: Field Survey

Note: Figures in Brackets is indicate percentages

APPENDIX: III (Tables related to 5th chapter)

Table- 1: Who is Leasing-in Land and Leasing-out Land by the Caste Wise Distribution in the Study Villages (Lease-in Land Households)

Villages	Lease-in Land Caste	Lease-out land Castes				
		Mala	Madiga	S.T	Others	Total
Mentipudi	Mala	5.41 (2)	0.00 (0)	0.00 (0)	13.51 (5)	18.92 (7)
	BCs and OCs	0.00 (0)	0.00 (0)	0.00 (0)	81.08 (30)	81.08 (30)
	Total	5.41 (2)	0.00 (0)	0.00 (0)	94.59 (35)	100.00 (37)
Kothapalli	Mala	1.28 (1)	0.00 (0)	0.00 (0)	32.05 (25)	33.33 (26)
	BCs and OCs	0.00 (0)	0.00 (0)	0.00 (0)	66.67 (52)	66.67 (52)
	Total	1.28 (1)	0.00 (0)	0.00 (0)	98.72 (77)	100.00 (78)
Seethampet	BCs and OCs	3.57 (1)	0.00 (0)	0.00 (0)	96.43 (27)	100.00 (28)
	Total	3.57 (1)	0.00 (0)	0.00 (0)	96.43 (27)	100.00 (28)
Arepalli	Madiga	5.56 (1)	0.00 (0)	0.00 (0)	0.00 (0)	5.56 (1)
	S.T	0.00 (0)	0.00 (0)	0.00 (0)	11.11 (2)	11.11 (2)
	BCs and OCs	5.56 (1)	0.00 (0)	0.00 (0)	77.78 (14)	83.33 (15)
	Total	11.11 (2)	0.00 (0)	0.00 (0)	88.89 (16)	100.00 (18)
Tatiparthy	BCs and OCs	13.33 (2)	13.33 (2)	0.00 (0)	73.33 (11)	100.00 (15)
	Total	13.33 (2)	13.33 (2)	0.00 (0)	73.33 (11)	100.00 (15)

Table-1: Contd…..

Villages	Lease-in Land Caste	Lease-out land Castes				Total
		Mala	Madiga	S.T	Others	
	Mala	0.00 (0)	7.14 (2)	0.00 (0)	10.71 (3)	17.86 (5)
	Madiga	0.00 (0)	0.00 (0)	0.00 (0)	32.14 (9)	32.14 (9)
	S.T	0.00 (0)	3.57 (1)	0.00 (0)	3.57 (1)	7.14 (2)
	BCs and OCs	3.57 (1)	3.57 (1)	0.00 (0)	35.71 (10)	42.86 (12)
Chinnapur	Total	3.57 (1)	14.29 (4)	0.00 (0)	82.14 (23)	100.00 (28)
	Madiga	0.00 (0)	0.00 (0)	0.00 (0)	5.00 (1)	5.00 (1)
	BCs and OCs	0.00	0.00	0.00	95.00 19	95.00 19
Nagaram	Total	0.00 (0)	0.00 (0)	0.00 (0)	100.00 (20)	100.00 (20)
	BCs and OCs	0.00 (0)	0.00 (0)	0.00 (0)	100.00 (43)	100.00 (43)
Jonanki	Total	0.00 (0)	0.00 (0)	0.00 (0)	100.00 (43)	100.00 (43)
	BCs and OCs	75.00 (6)	0.00 (0)	0.00 (0)	25.00 (2)	100.00 (8)
B.Koduru	Total	0.00 (0)	0.00 (0)	0.00 (0)	100.00 (8)	100.00 (8)
	Mala	1.09 (3)	0.00 (0)	0.73 (2)	12.00 (33)	13.82 (38)
	Madiga	0.00 (0)	0.36 (1)	0.00 (0)	3.64 (10)	4.00 (11)
	S.T	0.00 (0)	0.00 (0)	0.36 (1)	1.09 (3)	1.45 (4)
	BCs and OCs	27.5 (10)	1.09 (3)	0.36 (1)	70.82 (208)	80.73 (222)
Total	Total	4.68 (13)	1.45 (4)	1.45 (4)	90.55 (254)	100.00 (275)

Table: 2: Who is Leasing-in Land and Leasing-out Land by the Class Wise Distribution in the Study Villages (through Lease-in Land Households).

