

**ACCESS TO INSTITUTIONAL CREDIT – AN ECONOMIC  
ANALYSIS OF TENANT FARMING IN EAST GODAVARI  
DISTRICT OF ANDHRA PRADESH**

**By**

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(2010-11-148)**

**THESIS**

*Submitted in partial fulfillment of the requirement  
for the degree of*

*MASTER OF SCIENCE IN AGRICULTURE*

*Faculty of Agriculture*

*Kerala Agricultural University, Thrissur*

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**VELLANIKKARA, THRISSUR - 680 656**

**KERALA, INDIA**

**2012**

## **DECLARATION**

I hereby declare that the thesis entitled “Access to Institutional Credit-An Economic Analysis of Tenant Farming in East Godavari District of Andhra Pradesh” is a bonafide record of research work done by me during the course of research and the thesis has not previously formed the basis for the award to me of any degree, diploma, associateship, fellowship or other similar title, of any other University or Society.

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## *ACKNOWLEDGEMENT*

*I place on record my deep sense of gratitude and indebtedness to Dr.Satheesh Babu, Professor, Department of Agricultural Economics and Major Advisor, Advisory Committee for having shaped up this work in the best possible manner with constant encouragement, valuable suggestions and with a lot of patience in spite of his busy official preoccupation. I gratefully remember his sustained and valuable guidance, constructive suggestions, unfailing patience and constant support during the conduct of this research work and preparation of the thesis.*

*I deeply express my whole hearted thanks to Dr.K. Jesy Thomas, Professor and Head Department of Agricultural Economics and member of my Advisory Committee for her constructive criticism, precious suggestions and generous support during my entire study and the completion of this endeavour.*

*I thankfully acknowledge Dr.Laly John, Associate Professor, Department of Agricultural Statistics and member of my advisory committee for her wholehearted support, encouragement and valuable suggestions during various stages of study particularly during data analysis.*

*A word of special thanks to Dr.P.Chitra, Assistant Professor, (Agricultural Economics), RARS, Pattambi and member of my advisory committee for her constant encouragement, interest and valuable suggestions throughout the entire course of my study in KAU.*

*I am deeply indebted to all the teachers in the department for their unbounded support, valuable suggestions and whole-hearted co-operation towards the satisfactory fulfillment of this endeavor.*

*I am extremely delighted to place on record my profound sense of gratitude to my friends Rinu, Jeethu, Hema chechi, Seenath chechi and Emanuel. Help rendered by Aravind of computer club is also duly acknowledged.*

*I wish to record my special tribute to my parents whose support in various ways helped me to complete this great task successfully.*

*Finally, I am also grateful to the Kerala Agricultural University for providing me the Kerala Agricultural University merit scholarship during the course of this study.*

*Haritha Chitturi*

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# *Introduction*

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## 1. INTRODUCTION

Credit has become one of the crucial inputs of modern agriculture. The agricultural policy of the Government of India has been the progressive institutionalization aimed at providing timely and adequate credit to farmers for increasing agricultural production and productivity (Reserve Bank of India, 1998). Providing better access to institutional credit for the small and marginal farmers and other weaker sections, to enable them to adopt modern technology and improved agricultural practices has been a major concern of the said policy. The second cornerstone of the credit policy in India is to acknowledge that financial inclusion is vital for growth to be inclusive (Planning Commission, 2011). Financial inclusion or inclusive financing is the delivery of financial services at affordable costs to sections of disadvantaged and low income segments of the society on par with access to any public good, was adopted as an official policy statement in 2008.

Table 1.1 Flow of institutional credit to agriculture (Rupees in crores)

Sl. No.	Year	Share in total (per cent)			Total (Rs. in crores)
		Co-operative banks	Commercial banks	RRBs	
1	1970-71	100.00	-	-	744
2	1980-81	61.60	38.40	-	3292
3	1990-91	49.00	47.60	3.40	9830
4	2001-02	44.00	45.00	11.00	41386
5	2010-11	15.00	75.00	10.00	194392

Source: Government of India, 2012

The total credit delivery by the institutional agencies for agricultural development in India is presented in Table 1.1. It may be noted that the commercial banks dominate the scene, followed by co-operatives and Regional Rural Banks (RRBs) during 2010-11.

### **1.1 Tenant farmers and institutional credit**

Though financial inclusion has occupied the centre stage of our credit policy since 2008, 'connecting people' with the banking system has been a challenging task. It was estimated that about 40 per cent of the farming community in the country fall into the category of tenant farmers, share croppers and agricultural labourers. This group owns very small and uneconomical land holdings, often without proper records, accessing practically no credit from the institutional sources (Indian Banks Association, 2010). According to National Sample Survey Organization (NSSO), 2003, of all the states in India, Bihar accounted for the lowest percentage (5.8%) of leased in land by the landless, while Tamil Nadu accounted for the highest percentage (72.7 %) of leased in land by the landless (Table 1.2).

The highest per cent (47.5 %) of leased in land was constituted by the households having less than 0.5 ha of land followed by the landless (35.8 %). The lowest being constituted by the households having 0.5 to 1 ha of land (8.2 %). Even though land tenancy laws are in place in most states, tenant farmers are yet to get benefits of inclusive growth. The reason for this is that in most cases the agreement between the landlord and the tenant is verbal. Usually, the landlord avoids entering into a written agreement with his tenant as he fears losing possession if the tenant continues to cultivate his land over a period of time. In the absence of a written agreement, it is the tenant who stands to lose in terms of the intended benefits, like credit and subsidised inputs. Thus, tenancy laws in most Indian states have driven tenancy issues underground (Planning Commission, 2011).

Table 1.2 Status of land leased for farming in India

States	Landless (%)	<0.5ha (%)	0.5 to 1ha (%)
Andhra Pradesh	53.1	30.4	8.5
Arunachal Pradesh	71.3	20.1	4.1
Bihar	5.8	87.0	6.0
Gujarat	63.7	18.8	5.5
Haryana	24.0	45.4	8.9
Uttar Pradesh	7.8	69.5	13.2
West Bengal	14.1	75.1	8.4
Karnataka	55.2	28.3	5.3
Kerala	50.0	46.2	3.4
Maharashtra	60.1	19.8	7.0
Orissa	17.3	71.8	7.9
Punjab	23.8	31.9	13.0
Tamil Nadu	72.7	21.3	2.3
India	35.8	47.5	8.2

Source: National Sample Survey Organization, 2003.

The inability to offer collaterals is often stated to be the hindrance in banks extending credit to tenant farmers, share croppers, oral lessees. Besides procedural delays, rigid terms and conditions, arbitrariness and corrupt practices followed by institutional lenders as well as a variety of social and political forces too restrict the access of the poor households to institutional credit (Braverman and Guasch, 1986; Sarap, 1990). The other important aspect relating to demand side is the fallout and impact of legislation, identification process of such tenant farmers in States where in the legislation does not encourage formal recording of tenancy arrangements.

## 1.2 NABARD initiatives

Despite several policy measures over the years, the problem of inaccessibility of formal credit by tenant farmers still persisted in the country. Innovations for financial inclusion, such as the Self Help Group (SHG) - Bank linkage programme (Rythu Mithra Groups in Andhra Pradesh) and financing through Joint Liability Groups (JLGs) have proved to be successful in providing financial services from the formal banking sector to small and marginal farmers. Based on this experience, gained in the year 2008, National Bank for Agriculture and Rural Development (NABARD) introduced a scheme for financing JLGs of tenant farmers and oral lessees has been evolved for implementation by all the commercial banks including RRBs.

In spite of NABARD's guidelines to extend assistance to tenant farmers through Joint Liability Groups (JLGs) as part of financial inclusion in the year 2008, there is a wide spread reluctance to advance credit to tenants. Financing tenant farmers through JLGs has not really taken off and bankers have reported many field level problems to advance such lending (Andhra Bank, 2010).

According to the State level Committee to study the Problems of farmers in Crop Holiday affected *mandals* of East Godavari District of Andhra Pradesh, informal tenancy system was very prevalent in the area, and it covered nearly 50 to 60 per cent of the cultivated area (Government of Andhra Pradesh, 2011). The lessee experienced additional problems such as the non availability of credit and inputs. It is against this background that the present study makes an attempt to document the socio-economic characters of tenant farmers, their production and marketing problems and level of access to institutional credit in East Godavari district of Andhra Pradesh so as to suggest measures of fine tuning to the credit delivery mechanism.

### **1.3 Objectives of the study**

The present study entitled “Access to institutional credit: An economic analysis of tenant farming in East Godavari District of Andhra Pradesh” was undertaken with the following specific objectives.

- i. To investigate the operational problems faced by the tenants in accessing institutional credit and bankers in credit delivery and
- ii. To suggest policy fine tuning to overcome the bottlenecks.

### **1.4 Limitations of the study**

This thesis is prepared as part of post-graduate programme and has got all the limitations of time, money and other resources associated with such programmes. These limitations restricted the selection of the study area and the sample size. As the farmers do not maintain daily record of their farm activities, particulars collected pertain to the memory of the farmers. As human beings, people were reluctant to say the correct data especially in case of land details, lease agreements and financial matters. However every effort was made to minimize the error by cross checking the information provided by the sample farmers.

### **1.5 Organization of the thesis**

Besides the introductory chapter, the study is organized into five chapters. Chapter two is a review of literature relevant to the study. Chapter three describes the profile of the study area, the methodological framework, analytical tools and conceptual issues. The results of the study and the discussion of the findings are presented in chapter four. The fifth chapter summarizes the main findings and conclusions drawn from analysis, along with policy implications.

# *Review of Literature*

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## **2. REVIEW OF LITERATURE**

The prime objective of review of literature is to establish the theoretical background of the concepts explored by past workers. In this chapter an attempt has been made to review the existing body of literature from the point of view of objectives as well as relevance. The review of literature is presented under the following heads.

### **2.1 INSTITUTIONAL CREDIT**

Credit is an important element of agricultural production, allowing producers to satisfy the cash needs induced by the production cycle during which very little cash revenue is generated (Feder *et al.*, 1990). It turns agriculture into 'a way of living' as distinct from 'a way of life'.