Villages	Lease-in Classes	Lease- out land Class				Total
		Poor Peasants	Middle Peasants	Rich Peasants	Non-cultivating	
Mentipudi	Agriculture labour	5.41 (2)	0.00 (0)	0.00 (0)	40.54 (15)	45.95 (17)
	Poor Peasants	2.70 (1)	0.00 (0)	0.00 (0)	29.73 (11)	32.43 (12)
	Middle Pesants	0.00 (0)	0.00 (0)	0.00 (0)	21.62 (8)	21.62 (8)
	Total	8.11 (3)	0.00 (0)	0.00 (0)	91.89 (34)	100.00 (37)
Kothapalli	Agricultural Lboures	3.85 (3)	0.00 (0)	0.00 (0)	71.79 (56)	75.64 (59)
	Poor Peasants	0.00 (0)	0.00 (0)	0.00 (0)	23.08 (18)	23.08 (18)
	Middle Peasants	0.00 (0)	0.00 (0)	0.00 (0)	1.28 (1)	1.28 (1)
	Total	3.85 (3)	0.00 (0)	0.00 (0)	96.15 (75)	100.00 (78)
Seethampet	Agricultural Labourers	3.57 (1)	0.00 (0)	0.00 (0)	3.57 (1)	7.14 (2)
	Poor Peasants	3.57 (1)	0.00 (0)	0.00 (0)	21.43 (6)	25.00 (7)
	Middle Peasants	7.14 (2)	3.57 (1)	0.00 (0)	25.00 (7)	35.71 (10)
	Rich Peasants	0.00 (0)	10.71 3)	0.00 (0)	21.43 (6)	32.14 (9)
	Total	14.29 (4)	14.29 (4)	0.00 (0)	71.43 (20)	100.00 (28)
Arepalli	Poor Peasants	27.78 (5)	0.00 (0)	0.00 (0)	44.44 (8)	72.22 (13)
	Middle Peasants	0.00 (0)	5.56 (1)	0.00 (0)	16.67 (3)	22.22 (4)
	Rich Peasants	0.00 (0)	0.00 (0)	0.00 (0)	5.56 (1)	5.56 (1)
	Total	27.78 (5)	5.56 (1)	0.00 (0)	66.67 (12)	100.00 (18)

Table-2: Contd…..

Villages	Lease-in Classes	Lease- out land Class				Total
		Poor Peasants	Middle Peasants	Rich Peasants	Non-cultivating	
	Agricultural labour	6.67 (1)	0.00 (0)	0.00 (0)	0.00 (0)	6.67 (1)
	Poor Peasants	13.33 (2)	6.67 (1)	6.67 (1)	40.00 (6)	66.67 (10)
	Middle Peasants	0.00 (0)	6.67 (1)	0.00 (0)	6.67 (1)	26.67 (4)
Tatiparthy	Total	33.33 (5)	13.33 (2)	6.67 (1)	46.67 (7)	100.00 (15)
	Agricultural Labourers	3.57 (1)	0.00 (0)	0.00 (0)	3.57 (1)	7.14 (2)
	Poor Peasants	3.57 (1)	7.14 (2)	10.71 (3)	25.00 (87)	46.43 (13)
	Middle Peasants	0.00 (0)	0.00 (0)	0.00 (0)	42.86 (12)	42.86 (12)
	Rich Peasants	0.00 (0)	0.00 (0)	0.00 (0)	3.57 (1)	3.57 (1)
Chinnapur	Total	7.14 2)	7.14 (2)	10.71 (3)	75.00 (21)	100.00 (28)
	Agricultural Labourers	0.00 (0)	0.00 (0)	0.00 (0)	5.00 (1)	5.00 (1)
	Poor Peasants	5.00 (1)	0.00 (0)	0.00 (0)	25.00 (5)	30.00 (6)
	Middle Peasants	10.00 (2)	5.00 (1)	0.00 (0)	45.00 (9)	60.00 (12)
	Rich Peasants	0.00 (0)	0.00 (0)	0.00 (0)	5.00 (1)	5.00 (1)
Nagaram	Total	15.00 (3)	5.00 (1)	0.00 (0)	80.00 (16)	100.00 (20)
	Poor Peasants	4.65 (2)	0.00 (0)	0.00 (0)	72.09 (31)	76.74 (33)
	Middle Peasants	0.00 (0)	0.00 (0)	0.00 (0)	18.60 (8)	18.60 (8)
	Rich Peasants	0.00 (0)	0.00 (0)	0.00 (0)	4.65 (2)	4.65 (2)
Jonanki	Total	4.65 (2)	0.00 (0)	0.00 (0)	95.35 (41)	100.00 (43)