Realizing the importance of agricultural credit in enhancing agricultural growth and development, an emphasis on the institutional framework for agricultural credit is being laid since the beginning of planned development era in India. A large number of institutional agencies are involved in the disbursement of credit to agriculture. However, the persistence of money lenders in the rural credit market is still a major concern.

#### **2.1.1 Credit needs**

The All India Rural Credit Survey Committee (1954) noted that inspite of various procedural and administrative reforms, the cooperatives who were the sole institutional agency of credit dispersion to the farmers accounted for only 3.1 per cent of the total borrowings of cultivators. More than 93 per cent of the estimated credit requirements were met by the cultivators from the village moneylenders and the traders (Reserve Bank of India, 1954).

The All India Rural Credit Review Committee (1969) that made a comprehensive review of the total credit system for agriculture estimated that the non-institutional sources still accounted for 81 per cent in total agricultural credit. The committee observed that cooperative credit was not oriented adequately to production credit needs. It fell short of timeliness, adequacy and dependability (Reserve Bank of India, 1969).

Gadgil (1986) argued that the role of crop credit was to enable farmers to switch over to a superior production function and provide support particularly to those farmers whose low income-saving base precludes their undertaking investment without credit.

Desai (1988) studied the semi-arid tropical areas of Andhra Pradesh, Tamil Nadu, Gujarat, Madhya Pradesh, Karnataka, Haryana, Maharashtra, Punjab, Rajasthan and Uttar Pradesh and revealed that the degree of agricultural progress was associated positively with three types of factors related to institutional credit. They were density of Rural Financial Institutions (RFIs), overall amount of credit per hectare, and shares of various types of agricultural credit.

Gadgil (1994) revealed that the adoption of multi-agency approach to rural credit, directed lending, concessional interest rates for agriculture, creation of Regional Rural Banks (RRBs), loan write-offs and other gimmicks such as loan melas tried out over the last 20 years hold out the lesson that formal credit and cheap credit was not a panacea for rural poverty. Any adjustment in the structure of rural credit institutions must satisfy some basic criteria like viability of credit institutions, healthy competition amongst them, and allocation of credit on the basis of project feasibility, a minimum quality of lending and timely recovery of loans.

Banerjee (1996) studied the capital formation in Indian agriculture and revealed that the financial system in India was built on the principle of credit flow at low cost

to the agricultural sector. His study also suggested for redesigning the rural financial structure around the RRBs instead of abolishing the RRBs.

Kapoor (1997) reported that there was shrinkage in flow of credit to rural sector due to gradual decline in the involvement of Public Sector Banks due to financial sector reforms. There had been a mushrooming growth of Non Banking Financial Corporations (NBFCs), which focused on urban sector exclusively. Thus, funds moving from rural to urban sector were adversely affecting priority sector lending.

Joshi (2000) reported that both public sector banks and private sector banks had been consistently falling short of their targets of lending to agricultural sector for the past few years. Private sector banks were unable to meet their targets because the number of branches in rural areas was few. In the case of public sector banks, their lending in absolute terms had registered an increase though there was a shortfall in percentage terms.

Singh and Kumar (2003) examined the credit gap in agriculture in Bikaner district and revealed that the total credit gap for the district during the year 1998-99 was 86.38 per cent showing major hindrance in speedy development of the agricultural sector to which the Government and the policy planners must pay adequate attention. They also pointed that agriculture being the core sector should get pride of place in the economic planning of the state and the country.

Aravind (2005) made an attempt to analyze all India and state-level extent of institutional credit availability to farmers owning land in different size classes up to two hectare and their degree of incidence of their indebtedness. From the study, it was found that the economic reforms initiated by Government of India since 1991 for improving profitability and viability of banking institutions through reconstructing of RRBs and modernization of commercial banks had adversely affected the flow of institutional credit to the farmers of India.

Mandal *et al.* (2005) studied the risk of financing agriculture in Meghalaya and concluded that financial institutions face difficulty in financing the hill agriculture because of low repayment performance and increasing non-performing assets for agricultural loans. It was also found that the absence/poor performance of crop insurance scheme increased the risk of hill farming.

Babu and Devi (2006) analyzed the performance of the Indian banking sector and found that there had been a tremendous expansion of bank branches in the post-nationalization period. The increase in the banking infrastructure and increased access to banking improved the banking habits of the people and thus resulted in a robust growth in the deposits mobilized and loans disbursed. It was also reported that the disbursal of advances to the agricultural sector by the scheduled commercial banks could retain its relative share around 35 per cent from 1969 to 2004-05 and the share of other priority sector activities had gained substantially during this period.

Chatterjee (2006) studied the performance of rural institutional credit agencies in the pre and post reform periods in 15 major states of India based on secondary data. It was revealed that with regard to priority sector lending, the percentage of total commercial banks' credit flow to priority sector was 19.91 per cent in 1970-71, which rose to 35.2 per cent in 1985-86. It declined to 25.59 per cent during 1995-96, indicating the lower share of commercial banks' credit to priority sector in the era of financial sector reforms.

Noorbasha and Nagaraju (2006) reported that the institutional credit to agriculture had reached satisfactory levels during the decades followed by nationalization. In 1969, banks provided only 14.6 per cent of their total credit to the priority sectors, with the percentages of credit disbursed to agriculture being five to seven per cent only. By 1991 the priority sector was offered about 41 per cent (against the prescribed target of 40 percent) of the net bank credit. The share of

agricultural sector was at an attractive 16.4 per cent slightly below the prescribed level of 18 per cent.

Devi and Babu (2007) analyzed institutional credit in Kerala and pointed out that the institutional credit flow to priority sector in Kerala succeeded in meeting national targets with an increasing trend over years. But the farm sector advances were not up to the target set, though the credit flow exhibited an increase over the years. It was also found that despite a higher share of plantation crops in total cropped area and high gradient of land, the investment credit delivery by the institutional agencies showed lesser priority compared to production credit and thus indicated a paradox of not supporting the sustainable agricultural performance in the state.

Naidu and Sivasanker (2007) examined the factors influencing agricultural credit in Chittoor district in Andhra Pradesh and the results indicated that the extent and level of borrowing among farmers was a function of variables like size of holdings, level of current farm expenditure, capital expenditure and owned liquid assets. They also found that the major portion of the total credit came from institutional agencies, accounting for 70 per cent and the role of commercial banks were quite credible followed by co-operative banks and RRBs. There was much less involvement of non-institutional agencies in meeting credit requirement of farmers.

Satyasai (2008) reported that the public policy on rural credit in India focused on institutionalization as a means of providing cheaper credit to farmers and as a result the share of private money lenders had decreased substantially from 93 per cent in early 1950s to 31 per cent by 1991. Commercial banks were successfully involved in farm credit package for doubling the credit and other initiatives of Government of India.

Kamath *et al.* (2010) found that the basis for the provision of any financial service lies in understanding characteristics of the financially excluded, so that at the very least, their needs could be incorporated. This analysis would be a step in that

direction to clearly identify the key beneficiary groups towards whom the financial inclusion policies need to be targeted.

Kumar *et al.* (2010) studied and analyzed the status, performance and determinants of institutional credit to agricultural sector in India. It was found that the institutional credit could play a pivotal role in the agricultural development of India. Even though a large number of institutional agencies were involved in the disbursement of credit to agriculture, the persistence of money lenders in the rural market was still a major concern. It was revealed that the institutional credit to agriculture in real terms increased tremendously during the past four decades and the commercial banks had emerged as the leader of institutional credit in recent years.

Sidhu *et al.* (2011) reported that most of the suicides committed by the farmers in Punjab state were linked with the problem of indebtedness. It was estimated that the level of debt in the farming sector of the state was around Rs. 21,064 crore in 2006, out of which Rs. 13,047 crore came from non-institutional sources. They suggested that crop insurance programme need to be strengthened especially in cash crops like cotton. They also suggested development of innovative loan settlement mechanisms in case of crop failure and also regulation of non- institutional money lenders to prevent them from charging exploitative rates of interest from farmers.

### **2.1.2 Adequacy of credit**

Chatterjee and Benerjee (1978) studied the credit aspects of paddy cultivation and recommended that for each region there should be a centralized planning agency and a centralized credit agency and they should work together to make available adequate credit for effective utilization.

According to Kahlon (1991), underfinancing resulting from the fixation of low unit cost or sanctioning of inadequate loan by banks have largely contributed to the rising level of overdues at the farmers' level. The borrowers were forced to raise the

deficit from informal agencies in the event of underfinancing or they were compelled to procure poor quality inputs.

Shete (1997) conducted a study in West Bengal on rural credit and revealed that the scale of finance fixed for crops was outdated and needed upward revision. He also suggested that the District Level Technical Committee should meet more frequently and should take the advantage of various studies conducted by State Agricultural Universities on the cost of cultivation of major crops in fixing the scale of finance.

Dhawan and Kahlon (1978) examined the issue of credit adequacy in Ferozepur district of Punjab. The results revealed that the amount of credit supplied by various institutions was not adequate to meet the working capital requirement even at the existing level of technology.

Lakshmi (2006) revealed that access to institutional credit to more farmers in appropriate quality and quantity was crucial for realizing the full potential of agriculture as profitable activity.

According to Khan *et al.* (2007), the institutional credit agencies should make concerted efforts in the disbursement of production credit to keep pace with the rising cost on cultivation so as to provide an incentive to the farmers to adopt latest agro-techniques for achieving higher productivity. The financial institutions need to intensify their focus on agriculture and should regularly update the crop-wise scale of finance in line with the rising cost of cultivation.

### **2.1.3 Timeliness of credit**

The All India Rural Credit Review Committee (1969) observed that seasonality in lending and recovery of loans were generally accepted in states like Andhra Pradesh, Bihar, Gujarat, Jammu and Kashmir, Maharashtra, Mysore, Uttar Pradesh and West Bengal, while others continued the old practice of issuing loans throughout the year and collecting them towards the close of the cooperative year. The

committee emphasized the need for flexibility in implementing the principle of seasonality so as to take special problems of particular areas into account (Reserve Bank of India, 1969).

The National Commission on Agriculture (1976) reviewed the Action Programme on Agricultural Credit implemented by the various state Governments and emphasized that the time of disbursement and recovery of agricultural credit should be in line with the seasonality of the agricultural operations (Government of India, 1976).

Shrivatsava *et al.* (1978) suggested that the loans should be made available in time and the maximum portion of the loans should be given in kind. They further suggested that the recovery installments should coincide with the period of harvest.

Bedbak (1985) viewed that too much credit or delayed credit to gear an individual's economic conditions was worse than no credit to all. So, he concluded that low cost credit in time and in suitable quantity could only assist the economically weaker but socially significant sections of the society identified under the priority sector.

Sharma (1985) examined the short-term agricultural credit scheme implemented by the Rajasthan Central Co-operative Bank revealed that the loans were not disbursed in installments, and there was no proper linkage between advancing and harvesting season.

Singha (1991) felt that there seems to be a great misconception at different levels that rural credit should be relatively at a cheaper rate. But, what is more important is the adequacy and timely availability of credit.

Shollapur (1997) felt that the end-use of credit presupposes its timely availability. Credit delayed was much worse than credit denied, as ultimately credit was likely to be diverted for non productive purposes.



#### **2.1.4 Disparities in credit delivery**

Rajagopalan (1968) conducted study on farm liquidity and institutional finance for agricultural development and found that the demand for agricultural credit varies by farm, by region and over time. He concluded that the determinants of demand for credit were liquidity, cropping pattern and cropping intensities, size of family and farm labour, cost of credit and mode of transactions, degree of risks and uncertainties involved in production and marketing inclusive of inventory control and managerial skills.

Singh and Jha (1971) found that credit needs varied substantially between farms and hence the production or income potential rather than any other criterion would serve as an appropriate basis for the assessment.

Reddy (1990) examined the demand and supply gap of credit by size group of holdings of farmers in Karimnagar district of Andhra Pradesh. He found negative supply-demand gap among the marginal, small and medium farmers. The gap was more for marginal and small farmers. The higher per acre demand for credit for this category was accompanied by a lower per acre supply of credit. The per acre supply of credit was higher for the large farmers while their per acre demand was low, resulting in a positive supply-demand gap in credit for this category, highlighting the unequal access of credit among the various size group of holdings and the differing pattern of inadequacies among them.

Gangadharan (1994) after analyzing the institutional credit supply pattern in India observed that the five states, viz., Andhra Pradesh, Maharashtra, Uttar Pradesh, Tamil Nadu and Kerala accounted for 60 per cent of the institutional credit to agriculture as against a 39 per cent share in the net sown area. The low credit absorption per hectare in states like Orissa (Rs. 197), Bihar (Rs. 194) and West Bengal (Rs. 443) having rich resources underlined the wide disparity in credit

absorption across the states. Generally, the areas with poor credit absorption capacity were those where infrastructural facilities were not well developed.

Birthal and Singh (1996) examined the factors determining accessibility of institutional credit by the rural households in eastern Uttar Pradesh and the results indicated that the allocation of credit tends to gravitate towards better-off farmers and a majority of the landless and small and marginal farmers have a limited access to institutional credit.

Khan and Tewari (2004) found that the inter-regional disparities in the flow of institutional credit to small farms were found to be larger during the pre-liberalization period and continued to persist in the post-liberalization period too. Further it was found that the Southern region followed by the Western region experienced high growth rates in the per hectare institutional credit flow to both small and non-small farm size groups. It was also expected that the financial institutions would meet the increasing demand of the agriculture sector in a more holistic way, providing extra attention to the lagged regions so that the development with equity in agriculture across the nation becomes a reality in near future.

Khan *et al.* (2007) examined the effect of liberalization on institutional agricultural credit flow and revealed that inter-state disparities in the short-term institutional credit flow to agriculture increased during the pre-liberalization period. They found the inter-state disparity in credit flow to decline during the post-liberalization period. The percentage coverage of average cost of cultivation by short-term institutional credit flow in most of the states had been found abysmally low during the pre-liberalization period and the coverage improved in all the states during post-liberalization period.

Kumar *et al.* (2010) revealed that the quantum of institutional credit availed by the farming households was affected by a number of socio-demographic factors which included education, farm size, family size, caste, gender, occupation of

household, etc. The study had also suggested simplification of the procedure for a better access to agricultural credit of smallholders and less-educated/illiterate farmers.

Patel (2010) reported that the major challenges faced in agricultural credit were designing policies and credit delivery systems that boost farm output and create demand for agricultural products. From the performance review of agricultural credit in India, it was revealed that though the overall flow of institutional credit increased over the years, still substantial gaps persisted in rural financial markets related to significantly inadequate provision of formal credit to small farmers and medium and long term credit to support farm investments and agro-processing industries. Furthermore, the existing legal framework and tenancy related laws have greatly hampered the credit flow and the development of strong and efficient agricultural credit institutions.

#### **2.1.5 Issues of utilization and overdues**

The Reserve Bank of India (RBI) Team on Overdues of Co-operative Institutions (1974) observed that out of a total Rs. 377 crores of overdues at the primary level, the willful default accounted for Rs. 277 crores, which worked out to more than 73 per cent of the total overdues. Another aspect of the problem was that there was hardly any distinction between small and big farmers in the context of willful default (Reserve Bank of India, 1974).

Kher and Jha (1979) reported that the misutilization of production credit was more in cash credit facility. To avoid misutilization of such loans he suggested that early steps should be taken to introduce the crop loan system in all its aspect and credit must be preferably given in kind than in cash. The supervisory staff should have a regular check on sanctioning of the credit and its proper utilization.

Sai *et.al* (1987) conducted a study in West Godavari to examine the overdue pattern and to isolate the reasons for irregular repayment and non repayment of loans,

found that 59 per cent of the sample farmers were non defaulters. Out of them 38.75 per cent were medium farmers followed by marginal and small farmers. The main reason for the default in all the size groups was late accrual of income from the sale of the produce, crop failure etc.

Katula and Gulati (1992) studied and analyzed the evolution of rural credit, the institutional set up, and major problems faced by financial institutions (such as overdues and defaults) in extending credit to the agricultural sector in India. It was estimated that the credit subsidy to agriculture was about 7.36 per cent of outstanding loans during the 1980s: 4.5 per cent of this was due to provision of loans granted at concessional rates of interest, and 2.86 per cent due to loans which are never likely to be repaid. Over the 1980s the amount of loans never likely to be recovered has increased by more than a factor of four, adversely affecting rural finance.

As evident from the above review of literature, the agricultural credit not only strengthens the farming business but also augments the productivity of other inputs used. Even though the performance of institutional credit has increased by many folds over the years; there are several gaps in the system which include inadequate provision of credit to deserving borrowers like small and marginal farmers who were involved in tenancy agreements, in many of the cases. Due to this inadequacy, the poor Indian farmers still approach non-institutional sources for their credit needs and could not wean off themselves from the clutches of the money lenders.

## **2.2 TENANCY FARMING**

Land market in India operates largely through tenancy rather than through outright sale/purchase since ownership of land is considered to be one of the most important sources of security and social status by the cultivators (Bardhan and Rudra, 1978; Jodha, 1981). The impact of land reforms, technological and demographic changes on different aspects of agrarian relations like land distribution, magnitude and types of tenancy has remained a subject of intense debate and discussions.

### **2.2.1. Tenancy relationships**

Soni (1970) reported that on the owner-cultivated holdings, the degree of misallocation of resources declined as the size of the holding increased. Larger farms were market-oriented simply because they had to depend much on the market by way of purchase of inputs as well as sale of farm output. However, in the case of tenant cultivated holdings, the degree of misallocation increased as the size of holding increased.

Bharadwaj and Das (1975) studied tenurial conditions and mode of exploitation in some villages of Orissa. They found that in Orissa agriculture, lessors belong to various sizes of land ownership and pure lessors were insignificant in number. The big lessors generally prefer the landless and marginal cultivating households as their tenants. Through this arrangement, they seek to maximize the indirect exploitation of the tenant's family labour by interlinking land-leases with labour hiring.

Bardhan and Pranab (1976) analyzed the variations in extent and forms of agricultural tenancy across India. Their findings support that households of different size categories participated in the lease market to utilize their indivisible and non-tradable factors of production like family labour, bullock labour, machinery, etc. The nature of crops grown and area under irrigation were also considered to be important determinants of magnitude of tenancy along with these factors.

The need for new amendments in tenancy reform to overcome the problems of concealed tenancy as well as reverse tenancy was highlighted by the National Commission on Agriculture (1976). According to the Commission, the first phase of the post-independence land reforms witnessed certain amendments to the then existing laws, along with legislation for abolition of intermediaries, extending the scope of protection to the tenants in the areas of statutory landlordism. However, the provision of a larger measure of protection of tenants set into motion a contradictory social progress, namely the mass eviction of tenants and sharecroppers. So powerful

was the eviction drive, that in the years immediately following the abolition of intermediaries, the old tenancy arrangements broke down and it took years for new arrangements to take shape (Government of India, 1976).

Murty (1987) concluded that caste elements did not influence the lessor-lessee relationships in Andhra Pradesh. In many cases, even big lessors belonged to the scheduled castes and backward castes while some small lessees belonged to the higher castes such as Brahmin, Kshatriya and Karana. It was striking to note that cultivators belonging to the higher castes did not mind to work as tenants to the lower caste lessors. Irrespective of the caste, the economic necessity of a household was a formidable guide in its opting for leasing in and often for entering into interlocking lease arrangements.

Bhaumik (1991) examined the pattern of resource allocation under alternative tenancy arrangements (share-cropping and fixed rent contracts) in West Bengal, India and found that on the whole, there was a tendency on the part of tenant households to use higher levels of inputs per acre and to achieve better productivity on their owned land compared with land farmed by share-croppers. Such a situation illustrating the negative aspects of crop-sharing system was found to emerge under the presence of ineffective monitoring of tenants' activities by landlords (the Marshallian regime). No significant difference in economic performance, however, existed between the owned and fixed rent plots of tenant households.