Table-2: Contd…..

Villages	Lease-in Classes	Lease- out land Class				Total
		Poor Peasants	Middle Peasants	Rich Peasants	Non-cultivating	
B.Koduru	Poor Peasants	37.50 (3)	0.00 (0)	0.00 (0)	25.00 (2)	62.50 (5)
	Rich Peasants	37.50 (3)	0.00 (0)	0.00 (0)	0.00 (0)	37.50 (3)
	Total	75.00 (6)	0.00 (0)	0.00 (0)	25.00 (2)	100.00 (8)
Total	Agricultural Labourers	1.82 (5)	0.00 (0)	0.00 (0)	26.91 (74)	28.73 (79)
	Poor Peasants	5.82 (16)	1.09 (3)	1.45 (4)	34.18 (94)	42.55 (117)
	Middle Peasants	3.27 (9)	1.45 (4)	0.00 (0)	17.82 (49)	22.55 (62)
	Rich Peasants	0.00 (0)	1.09 (3)	0.00 (0)	4.00 (11)	5.09 (14)
	Total	10.91 (30)	3.64 (10)	1.45 (4)	84.10 (231)	100.00 (275)

Table-3: Who is Leasing-in Land and Leasing-out Land by the Class Wise Distribution in the Study Villages (through Lease-out Land Households).

Villages	Lease-in Class	Lease-out Class					Total
		Agricultural	Poor Peasants	Middle Peasants	Rich Peasants	Non-Cultivating	
	Agricultural	0.00 (0)	0.00 (0)	0.00 (0)	20.00 (1)	60.00 (3)	80.00 (4)
	Poor Peasants	0.00 (0)	0.00 (0)	0.00 (0)	0.00 (0)	20.00 (1)	20.00 (1)
Mentipudi	Total	0.00 (0)	0.00 (0)	0.00 (0)	20.00 (1)	80.00 (4)	100.00 (5)
	Agricultural	0.00 (0)	0.00 (0)	25.00 (2)	0.00 (0)	37.50 (3)	62.50 (5)
	Poor Peasants	0.00 (0)	0.00 (0)	0.00 (0)	0.00 (0)	37.50 (3)	37.50 (3)
Kothaplli	Total	0.00 (0)	0.00 (0)	25.00 (2)	0.00 (0)	75.00 (6)	100.00 (8)
	Poor Peasants	0.00 (0)	14.29 (2)	0.00 (0)	0.00 (0)	0.00 (0)	14.29 (2)
	Middle Peasants	0.00 (0)	0.00 (0)	7.14 (1)	0.00 (0)	14.29 (2)	21.43 (3)
	Rich	0.00 (0)	14.29 (2)	7.14 (1)	0.00 (0)	42.86 (6)	64.29 (9)
Seethampet	Total	0.00 (0)	28.57 (4)	14.29 (2)	0.00 (0)	57.14 (8)	100.00 (14)
	Poor Peasants	0.00 (0)	21.43 (3)	14.29 (2)	0.00 (0)	28.57 (4)	64.29 (9)
	Middle Peasants	0.00 (0)	0.00 (0)	0.00 (0)	0.00 (0)	21.43 (3)	21.43 (3)
	Rich	0.00 (0)	0.00 (0)	0.00 (0)	0.00 (0)	14.29 (2)	14.29 (2)
Arepalli	Total	0.00 (0)	21.43 (3)	14.29 (2)	0.00 (0)	64.29 (9)	100.00 (14)
	Poor Peasants	0.00 (0)	50.00 (1)	0.00 (0)	50.00 (1)	0.00 (0)	100.00 (2)
Tatiparthy	Total	0.00 (0)	50.00 (1)	0.00 (0)	50.00 (1)	0.00 (0)	100.00 (2)
	Poor Peasants	0.00 (0)	5.13 (2)	2.56 (1)	2.56 (1)	58.97 (23)	69.23 (27)
	Middle Peasants	0.00 (0)	0.00 (0)	2.56 (1)	5.13 (2)	17.95 (7)	25.64 (10)
	Rich	0.00 (0)	0.00 (0)	0.00 (0)	0.00 (0)	5.13 (2)	5.13 (2)
Chinnapur	Total	0.00 (0)	5.13 (2)	5.13 (2)	7.69 (3)	82.05 (32)	100.00 (39)