Birthal and Singh (1991) evaluated the relationship between land-lease market and resource adjustment in two different agriculturally developed regions of Eastern Uttar Pradesh, viz; Varanasi and Mirzapur districts. It was evident that when the markets functioned imperfectly, inputs were indivisible, uncertainty prevailed and the managerial skills varied across the individuals. All these factors, separately or collectively, were responsible for the emergence of a land- lease market. The

availability of family labour, bullock capacity and managerial skills at the beginning of the crop season determined the desired cultivated area.

Kumar (1991) conducted a study on dimensions of the emerging trend of leasing in Kuttanad area in Kerala state and argued that the trend signifies the inadequacies and shortfalls of land reforms implementation. While land reforms had brought fundamental changes in the earlier agrarian structure of the state, they had not been successful in bringing about radical redistribution of land in favour of landless agricultural workers. Instead, the beneficiaries of land reforms were largely intermediary tenants who were no longer pure agricultural households.

Parthasarathy (1991) revealed that tenancy legislation and the green revolution added to the decline of the lease market since independence in India, leaving many marginal and small producers landless. The issue of technological development within the lease market was analyzed in the context of Punjab and Bihar. It was observed that in Punjab, the lease markets increased for the marginal and semi-medium farming group, eventually falling for larger groups. Leasing-in households showed a distinct inverse relationship with the size of holding in Bihar.

Singh *et al.* (1991) analyzed land-lease market in Punjab and revealed that land-lease activity was increased markedly since the green revolution period. The rent also varied from region to region and it increased by over 300 per cent from 1971-72 to 1987-88. But the increase in land rent had been less in comparison to land prices which increased nearly 400 per cent over the same period.

Bezbaruah and Roy (1992) reported that tenancy had been found to be a hindrance to use high yielding varieties, increasing cropping intensity as well as in applying fertilizers at a higher dose. It was also observed that the practice of sharecropping without sharing of costs adversely affected the tenant farmer's incentive to put in extra effort and resource needed for the use of productivity rising practices.

Chatha and Singh (1992) examined the pattern and operation of land lease market in Punjab and revealed that larger holdings on the whole had much ownership, in order to be more economical, especially due to increased mechanization. About 14 per cent of land was leased, with small farmers having leased out relatively higher percentages of the owned area, because the cultivation of very small sized holdings was found to be not profitable. The practice of leasing land on both cash and crop sharing basis was prevalent in the state.

Sharma (1992) revealed that the decade of 1950s was marked by a decline in the concentration of holdings. The degree of concentration in the distribution of holdings in the early 1980s was strikingly less than that of the early 1950s. There was a decline in tenancy and changes in the nature of tenurial contracts over the years. The study also showed an evidence of a growing tendency for self-cultivation.

Reddy (1993) observed the following structural changes in the post-green revolution phase of Indian agriculture in the specific context of Andhra Pradesh. Firstly, the inverse relationship between farm size and land productivity could not be considered universal. It weakened due to the advent of the new technology in many regions. The existing inverse relationship between farm size and productivity was mainly due to the higher labour intensity on small farms. Secondly, the use of family labour declined and that of hired labour increased with increase in farm size. Thirdly, the small farmers were not able to convert their output advantages into higher net profits due to their higher total expenditure.

Birthal and Singh (1994) reported that the distribution of land was one of the major determinants of the size and nature of the lease markets in Uttar Pradesh. The decisions of the households to enter the lease market were based on the land owned by them and the proportion of owned area irrigated. It was also observed that there was an inverse relationship between owned land and the percentage of operational



area leased-in irrespective of the form of contract. The incidence of tenancy was found to decline with the advancement of technology in agriculture.

Deshpande and Torgal (1994) analyzed land reforms in terms of the evaluation of the administrative processes in Gulbarga district of Karnataka. The district was selected as having the lowest performance in the state, both with reference to tenancy and ceiling cases. An examination of the land distribution records and cases before the tribunal in Gulbarga district illustrated that the implementation of land reforms suffered when the landed elite wielded political power and there was no countervailing pressure from below. It is indicated that some corrective mechanisms in the area of political and administrative functioning were needed for the successful implementation of land reforms.

Mohapatra (1994) analyzed land-lease market interlockings in Orissa agriculture and classified the interlocked structure of land-lease markets into four types: land-labour interlocked market, land-credit interlocked markets, land-labour-credit interlocked markets and land lease market free of any interlocking. The rate of exploitation of tenants was much greater in the land-labour-credit interlocking compared with that under any other form of interlocked lease arrangements. He also concluded that the practices of tenancy cultivation could not be stopped from practical stand point. It should, however, be feasible to eliminate the interlocking elements by strengthening the process of social networks and infrastructures for agriculture.

Narayana and Nair (1994) studied and analyzed tenancy in the context of irrigation uncertainty in Kanyakumari district of Tamil Nadu. From their study, it was revealed that both the incidence and form of tenancy were governed by the irrigation situation and changes in irrigation. Irrigation uncertainty led to a lower incidence of

tenancy and the form itself changed towards sharecropping. A shift was also observed from fixed rent to sharecropping due to the loss of irrigation in the sample villages.

Gyanendra and Pandey (1995) examined the pattern and implications for agricultural structure of sale and lease transactions in Meerut district a highly developed and progressive area in Uttar Pradesh. Data related to the sale/lease transactions in agricultural land collected from a sample of 400 sellers, 400 buyers, 240 lessors and 240 lessees for the year 1991. It showed a shift in marginal and medium farms towards small and large-size groups, respectively, by means of land market transactions and led to the formation of two agrarian groups. They were small farmers just viable enough to meet family subsistence needs and large farmers who were able to exploit commercial farming through heavy capital investment. They also concluded that the beneficial effects of land lease market on productivity growth suggested the need to accord full status to tenancy as a general class of land tenure by protecting the interests of both the owners and tenants.

Sharma *et.al* (1995) examined tenancy relations in Orissa agriculture and found that the institution of tenancy did not had any adverse effect on the use of modern and traditional inputs and level of output both in the agriculturally developed and backward regions and also in irrigated and unirrigated villages. There was however an imposing evidence to indicate that in both the regions and type of villages, share tenancy was disincentive ridden and acts as a barrier to the use of modern and traditional inputs, there by hindering the process of agricultural development. The results of logistic regressions indicated that the availability of irrigation facilities, ownership of land and poverty were the important factors affecting the probability of a household opting for share tenancy.

Besley and Burgess (2000) gave robust evidence of a link between poverty reduction owing to tenancy reforms and abolition of intermediaries. They also

inferred that land reforms also benefited the landless. A reconciliation of this with the process of the marginalization of landholdings in rural India was, however, an analytically challenging task. The dilemma was that: reform measures had helped in poverty reduction, but the average size of a poor landowner's holdings had decreased.

Haque (2000) argued that despite legal restrictions on leasing in most of the states, there was an active land lease market. To this extent, tenancy laws of various states remained largely ineffective and the proportion of leased-in area increased from 7.18 per cent to 8.28 per cent in most of the states during the period 1982-92. Rainfed agricultural regions followed sharecropping as the major form of lease, while in the irrigated and developed regions; the system of sharecropping lease was giving way to a system of lease for either fixed cash or fixed produce. Efficiency and equity depended on who leases in and who leases out and the status of a tenant (regarding security of tenure) in a given rural power structure.

Kumar and Chamola (2000) tried to analyze the extent of factors affecting the leasing activities and contracts in Haryana, an agriculturally progressive area of India. It was observed that there was no significant difference in the land lease market with regard to different categories of farmers as all size groups were engaged in leasing-in and leasing-out activities. The leasing-in and leasing-out activities mainly depended on owned land, size of family, availability of family labour and educational level of the farmers.

Sangwan (2000) attempted to analyze the characteristics of tenancy in the districts of Bhiwani and Kurukshetra, Haryana state, India. His analysis revealed that excess family labour and capacity of machinery were two main factors in the decision of tenant farmers to lease-in land. Tenants accepting strict terms and conditions, and fixed money to be paid in advance have emerged as a dominant mode of payment for leasing-in land, with the annual rent per acre for irrigated land ranging between Rs. 4000 to Rs. 8500.

Smita (2001) examined the land tenure status and terms of tenancy in India, focusing specifically on the variations across farm size, states and social groups. The study showed that changing land tenure status of operational holdings, from tenant to owner-cultivated holdings, seemed to occur at a larger extent due to the sub-division of inherited land and less due to the 'resumption' of rented land for self-cultivation. Although the extent of tenancy both, in terms of holdings and area leased-in had declined, the proportion of tenant holding and rented area was generally higher among the marginal and small sized holdings. Across social groups, the participation of scheduled castes and scheduled tribes in land lease market, at the national level and some major states, was higher. The study indicated a shift in terms of leasing from sharecropping to fixed rental at the all-India level.

Bhowmick *et al.* (2003) conducted a study on the impact of tenancy system on resource use and productivity in Jorhat District of Assam. The results revealed that land productivity was greater among farmers cultivating more owned land than rented land; about 57 per cent of total cultivated land was under ownership and 43 per cent was under rental arrangement. There was no significant difference in the use of power tiller between owned and rented land in the aggregate of rice crops. The relatively better resource endowment position of owner-operator farmers over tenant farmers contributed to their greater use of power tiller per hectare compared to tenant farmers. The tenant farmers cultivated more rented land used more bullock labour per hectare and tenant farmers were equally efficient in resource use and productivity in both owned and rented land.

Awasthi (2005) made an attempt to analyze interspatial total factor productivity of alternative land lease in the Bundelkhand region of Uttar Pradesh. The findings of the study revealed that 50 per cent of the lessees belong to landless and marginal farmers' category whereas about 40 per cent of the lessees belong to small and medium farmers' category. Only seven per cent of large farmers took land on

lease. It was evident from the analysis that the landless and marginal farmers preferred crop yield sharing arrangement whereas medium and large farmers preferred cash rent lease contract.

Barman and Das (2005) studied share tenancy in Assam and concluded that share tenancy was more prominent among small and medium size group of farmers in the state. The main factors influencing share tenancy from the view of tenants to lease-in land were insufficient land to meet the farm family need and surplus labour whereas labour shortage and management difficulties were the main reasons for the land owners to lease- out their land.