Table-3: Contd….

Villages	Lease-in Class	Lease-out Class					Total
		Agricultural	Poor Peasants	Middle Peasants	Rich Peasants	Non-Cultivating	
	Poor Peasants	0.00 (0)	7.69 (1)	0.00 (0)	0.00 (0)	7.69 (1)	15.38 (2)
Nagaram	Total	0.00 (0)	7.69 (1)	0.00 (0)	0.00 (0)	7.69 (1)	15.38 (2)
	Poor Peasants	0.00 (0)	0.00 (0)	0.00 (0)	0.00 (0)	46.15 (6)	46.15 (6)
	Middle Peasants	0.00 (0)	0.00 (0)	0.00 (0)	0.00 (0)	7.69 (1)	7.69 (1)
Jonanki	Total	0.00 (0)	0.00 (0)	0.00 (0)	0.00 (0)	100.00 (13)	100.00 (13)
	Poor Peasants	0.00 (0)	0.00 (0)	0.00 (0)	0.00 (0)	0.00 (0)	4.00 (1)
	Rich Peasants	0.00 (0)	100.00 (25)	0.00 (0)	0.00 (0)	0.00 (0)	100.00 (25)
B.Koduru	Total	0.00 (0)	100.00 (25)	0.00 (0)	0.00 (0)	0.00 (0)	100.00 (25)
	Agricultural	0.00 (0)	0.00 (0)	1.64 (2)	0.82 (1)	9.84 (12)	12.30 (15)
	Poor Peasants	0.00 (0)	7.38 (9)	2.46 (3)	1.64 (2)	31.15 (38)	43.44 (53)
	Middle Peasants	0.00 (0)	0.00 (0)	1.64 (2)	1.64 (2)	10.66 (13)	13.93 (17)
	Rich Peasants	0.00 (0)	21.31 (26)	0.82 (1)	0.00 (0)	8.20 (10)	30.33 (37)
Total	Total	0.00 (0)	28.69 (35)	6.56 (8)	4.10 (5)	59.84 (73)	100.00 (122)

Table: 4: Who is Leasing-in Land and Leasing-out Land in Terms of Caste Wise Distribution in the Study Villages (Lease-in Land Households)