Sharma (2006) examined the functioning of Indian land lease market, the prevailing terms of tenancy, and the possible options for reforming the lease market. It was revealed that despite the enactment and implementation of various tenancy laws, concealed tenancy continues to be widely prevalent. However, banning tenancy completely may not be a feasible option. The paper argued for a selective liberalization of the lease market coupled with adequate safeguards to protect the interests of small and marginal farmers.

Nair and Vineetha (2006) conducted some micro-level studies on tenancy in Kerala. They examined tenancy's prevalence across locations and crops, the characteristics of lessors and lessees, the terms of lease, and the income derived from lease cultivation. It was revealed that the prevalence of tenancy reported in micro-level studies was much higher than the situation revealed by large-scale surveys. The tenancy arrangements were confined to seasonal and annual crops and are found largely in paddy lands and, to a limited extent, in garden lands. Agricultural labourers and sub-marginal farmers were numerically dominant in tenant farming. The terms of leasing were characterized by fixed rent. There was some amount of variation in the rent rates across locations and though the prevailing rent rates for cash crop cultivation were high. The tenants could realize reasonable returns from the

lease cultivation.

Sharma (2010) analyzed tenancy in rural India and stated that land issues had attracted attention of both the scholars and policy makers in the wake of ongoing process of liberalization and privatization. It was being increasingly argued that since changing land ceiling levels was politically more sensitive and difficult to implement, the easiest way to reform agrarian structure and activate land markets lies in legalizing leasing-in and leasing-out agricultural land which was not permitted under the existing tenancy laws.

### **2.2.2 Tenancy and institutional credit**

Birthal and Singh (1996) examined the factors determining accessibility of institutional credit by the rural households in eastern Uttar Pradesh and the results indicated that the allocation of credit tends to gravitate towards better-off farmers and a majority of the landless and small and marginal farmers have a limited access to institutional credit. Probability of getting institutional loan increases with borrower's wealth and the adoption of technology improves the credit worthiness of the households and thereby their access to institutional credit. However, the tenants were generally discouraged in allocation of credit by the institutional lenders.

Sangwan (2000) studied the characteristics of tenancy in the districts of Bhiwani and Kurukshetra in Haryana. He found that all the lease contracts were oral and mostly on an annual basis with no financial support from the lessors. The oral lease does not allow tenants access to a formal credit agency for their credit requirement, and compelled most of the tenants to approach informal agencies like arhtias or money lenders for these funds.

Laha and Kuri (2011) studied rural credit market and extent of tenancy in West Bengal and found that the mechanism of land rental market was mostly guided by the availability of rural credit. The types of tenancy contracts to be followed by the

farmers were greatly influenced by availability of rural credit, and fixed rent tenancy was found to occur at a greater frequency with institutional credit. The study also revealed that effective institutional reforms with respect to rural credit were essential to influence the choice of efficient mode of tenurial contract.

From the above review of literature, it is clear that all the lease contracts were mostly oral and hence, restricted tenants' access to a formal credit agency for their credit requirement. This in turn left most of the tenants at the mercy of the informal agencies like money lenders for their capital needs.

## *Materials and Methods*

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### **3. MATERIALS AND METHODS**

This chapter deals with the study area, research methods and techniques used in the study. Besides description of locale, it mainly describes the procedure followed in the selection of districts, villages and respondents, study variables and their measurement procedure, data collection method and use of statistical tools. The chapter is presented in two parts viz., study area and methodology.

#### **3.1 Area of study**

A better understanding of the agro-climatic conditions and socio-economic background of the study area is essential to analyze the data appropriately and to draw meaningful conclusions. Hence, relevant information regarding East Godavari District is presented under the following headings:

##### **3.1.1 Location**

East Godavari District is situated on the North east of Andhra Pradesh in the geographical co-ordination of  $16^{\circ} 30'$  and  $18^{\circ} 20'$  of the Northern latitude and  $81^{\circ} 3'$  and  $82^{\circ} 36'$  of the Eastern longitude. The district covers a vast portion of the delta area of the Godavari river basin. It is bounded on the North by Visakhapatnam district and the state of Orissa, both sides on the East and on the South by Bay of Bengal, on the West and on the Northwest by West Godavari and Khammam districts respectively. It has an area of 10807 Sq.Kms. It can be broadly classified into three agro-climatic zones the delta, the upland and the agency areas. The headquarters of East Godavari District is Kakinada, which is well connected by railways, roadways and Kakinada port with a coastal length of 144 Kilometres.

There are five Revenue Divisions with head quarters at Kakinada, Peddapuram, Rajahmundry, Rampachodavaram and Amalapuram. There are 60 Revenue Mandals and 58 Mandal Parishads in the district. A total of 1011 Gram Panchayats is notified. There are two Municipal Corporations i.e. Kakinada and Rajahmundry as well as seven Municipalities Samalkot, Pithapuram, Peddapuram, Tuni, Ramachandrapuram Mandapeta and Amalapuram.

Table 3.1 Details of East Godavari district at a glance

Sl. No.	Particulars	Statistics
1	Area	10,807 Sq Km
2	No. of Revenue Divisions	5
3	No. of erstwhile Taluks	19
4	No. of Revenue Mandals	60 (58 Rural + 2 Urban)
5	No. of Mandal Praja Parishads	57
6	No. of Gram Panchayats	1011
7	No. of Municipalities	7
8	No. of Municipal Corporations	2
9	No. of Villages	1379

Source: e - Parishkaram, Government of Andhra Pradesh, 2012

### 3.1.2 Land utilization pattern

Out of the total geographical area in the district, nearly one third of the land area was under forests. The area under barren and uncultivable land was 7.31 per cent, while the proportion of area put to non agricultural uses constituted 13.04 per cent. The net sown area was 39 per cent of the total geographical area. Nearly one third of the geographical area was sown more than once. The cropping

intensity in the district was about 168.57 per cent. The details of land utilization pattern of East Godavari district is presented in the Table 3.2.

Table 3.2 Land utilization pattern in East Godavari district during the year 2011-12

Sl. No.	Particulars	Area (in ha)	As % to the total
1	Total geographical area	1081000	100.00
2	Forests	323000	29.88
3	Barren and uncultivable land	79000	7.31
4	Land put to non agricultural uses	141000	13.04
5	Cultivable waste	12000	1.11
6	Permanent pastures and other grazing lands	21000	1.94
7	Land under miscellaneous tree crops and groves not included in net sown area	8000	0.74
8	Other fallow lands	42000	3.89
9	Current fallow lands	24000	2.22
10	Area under fish ponds	6000	0.55
11	Net sown area	420000	38.85
12	Area sown more than once	288000	26.64
13	Total cropped area	708000	65.49
14	Cropping intensity		168.57

Source: Government of Andhra Pradesh, 2012

### 3.1.3 Soils

The main soils in the district are alluvial (clay loamy) soils, red soils and sandy clay soils. The soils are mostly alluvial in Godavari delta area and sandy clay at tail end regions. Uplands and agency area consists of red soils.

### 3.1.4 Climate

The climate is comparatively equitable and although it is very warm in May with a maximum temperature of 38.6<sup>0</sup>C and with a minimum temperature of 20.3<sup>0</sup>C. Month wise maximum and minimum temperature of the district are presented in the Table 3.3.

Table 3.3 Maximum and Minimum temperatures of the district

Month	Mean Maximum Temperature ( <sup>0</sup> C)			Mean Minimum Temperature ( <sup>0</sup> C)		
	Normal (1951-1980)	2006	2007	Normal (1951-1980)	2006	2007
January	28.2	30.1	29.9	19.0	19.5	20.3
February	30.9	32.7	31.2	20.9	20.2	20.7
March	34.0	34	33.2	23.2	24.1	23.8
April	36.2	35.5	35.9	25.9	26.0	25.8
May	37.6	35.9	38.6	27.7	27.5	28.5
June	36.1	36.5	35.3	27.1	27.6	27.3
July	32.4	33.6	33.5	25.7	26.9	26.4
August	32.0	31.8	32.3	25.5	25.8	26.2
September	32.5	32.4	31.6	25.5	25.7	26.1
October	31.5	33.6	31.7	24.5	25.2	24.5
November	29.6	30.1	31.7	21.9	22.9	22.0
December	28.1	30.1	30.2	19.3	20.8	21.2

Source: Chief Planning Officer, Kakinada, 2012.

### 3.1.5 Rainfall

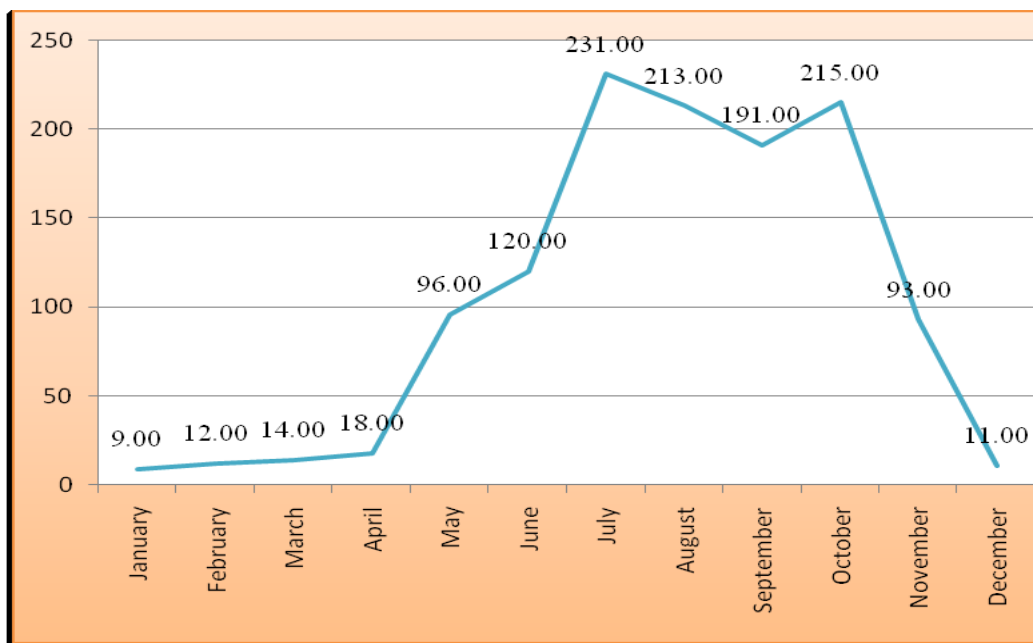
The normal rainfall in the district is around 1217 mm. More than half of the annual rainfall is brought by South West monsoon during the period from June to September. The rest of the rainfall is experienced during the North East monsoon period from October to December. Month-wise rainfall distribution of the district during the year 2010-2011 is presented in the Table 3.4.