Villages	Lease-in Castes	Lease-out Castes			Total
		Mala	Madiga	BCs and OCs	
Mentipudi	Mala	0.00 (0)	0.00 (0)	60.00 (3)	60.00 (3)
	BCs and OCs	0.00 (0)	0.00 (0)	40.00 (2)	40.00 (2)
	Total	0.00 (0)	0.00 (0)	100.00 (5)	100.00 (5)
Kothapalli	Mala	12.50 (1)	0.00 (0)	62.50 (5)	75.00 (6)
	BCs and OCs	0.00 (0)	0.00 (0)	25.00 (2)	25.00 (2)
	Total	12.50 (1)	0.00 (0)	87.50 (7)	100.00 (8)
Seethampet	BCs and OCs	0.00 (0)	0.00 (0)	100.00 (14)	100.00 (14)
	Total	0.00 (0)	0.00 (0)	100.00 (14)	100.00 (14)
Arepalli	Madiga	0.00 (0)	0.00 (0)	14.29 (2)	14.29 (2)
	BCs and OCs	0.00 (0)	0.00 (0)	85.71 (12)	85.71 (12)
	Total	0.00 (0)	0.00 (0)	100.00 (14)	100.00 (14)
Tatiparthy	BCs and OCs	0.00 (0)	0.00 (0)	100.00 (2)	100.00 (2)
	Total	0.00 (0)	0.00 (0)	100.00 (2)	100.00 (2)
Chinnapur	Madiga	0.00 (0)	7.69 (3)	12.82 (5)	20.51 (8)
	BCs and OCs	0.00 (0)	0.00 (0)	79.49 (31)	79.49 (31)
	Total	0.00 (0)	7.69 (3)	92.31 (36)	100.00 (39)
Nagaram	Madiga	0.00 (0)	0.00 (0)	50.00 (1)	50.00 (1)
	BCs and OCs	0.00 (0)	0.00 (0)	50.00 (1)	50.00 (1)
	Total	0.00 (0)	0.00 (0)	100.00 (2)	100.00 (2)

Table -4: Contd….

Villages	Lease-in Castes	Lease-out Castes			Total
		Mala	Madiga	BCs and OCs	
	Mala	0.00 (0)	0.00 (0)	30.77 (4)	30.77 (4)
	BCs and OCs	0.00 (0)	0.00 (0)	69.23 (9)	69.23 (9)
Jonanki	Total	0.00 (0)	0.00 (0)	100.00 (13)	100.00 (13)
	BCs and OCs	88.00 (22)	4.00 (1)	8.00 (2)	100.00 (25)
B.Koduru	Total	88.00 (22)	4.00 (1)	8.00 (2)	100.00 (25)
	Mala	0.82 (1)	0.00 (0)	9.84 (12)	10.66 (13)
	Madiga	0.00 (0)	2.46 (3)	6.56 (8)	9.02 (11)
	BCs and OCs	18.03 (22)	0.82 (1)	61.48 (75)	80.33 (98)
Total	Total	18.85 (23)	3.28 (4)	77.87 (95)	100.00 (122)

Appendix: IV

Distribution of Households Resources among Different Cultivators in the Study Villages

Variables	Mentipudi			Kothapalli			Seethampet			Arepalli		
	leased - in	Leased-out	owner	leased -in	Leased-out	owner	leased -in	Leased-out	owner	leased - in	Leased-out	owner
Worker per Household	3.95	3.80	3.82	3.36	3.38	3.50	4.00	2.86	3.61	3.72	2.64	3.45
Land per Household	0.94	3.60	2.98	0.44	4.31	2.50	2.95	6.29	5.34	4.36	7.71	3.30
Irrigated land per Household	0.94	3.60	2.98	0.44	4.31	2.50	2.23	5.72	3.78	4.36	7.71	3.14
Proportion of Irrigated land	0.49	1.00	1.00	0.23	1.00	1.00	0.51	0.86	0.67	0.89	1.00	0.84
Ploughs per Household	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.50	0.57	0.49
Bullock Carts per Household	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.07	0.00	0.22	0.43	0.18
Tractors per Household	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.17	0.36	0.11
Pump sets per Household	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.11	0.29	0.11
Sprays per Household	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.07
Drought Animals per Household	0.95	0.40	1.45	0.67	0.25	1.46	1.14	1.07	1.41	1.61	0.29	0.86
Value of Output per Acre	28251.43	0.00	27538.57	21916.65	0.00	20645.97	16702.25	0.00	11724.05	7661.30	0.00	16309.48
Value of Rent per Acre	7095.08	7444.54	0.00	7622.87	7591.47	0.00	5794.44	6017.45	0.00	3392.15	3483.82	0.00
Percentage of Area Under Paddy	100.00	100.00	100.00	100.00	100.00	100.00	39.30	25.91	1.28	100.00	0.00	88.69
Percentage of Area Under Tobacco	0.00	0.00	0.00	0.00	0.00	0.00	60.70	0.00	53.37	0.00	0.00	0.00
Percentage of Area Under Jowar	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	11.35
Percentage of Area Under Maize	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	7.06	0.00	0.00	0.00
Percentage of Area Under Castrol	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.34
Percentage of Area Under Turmerric	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.10
Percentage of Area under Grams	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Percentage of Area Under Chillies	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Percentage of Area Under Sugarcane	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	13.67	0.00	0.00	0.00
Proportion of Households who have own Land	0.49	1.00	1.00	0.23	1.00	1.00	0.69	1.00	1.00	0.88	1.00	1.00
Proportion of Households who have Bullock Cart	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.07	0.00	0.22	0.43	0.00