Table 3.4 Monthly rainfall in East Godavari during 2011-11

Sl. No.	Month	Normal rainfall (in mm)
1	January	9
2	February	12
3	March	14
4	April	18
5	May	96
6	June	120
7	July	231
8	August	213
9	September	191
10	October	215
11	November	93
12	December	11

Source: Government of Andhra Pradesh, 2012

Fig 3.2 Distribution of normal rainfall in the district of East Godavari



### 3.1.6 Elevation

The General elevation of the district varies from a few feet near the sea to 1500 feet at the hills of the agency. It has rich alluvial soil accounting for 15 per cent of the total area. There is a variety of geological formation, which includes deposits of graphite and pegmatite.

### 3.1.7 Demographic features

As per 2001 Census, there are 1344 inhabited villages, 60 un-inhabited villages and 22 towns in the district with a population of 49.01 lakhs. East Godavari District is one of the most density populated district in the State. The density of population is 454 per Sq.Km. Out of the total population 23.50 per cent lives in urban areas and remaining 76.50 per cent lives in rural areas. A large section of the working population depends upon agriculture for their livelihood.

The demographic features of the district in comparison with the state are presented in the Table 3.5.

Table 3.5 Demographic features of East Godavari District (2001 census)

Sl. No.	Item	Unit	District
1	Area	000'Sq.Kms.	10.807
2	Population	Lakhs	49.01
3	Growth rate over the previous census (i.e. 2001 to 1991)	Percentage	7.93
4	Density of Population	Persons per Sq.Km.	454
5	No. of House holds	Lakhs	12.03
6	a) Rural	Lakhs	9.31
7	b) Urban	Lakhs	2.72
8	House hold size	Persons per house hold	4
9	a) Rural	Nos.	4
10	b) Urban	Nos.	4
11	Male population	Lakhs	24.60
12	Female Population	Lakhs	24.41
13	Sex Ratio	Females for 1000 males	993
14	Rural Population	Lakhs	37.49
15	Urban Population	Lakhs	11.52
16	Literacy rate -Total Population	Percentage	65.50
17	Literacy rate-Males	Percentage	70.00
18	Literacy rate - Females	Percentage	60.90
19	Workers -Total	Lakhs	19.4
20	Workers -Agriculture	Lakhs	12.05
21	Workers - Non Agriculture	Lakhs	7.35

Source: Chief Planning Officer, Kakinada, Government of Andhra Pradesh, 2012

### 3.1.8 Cropping pattern

Table 3.6 Cropping pattern in East Godavari district during the year 2010-2011

Sl. No.	Crop	Area (ha)	% to the total cropped area
1	Paddy	411000	58.05
2	Bajra	1202	0.17
3	Jowar	594	0.08
4	Ragi	379	0.05
5	Maize	7897	1.12
6	Green gram	34000	4.80
7	Black gram	23000	3.25
8	Red gram	785	0.11
9	Horse gram	648	0.09
10	Sesame	1672	0.24
11	Groundnut	566	0.08
12	Chillies	1520	0.22
13	Coconut	49654	7.01
14	Cashew nut	33215	4.69
15	Sugarcane	31267	4.42
16	Banana	25306	3.57
17	Mango	18684	2.64
18	Tapioca	19396	2.74
19	Tobacco	6818	0.96
20	Cotton	7899	1.12
21	Others	32498	4.59
22	Total cropped area	708000	100.00

Source: Chief Planning Officer, Kakinada, Government of Andhra Pradesh, 2012

East Godavari district is one of the agriculturally potential districts in Andhra Pradesh, contributing about 10 per cent of the total food production of the State. The net area cultivated with crops forms about 39 per cent of the total geographical area. Along with West Godavari and Krishna districts, East Godavari district also shares the distinctions of being rice granary of Andhra Pradesh. Paddy constitutes 58 per cent of the total cropped area in the district. The district stands first in cultivation of coconut and banana in the state and



contributes about 36 per cent and 57 per cent of the production in the state respectively. Green gram, black gram, cashew and sugarcane are the other major crops grown in the district (Table 3.6).

### 3.1.9 Irrigation

Table 3.7 shows the sources of irrigation in the district. It can be noted that canal irrigation forms the major type of irrigation in the district. The Sir Arthur Cotton barrage across the river Godavari at Doweleswaram near Rajahmundry is the biggest irrigation and drainage project in East Godavari. The Yeleru irrigation canal covers Peddapuram, Pithapuram, Prathipadu, Jaggampeta, Kirlampudi and Yeleswaram Mandals. The Thandava and Pampa river canals supply water to a limited number of villages in Tuni and Thondangi Mandals. In upland area, there are a few irrigation tanks fed by streams. A good number of tube wells were sunk to supplement ground water irrigation. Lift irrigation is also found in some upland and agency mandals.

Table 3.7 Sources of irrigation in the district

Sl. No.	Source	Gross irrigated area (ha)	% to the total
1	Canals	338000	67.47
2	Tanks	37000	7.39
3	Wells	112000	22.36
4	Others	14000	2.79
5	Total	501000	100.00

Source: Government of Andhra Pradesh, 2012

### **3.1.10 Economy**

The economy of East Godavari district is mainly agriculture based, depending on crops like paddy and coconut apart from aquaculture related to shrimps, crabs and fishes, and poultry farms. There are 115 large and medium scale industries in the district which are rice and sugar based, fertilizers, paper and textile industries. There are small scale industries like agro-based industries, chemical, ceramic, non-ferrous metals, leather also. There are two large-scale fertilizer and chemical factories at Kakinada viz., Nagarjuna and Coromandal fertilizers. The Kakinada Special Economic Zone (KSEZ) will soon have an exclusive of 2000 crores deepwater port for importing and exporting petroleum, biotech, agricultural and other products.

### **3.1.11 Banking**

There are 485 bank branches operating in the East Godavari district, out of which 172 are rural branches, 159 are semi urban branches and 154 are urban branches. A total of 40 scheduled banks are transacting business in the district. Out of the 40 public sector banks, three are from State Bank Group. There are also 14 private sector banks, one District Co-operative Central Bank, one Regional Rural Bank (Chaitanya Godavari Grameena Bank), one foreign bank (Barkeleys Bank) and one branch of A.P State Financial Corporation in the district. Andhra bank, a public sector bank is the Lead Bank of the district.

### **3.1.12 Scale of finance**

Scale of finance refers to the average per unit working capital requirement of a crop enterprise on a compact agro climatic area, viz.,the district. It is evolved and used on per acre, per hectare or per tree basis. The scale of finance for

important crops in the district during the year 2011-2012 is presented in the Table 3.8.

Table 3.8 Scale of finance for important crops in the district during 2011-2012

Sl. No.	Name of the crop	Scale of finance (Rs. per acre)
1	Paddy ( <i>Kharif</i> )	17000
2	Paddy ( <i>Rabi</i> )	18000
3	Pulses	2500
4	Banana	40000
5	Sugarcane- plantation	28000
6	Sugarcane- ratoon	16000
7	Tapioca	9000
8	Coconut with intercrop	14500
9	Mango with intercrop	13000
10	Cashew	10000

Source: Andhra Bank, 2012

## 3.2 Methodology

### 3.2.1 Selection of study area

As tenancy is legally banned in the state of Kerala, the study could not be conducted there. On the other hand, tenancy is allowed in the state of Andhra Pradesh and regulated legally. Hence, the state of Andhra Pradesh was purposively selected for the study. East Godavari district in Andhra Pradesh was also purposively selected as tenancy was widely prevalent in the area. Based on the secondary data collected from collectorate, Kakinada, the three villages viz.,

Plate 3.1 Map of East Godavari District



Kadali, Antharvedipalem and Lakkavaram representing maximum concentrationtenancy cultivation, were selected for the study.

### **3.2.2 Selection of farmers**

The list of tenant farmers was collected from the respective village revenue offices and 20 farmers from each village were selected at random from the list. The institutional sources in the villages from where the sample farmers had availed credit were selected for studying the bankers' constraints in credit delivery.

### **3.2.3 Collection of data**

Both primary and secondary data were collected for the study. The secondary data pertaining to study area such as land utilisation pattern, cropping pattern, irrigation intensity, demographic features, etc. was collected from Collectorate, Kakinada. Relevant information regarding Loan Eligibility Cards (LEC) was collected from respective village offices. Information on credit schemes available for tenants was gathered from various banks and Primary Agricultural Co-operatives in the study area. The primary data used for the study were collected by interviewing the respondent farmers personally by a pre-tested, well- structured survey schedule.

The information regarding the constraints faced by bankers was collected by conducting detailed discussions with the bank managers secretary of the PACS in the area and agricultural officers in the study area.

### **3.2.4 Period of study**

The primary data pertains to the agricultural year 2011-2012. The data collection was carried out during the period of February- March, 2012.

### 3.2.5 Main items of observations

The main items of observations made were

- a) Major socio-economic characteristics of the sample farmers such as land holding size, farming status, family size, level of education, labour force and working force status, cropping pattern and tenurial conditions.
- b) Cost- return statements of major enterprises
- c) Yield level
- d) Marketing system for major enterprises
- e) Availability of institutional credit to tenant farmers including various bank schemes available for tenant farmers, sources of credit, amount of credit disbursed and details of credit acquisition costs.
- f) Constraints experienced by tenant farmers in accessing institutional credit
- g) Constraints experienced by bankers in credit delivery to tenant farmers.

### 3.2.6 Analytical framework

Based on the nature and extent of availability of data, tabular and percentage analysis were carried out to meet the specific objectives of the study. The technique of tabular analysis was employed to evaluate the socio-economic characteristics of the sample farmers, pattern of resource use on owned and leased land, yield and income measures, and credit related aspects that fall under the study.