Appendix- IV: Contd……

Variables	Mentipudi			Kothapalli			Seethampet			Arepalli		
	leased - in	Leased-out	owner	leased -in	Leased-out	owner	leased -in	Leased-out	owner	leased - in	Leased-out	owner
Proportion of Households who have Plough	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.50	0.50	0.50
Proportion of Households who have Tractors	0.00	0.00	0.00	0.00	0.00	0.04	0.00	0.00	0.00	0.00	0.36	0.03
Proportion of Households who have Pump Sets	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.11	0.29	0.11
Proportion of Households who have Sprays	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.06	0.21	0.06
Proportion of Households who have Drought Animal	0.73	0.20	0.82	0.40	0.25	0.54	0.57	0.50	0.61	0.44	0.21	0.27
Proportion of Canal Irrigation	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	0.00	0.32	0.38	0.49
Proportion of Well Irrigation	0.00	0.00	0.00	0.00	0.00	0.00	0.76	0.95	0.63	0.00	0.07	0.08
Proportion of Tank Irrigation	0.00	0.00	0.00	0.00	0.00	0.00	0.07	0.05	0.04	0.36	0.24	0.27
Proportion of Non Irrigation	0.00	0.00	0.00	0.00	0.00	0.00	0.16	0.00	0.18	0.33	0.31	0.17
Proportion of Agricultural labourers	0.21	0.00	0.00	0.29	0.00	0.00	0.05	0.00	0.00	0.01	0.00	0.00
Proportion of Poor Peasants	0.18	0.00	0.06	0.28	0.00	0.04	0.04	0.00	0.08	0.02	0.00	0.48
Proportion of Middle Peasants	0.14	0.00	0.09	0.09	0.01	0.06	0.06	0.01	0.09	0.02	0.01	0.22
Proportion of Rich Peasants	0.09	0.04	0.01	0.04	0.00	0.01	0.05	0.00	0.07	0.00	0.00	0.02
Proportion of Non-Cultivating household	0.00	0.05	0.04	0.00	0.03	0.00	0.00	0.05	0.01	0.00	0.02	0.01

Appendix- IV: Contd …….