The behavioural model used to examine the factors influencing credit access of a farmer was a logit model based on logistic cumulative distribution function. The model can be specified as:

$$Y_i = g(Z_i) \dots\dots\dots (1)$$

$$Z_i = \alpha + \beta_k X_{ki} \dots\dots\dots (2)$$

where

$Y_i$  = credit availability status of the borrower ( $Y = 1$  for availing institutional credit and  $Y=0$  for non availing institutional credit)

$Z_i$  = an underlying and unobserved response for the  $i^{\text{th}}$  farmer

$X_{ki}$  =  $k^{\text{th}}$  explanatory variable for the  $i^{\text{th}}$  farmer

$i$  = 1, 2, 3.....N, where N is the number of farmers

$K$  = 1, 2, 3.....M, where M is the total number of explanatory variables

$\alpha$  = constant

$\beta$  = unknown parameter

The logit model postulates that  $P_i$ , the probability of the  $i^{\text{th}}$  farmer accessing institutional credit is a function of an index variable  $Z_i$ , summarizing a set of the explanatory variables. In fact,  $Z_i$  is equal to the logarithm of the odds ratio, i.e., the ratio of probability of a farmer accessing institutional credit to the probability that he does not do so and it can be estimated as a linear function of explanatory variables ( $X_{ki}$ ). Formally, it can be expressed as:

$$Z_i = \ln (P_i / 1 - P_i) = \alpha + \beta_k X_{ki} \dots\dots\dots (3)$$

Once this equation is estimated,  $P_i$  can be calculated as

$$P_i = F (Z_i) = F (X_{ki}) = 1 / 1 + e^{-Z_i} \dots\dots\dots (4)$$

$$= 1 / 1 + e^{-(\alpha + \beta_k X_{ki})} \dots\dots\dots (5)$$

where, e denotes the base of natural logarithm with a value approximating 2.718

The parameters of the logit model were estimated directly using maximum likelihood method. The estimation procedure has a number of desirable statistical properties. All parameter estimators are consistent and also efficient asymptotically (Maddala, 1986). The logistic coefficients can be interpreted as the change in log odds ratio associated with one unit change in the independent variable.

The explanatory variables under consideration for  $i^{\text{th}}$  farmer were

$$X_{1i} = \text{age}$$

$$X_{2i} = \text{paddy } rabi \text{ owned land}$$

$$X_{3i} = \text{paddy } rabi \text{ leased}$$

$$X_{4i} = \text{area under coconut}$$

$$X_{5i} = \text{education}$$

$$X_{6i} = \text{experience in farming}$$

$$X_{7i} = \text{total gross margin}$$

$$X_{8i} = \text{possession of Loan Eligibility Card (LEC)}$$

The Hosmer-Lemeshow test was used to test the goodness of fit for the specified model. The test statistic is obtained by applying a chi-square test on a  $2 \times g$  contingency table. The contingency table is constructed by cross-classifying the dichotomous dependent variable with a grouping variable (with  $g$  groups) in which groups are formed by portioning the predicted probabilities using the percentiles of the predicted event probability. The goodness of fit statistic is computed as

$$\chi^2_{\text{HL}} = \sum_{k=1}^g \frac{(O_{1k} - E_{1k})^2}{E_{1k}(1 - \beta_k)}$$

The  $p$  value is given by  $p(\chi^2 \geq \chi^2_{\text{HL}})$  where  $\chi^2$  is the chi-square statistic distributed with degrees of freedom  $(g-2)$  [ Hosmer and Lemeshow, 2000]. The estimation was carried out by the SPSS package, 16.0 version.



### 3.2.7 Concepts and working definitions

The following concepts and working definitions were used in the study.

a) Tenure status

Farm operators in an area can be owner cultivators or tenant cultivators. Tenant is a person who pays rent to the landlord for the use of land. These tenant cultivators can be of two types, owner tenants and pure tenants. Owner tenant possess some owned holding along with his leased in holding, while the pure tenant is the one who solely depends on leased in land for cultivation.

b) Operated holding size

Operated holding size refers to the total area possessed by a sample farmer excluding land used for non-agricultural purposes.

c) Net sown area

Net sown area (NSA) is defined as the total area under the cultivation of different crop enterprises by a sample farmer during a particular year. It consists of the operated holding excluding current fallow.

d) Gross sown area

Gross sown area (GSA) refers to the NSA plus the area sown more than once in a particular year.

e) Cropping pattern

Cropping pattern is defined as the proportion of area under different crops under different crops in a farm at a point of time (Takaya, 1975).

a) Cropping intensity

Cropping intensity measures the extent of land use for the production of the crops during an agricultural year (Reddy *et al.*, 2004).

It is estimated as:

$$CI (\%) = (NSA/GSA) * 100$$

b) Irrigated area

Irrigated area in the study refers to the cultivated area put under irrigation at least once in a year using canals as a source of irrigation.

c) Irrigation intensity

Irrigation intensity is the gross irrigated area expressed as a share of gross sown area in percent.

d) Labour use

All labour use patterns involved in the crop enterprises including irrigation were reckoned at labour days of 8 hours per day, and the wage rates prevailing in the study area were taken for converting physical units into monetary units.

j) *Components of operational costs*

i) Cost of land preparation

The cost on land preparation accounted for a remarkable component of the cultivation cost. No farmer has reported the use of animal power for land preparation. Apart from the use of mechanical power for land preparation, male and female labourers were also employed to carry out the operations like formation of bunds and levelling of the fields. The average wage rate prevailing in the area ranged from Rs. 200/day for male labourers and Rs.150/day for female labourers.

ii) Cost of seeds

No farmer has reported the usage of own farm seeds obtained from the previous crop. All the seed materials were purchased from the market and were valued at the purchase price.

iii) Cost of organic manures

Organic manures were not used by any of the sample farmer in case of coconut; cow dung was applied as organic manure by some of the farmers. Soil amendments like silt, clay and sediments were applied to coconut fields. These were valued at the prevailing rates in the area. Actual costs of these items were calculated considering the transportation costs also, wherever applicable.

iv) Cost of chemical fertilisers

The cost of chemical fertilisers used was calculated based on the actual prices plus transportation costs paid by the sample farmer.

v) Cost of plant protection chemicals

The cost includes the cost of plant protection chemicals used against pest and diseases in crops. No farmer reported use of bio-pesticides.

vi) Cost of fuels

Cost of fuel includes cost on diesel incurred in connection with the operation of the motor pump sets for irrigation.

vii) Cost of hiring machinery

It includes cost of hiring machineries like tractors, minitractors, sprayers, electric motors etc. the actual rent paid was taken as cost for this item.

iii) Land rent

Leasing was highly prevalent in the area especially in case of paddy. Therefore, the rent paid by tenant farmers formed an additional cost component in such cases. Land rent was paid in kind (bags of paddy grain) by the tenant farmers. The value of land rent was calculated by converting rent paid in kind into monetary terms using the prevailing market price of paddy grains.

iv) Gross margin

Gross margin was obtained by deducting the operational expenses from the gross income realised (Johnson, 1991).

k) *Credit concepts*

1. Sources of credit

Sources of credit were broadly classified into two types, institutional and non-institutional sources. Institutional sources include Co-operatives, Commercial Banks and Regional Rural Banks. Non- institutional sources include money-lenders, landlords, input dealers, relatives, etc.

2. Credit acquisition cost

Credit acquisition cost is the interest cost plus credit transaction cost.

### **3.2.8 Constraints experienced by tenant farmers in accessing credit**

The constraints were enumerated and ranked from the farmers view in the order of importance assigned by them. The ranks were assigned based on the scores measured on a scale of 1-6, depending upon the relative importance attributed by the respondent farmers.

## *Results and Discussion*

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## **4. RESULTS AND DISCUSSION**

The present study entitled “Access to institutional credit: An economic analysis of tenant farming in East Godavari District of Andhra Pradesh” was carried out based on primary data. This study was undertaken with the specific objective of investigating the operational problems faced by both the tenants and bankers in credit delivery, and to suggest policy fine tuning to overcome the bottlenecks. The results and discussion of the study are presented in this chapter under various sections as given below.

4.1 Socio-economic characteristics of the sample farmers

4.2 Cost-return statements of major enterprises

4.3 Marketing aspects of major enterprises

4.4 Availability of credit to tenant farmers

4.5 Determinants of access to institutional credit

4.6 Constraints experienced by the tenants in accessing credit

4.7 Constraints experienced by the bankers in delivering the credit

### **4.1. Socio-economic characteristics of the sample farmers**

It is widely known that the socio-economic characteristics of a farmer will have influence on the technical and physical efficiency of his production unit. The important decisions like enterprise selection, resource allocation, resource utilization, farming practices, technology adoption etc. directly or indirectly depend upon the socio-economic and bio physical endowments of the farmer. Hence, the analysis of socio-economic characteristics has been taken up and presented below under the various headings:

#### 4.1.1. Land use analysis

Land has the characteristic of its fixity in supply and scarcity. Therefore, land use pattern is directly concerned with the problem arising in the process of deciding upon and carrying out into action the optimum use (Singh and Lekhi, 2010). The details of land use and production pattern of the study area are analyzed and presented in the Table 4.1

Table 4.1 Land use analysis

Particulars	Area (ha)	As percentage to the total cropped area
Total owned area	18.06	-
Area not available for cultivation	1.16	-
Current fallow	0.18	-
Total owned net sown area	16.72	-
Cropped area under leasing in	80.35	-
Cropped area under leasing out	0.40	-
Net cropped area (NSA)	97.47	40.74
Area sown more than once	141.79	59.26
Gross sown area (GSA)	239.26	100.00

The total net sown area of the sample respondents was 40.74 per cent of the gross sown area. Nearly 59 per cent of the cultivated area was sown more than once. Rabi season paddy, black gram and green gram are the short duration crops cultivated in this context. While, the total leased in area held by the sample farmers was 80.35 ha. It is evident from the statistics that tenancy was more prevalent in the study area. Less than one ha was found to be current fallow. A single farmer alone had leased out holding.