Variables	Tatiparthy			Chinnapur			Nagaram			Jonanki		
	leased - in	Leased-out	owner	leased - in	Leased-out	owner	leased - in	Leased-out	owner	leased - in	Leased-out	owner
Worker per Household	3.87	3.00	3.63	2.89	2.79	2.91	2.90	2.50	2.91	3.53	3.62	3.35
Land per Household	3.63	7.50	3.84	1.43	2.94	1.50	2.83	2.50	2.89	0.67	10.18	1.69
Irrigated land per Household	2.20	5.00	1.01	1.31	2.89	1.26	1.86	2.50	2.07	0.64	8.27	1.44
Proportion of Irrigated land	0.42	0.25	0.24	0.64	0.95	0.80	0.68	1.08	0.72	0.56	0.38	0.85
Ploughs per Household	0.47	0.50	0.67	0.71	0.69	0.72	0.20	0.00	0.28	0.88	1.23	0.71
Bullock Carts per Household	0.00	0.00	0.03	0.50	0.18	0.49	0.05	0.00	0.11	0.58	1.00	0.43
Tractors per Household	0.00	0.00	0.00	0.07	0.00	0.00	0.05	0.00	0.03	0.05	0.00	0.06
Pump sets per Household	0.00	0.00	0.01	0.21	0.03	0.35	0.20	0.00	0.08	0.21	0.54	0.21
Sprays per Household	0.00	0.00	0.01	0.00	0.03	0.05	0.25	0.00	0.09	0.07	0.00	0.19
Drought Animals per Household	2.40	2.50	1.13	1.36	0.38	1.18	0.75	0.00	1.03	1.23	0.54	1.14
Value of Output per Acre	2568.24	0.00	3497.04	6023.76	0.00	13472.31	10879.12	0.00	12407.21	8457.41	0.00	9197.29
Value of Rent per Acre	2049.19	1350.00	0.00	3944.80	4379.17	0.00	3372.80	1729.55	0.00	3952.39	4480.17	0.00
Percentage of Area Under Paddy	0.00	0.00	13.53	89.30	0.00	74.52	80.00	0.00	50.00	100.00	0.00	100.00
Percentage of Area Under Tobacco	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Percentage of Area Under Jowar	60.00	0.00	73.76	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Percentage of Area Under Maize	0.00	0.00	1.80	10.70	0.00	21.78	10.00	0.00	12.83	0.00	0.00	0.00
Percentage of Area Under Castrol	40.00	10.00	1.02	0.00	0.00	0.03	0.00	0.00	0.00	0.00	0.00	0.00
Percentage of Area Under Turmerric	0.00	0.00	0.00	0.00	0.00	1.89	10.00	23.41	0.52	0.00	0.00	0.00
Percentage of Area under Grams	0.00	0.00	0.22	0.00	0.00	0.00	0.00	0.00	6.83	0.00	0.00	0.00
Percentage of Area Under Chillies	0.00	0.00	0.14	0.00	0.00	1.81	0.00	0.00	6.83	0.00	0.00	0.00
Percentage of Area Under Sugarcane	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Proportion of Households who have own Land	1.00	1.00	1.00	0.89	1.00	1.00	0.90	1.00	1.00	0.60	1.00	1.00
Proportion of Households who have Bullock Cart	0.00	0.00	0.00	0.50	0.18	0.03	0.05	0.00	0.00	0.60	0.92	0.02
Proportion of Households who have Plough	0.40	0.50	0.67	0.54	0.67	0.58	0.20	0.00	0.28	0.79	0.92	0.63
Proportion of Households who have Tractors	0.00	0.00	0.00	0.04	0.00	0.00	0.00	0.00	0.03	0.00	0.00	0.03
Proportion of Households who have Pump Sets	0.00	0.00	0.01	0.21	0.03	0.31	0.20	0.00	0.08	0.19	0.69	0.21
Proportion of Households who have Sprays	0.00	0.00	0.01	0.00	0.03	0.05	0.10	0.00	0.07	0.07	0.00	0.17

Appendix- IV: Contd…….

Variables	Tatiparthy			Chinnapur			Nagaram			Jonanki		
	leased - in	Leased-out	owner	leased - in	Leased-out	owner	leased - in	Leased-out	owner	leased - in	Leased-out	owner
Proportion of Households who have Drought Animal	0.73	0.50	0.33	0.57	0.31	0.52	0.65	0.00	0.60	0.79	0.54	0.67
Proportion of Canal Irrigation	0.00	0.00	0.00	0.42	0.44	0.57	0.00	0.00	0.00	0.00	0.00	0.00
Proportion of Well Irrigation	0.10	0.42	0.20	0.18	0.17	0.23	0.43	0.00	0.47	0.00	0.00	0.20
Proportion of Tank Irrigation	0.00	0.00	0.04	0.00	0.06	0.00	0.15	0.40	0.25	0.83	0.71	0.65
Proportion of Non Irrigation	0.90	0.58	0.75	0.40	0.33	0.19	0.42	0.60	0.28	0.17	0.29	0.15
Proportion of Agricultural labourers	0.00	0.00	0.00	0.01	0.00	0.00	0.01	0.00	0.00	0.11	0.00	0.00
Proportion of Poor Peasants	0.04	0.00	0.64	0.05	0.01	0.20	0.03	0.01	0.38	0.21	0.00	0.25
Proportion of Middle Peasants	0.02	0.00	0.14	0.05	0.01	0.22	0.07	0.00	0.16	0.06	0.00	0.13
Proportion of Rich Peasants	0.00	0.00	0.00	0.00	0.02	0.02	0.01	0.00	0.07	0.01	0.00	0.02
Proportion of Non-Cultivating household	0.00	0.00	0.00	0.00	0.13	0.03	0.00	0.01	0.01	0.00	0.09	0.00

Appendix- IV: Contd …….

Variables	B.Koduru			All Villages		
	leased - in	Leased-out	owner	leased - in	Leased-out	owner
Worker per Household	4.50	3.04	3.35	3.53	3.00	3.35
Land per Household	13.29	1.21	2.79	1.88	4.47	3.06
Irrigated land per Household	13.26	0.28	2.19	1.64	3.96	2.16
Proportion of Irrigated land	0.63	0.28	0.78	0.49	0.74	0.67
Ploughs per Household	0.00	0.48	0.41	0.28	0.52	0.48
Bullock Carts per Household	0.00	0.24	0.09	0.16	0.27	0.17
Tractors per Household	0.00	0.00	0.01	0.03	0.04	0.04
Pump sets per Household	0.00	0.04	0.03	0.08	0.11	0.10
Sprays per Household	0.00	0.04	0.05	0.03	0.04	0.06
Drought Animals per Household	3.25	0.84	1.25	1.15	0.58	1.09
Value of Output per Acre	5734.95	0.00	10581.58	12376.87	0.00	12376.87
Value of Rent per Acre	1767.80	736.16	0.00	5356.95	3971.85	0.00
Percentage of Area Under Paddy	37.50	0.00	67.98	84.00	0.00	59.78
Percentage of Area Under Tobacco	0.00	0.00	0.00	6.47	0.00	6.51
Percentage of Area Under Jowar	0.00	0.00	0.00	3.30	0.00	17.53
Percentage of Area Under Maize	0.00	0.00	0.00	1.80	0.00	4.29
Percentage of Area Under Castrol	0.00	0.00	0.00	2.20	0.00	0.31
Percentage of Area Under Turmerric	0.00	0.00	0.00	0.70	0.00	3.38
Percentage of Area under Grams	0.00	0.00	12.12	0.00	0.00	4.08
Percentage of Area Under Chillies	0.00	0.00	19.90	0.00	0.00	2.75
Percentage of Area Under Sugarcane	0.00	0.00	0.00	0.00	0.00	1.67

Appendix- IV: Contd……..

Variables	B.Koduru			All Villages		
	leased - in	Leased-out	owner	leased - in	Leased-out	owner
Proportion of Households who have own Land	1.00	1.00	1.00	0.59	1.00	1.00
Proportion of Households who have Bullock Cart	0.00	0.24	0.00	0.16	0.26	0.00
Proportion of Households who have Plough	0.00	0.32	0.39	0.25	0.44	0.46
Proportion of Households who have Tractors	0.00	0.00	0.00	0.00	0.04	0.02
Proportion of Households who have Pump Sets	0.00	0.04	0.01	0.07	0.12	0.09
Proportion of Households who have Sprays	0.00	0.04	0.04	0.02	0.04	0.05
Proportion of Households who have Drought Animal	0.75	0.64	0.61	0.59	0.40	0.45
Proportion of Canal Irrigation	0.00	0.00	0.00	0.51	0.31	0.23
Proportion of Well Irrigation	0.96	0.25	0.72	0.16	0.30	0.28
Proportion of Tank Irrigation	0.00	0.00	0.06	0.12	0.10	0.16
Proportion of Non Irrigation	0.04	0.75	0.22	0.19	0.28	0.33
Proportion of Agricultural labourers	0.01	0.00	0.00	0.07	0.00	0.00
Proportion of Poor Peasants	0.03	0.11	0.23	0.09	0.01	0.30
Proportion of Middle Peasants	0.01	0.00	0.16	0.05	0.01	0.16
Proportion of Rich Peasants	0.00	0.00	0.04	0.01	0.00	0.03
Proportion of Non-Cultivating household	0.01	0.00	0.00	0.00	0.04	0.01