#### 4.1.2. Farm size status

Adequate size of farm is essential for proper utilization of land and other farm resources (Rai *et al.*, 1981). In attaining economies of scale, size of operational holding is considered to be crucial. The selection of crop mixes, allocation and utilization of resources depend upon the size of operational holding. Therefore analysis of farm size status is important in understanding the decision making process of a farm household.

Table 4.2 Details of owned, operated and leased in land

Category	Owned		Leased in	
	No. of farmers	Operated area(ha)	No. of farmers	Leased in area(ha)
Marginal	49 (81.67)	74.07 (75.27)	54 (90.00)	72.13 (89.77)
Small	5 (8.33)	14 (14.22)	5 (8.33)	7 (8.71)
Large	1 (1.67)	3.26 (3.31)	1 (1.67)	1.22 (1.52)
Total	55 (91.67)	91.33 (92.81)	60 (100.00)	80.35 (100.00)

Figures in parenthesis indicate percentage to the respective totals

##### 4.1.2.1. Owned holding size

Out of the sixty sample farmers, 55 farmers were found to possess owned holding, representing 91.67 per cent of the total farmers. The rest five farmers, constituting 8.33 per cent were pure tenants cultivating only on leased in land. The first category (marginal) denotes the farmers who possess below one hectare of owned land holding. Majority (81.67 per cent) of sample farmers was found to fall under this category. The operated area of the sample farmers belonging to this category was 75.27 per cent. The second category (small) farmers were those who possess land holding between one to two hectares. They constituted 8.33 per cent of the sample size, which comprised 14.22 per cent operated area of the respondents. Lastly, the large farmers, (having more than 2 hectares) were found



to constitute only 1.67 per cent of the total farmers. They covered an operated area of 3.31 per cent. It can be understood that the marginal followed by small farmer categories respectively, were largely involved in leasing to expand their farm holding in order to attain economies of scale in farm operations.

#### **4.1.2.2. Leased holding size**

From the analysis of leased holding size, it was observed that majority (90 per cent) respondents belonged to marginal farmer category. Small farmer category constituted 8.33 per cent followed by large farmer category representing 1.67 per cent of the sample farmers. It can also be noted that the highest percentage (89.77 per cent) of leased in area was held by marginal farmer category and the lowest (1.52 per cent) was held by large farmer category. Small farmer category comprised of 8.71 per cent of leased in area belonging to the sample respondents.

#### **4.1.3. Tenurial status**

According to the Andhra Pradesh (Andhra area) tenancy act, 1956, tenancy is permitted in the state, but it is regulated. Tenant farmers can be of two types, owner tenants and pure tenants. Owner tenants possessed owned holding along with his leased in holding, while the pure tenant is the one who solely depends on leased in land for cultivation.

Table.4.3. Tenurial status

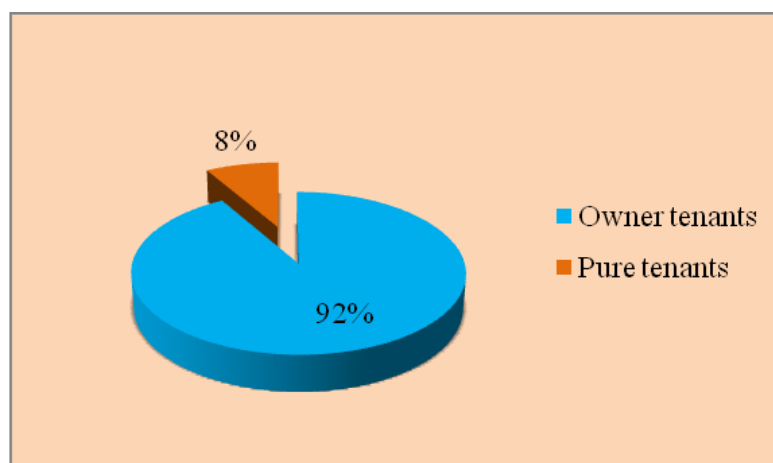
Category	No. of farmers	Operated area (ha)+
Owner tenants	55 (91.67)	91.33 (92.81)
Pure tenants	5 (8.33)	7.08 (7.19)
Total	60 (100.00)	98.41 (100.00)

Figures in parenthesis indicate percentage to the respective totals

+includes owned land plus leased in land

From the Table 4.3, it was observed that 91.67 per cent of the sample farmers were owner tenants. Majority under this category possessed only residential accommodation as their owned holdings. They accounted for more than 90 per cent of the operated area. Pure tenants comprised of only 8.33 per cent of the sample respondents. They possessed just 7.19 per cent of the total operated area in the study area.

Fig 4.1 Tenurial status



#### 4.1.4. Family size status

The households of different size categories participate in the lease market to utilize their indivisible and non-tradable factors of production like family labour (Bardhan and Pranab, 1976). Considering the significance of family size, data on size and composition of family were collected and presented in Table 4.4.

The average family size of the sample farmers was found to be 4.56, out of which 2.2 were males and 3.36 were female members. The average family size was highest (6) for large farmers and the lowest (3.4) for small farmers. Marginal farmer category showed the average family size of 4.28. The average male members were highest (70.59 per cent) in small farmer category and the lowest (33.33 per cent) in large farmer category, while the average female members were

the highest (66.67 per cent) and the lowest (29.41 per cent) for large and small farmer categories respectively.

Table.4.4. Average family size of sample farmers (number per household)

Category	Male members per household	Female members per household	Average family size
Marginal	2.20 (51.40)	2.08 (48.60)	4.28 (100.00)
Small	2.40 (70.59)	1.00 (29.41)	3.40 (100.00)
Large	2.00 (33.33)	4.00 (66.67)	6.00 (100.00)
Overall mean	2.20 (48.25)	3.36 (51.75)	4.56 (100.00)

Figures in parenthesis indicate percentage to the respective totals

#### 4.1.5. Labour force status

According to the Planning Commission (1980), all family members who belong to the productive age group of 15-59 years are included under the labour force category. Details of labour force status of the sample farmers were collected and presented in Table 4.5.

Table.4.5. Labour force status (number per household)

Category	Children	Members in labour force	Old age members	Total family members
Marginal	0.65 (15.19)	3.19 (74.53)	0.44 (10.28)	4.28 (100.00)
Small	0.00 (0.00)	2.80 (82.35)	0.60 (17.65)	3.40 (100.00)
Large	2.00 (33.33)	4.00 (66.67)	0.00 (0.00)	6.00 (100.00)
Overall mean	0.88 (19.29)	3.33 (73.03)	0.35 (7.68)	4.56 (100.00)

Figures in parenthesis indicate percentage to the respective totals

It was observed that on an average, a good percentage (73.03 per cent) of labour force was available in the families of sample respondents. The labour force was found to be 74.53 per cent, 82.35 and 66.67 per cent for marginal, small and large farmer categories respectively.

#### 4.1.6. Working force status

Though the number of family members and its composition can furnish an indication regarding the availability of family labour, it can in no way, present an accurate picture of the actual labour force that takes part in agricultural operations on a day to day basis. For this, an analysis of the working members on the households is considered to be of extreme importance. Table 4.5 presents the details of working force status of the sample respondents.

Table 4.6 Working force status (number per household)

Category	Average working force		Total
	Male	Female	
Marginal	1.19 (77.27)	0.35 (22.73)	1.54 (100.00)
Small	0.80 (66.67)	0.40 (33.33)	1.20 (100.00)
Large	1.00 (100.00)	0.00 (0.00)	1.00 (100.00)
Overall mean	1.00 (80.00)	0.25 (20.00)	1.25 (100.00)

Figures in parenthesis indicate percentage to the respective totals

From the analysis, it was observed that the average working force available for the sample respondents was found to be 1.25, comprising 80 per cent males and 20 per cent female members. Across various categories, average male working force was comparatively higher than average female working force. It could be due to the social stigma prevailing among the upper class families that does not encourage female members to work on the farms. As the female agricultural labour were paid Rs. 150 per day in the area, some female members belonging to small and marginal categories would like to go for working on other farms to earn the monetary income.

#### 4.1.7. Educational status

Education helps farmers to take sound decisions in respect of choice of crops, inputs and techniques of production and influences agricultural productivity positively. Besides, it increases farmers' access to information regarding input supply, institutional credit, marketing, prices, etc. (Duraismy, 1992; Tilak, 1993). The distribution of sample respondents according to their level of education is presented in Table 4.7.

Table 4.7 Educational status of sample respondents (number of households)

Category	Illiterates	Primary school	High school	Secondary school	Graduate	Total number of farmers
Marginal	12 (22.22)	26 (48.15)	15 (27.78)	1 (1.85)	0 (0.00)	54 (100.00)
Small	2 (40.00)	1 (20.00)	0 (0.00)	1 (20.00)	1 (20.00)	5 (100.00)
Large	1 (100.00)	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)	1 (100.00)
Total	15 (25.00)	27 (45.00)	15 (25.00)	2 (3.33)	1 (1.67)	60 (100.00)

Figures in parenthesis indicate percentage to the respective totals

From the analysis, it was revealed that the percentage of literates in the total sample was about 75 per cent while the rest 25 per cent were illiterates. Majority (45.00 per cent) of the sample farmers were having primary school education followed by high school education (25.00 per cent) and secondary school education (3.33 per cent). Only one respondent was graduate.

#### 4.1.8. Farming status

The rural non farm sector is found to be less developed in Andhra Pradesh. Temporary migration has now become a routine part of livelihood strategies of the rural poor. Adverse climatic conditions prevailing in the state since two years

made agriculture non remunerative. The small holders of land who could not eke out their subsistence from their holdings either sell or lease out their holdings and join the army of farm labourers or migrate to urban areas in search of some work. It is in this context that the farming status of the sample farmers are being analyzed and presented in Table 4.8.

Table 4.8 Farming status of the sample farmers (number of households)

Category	Full time	Part time	Total
Marginal	43 (79.63)	11 (20.37)	54 (100.00)
Small	5 (100.00)	0 (0.00)	5 (100.00)
Large	1 (100.00)	0 (0.00)	1 (100.00)
Total	49 (81.67)	11 (18.33)	60 (100.00)

Figures in parenthesis indicate percentage to the respective totals

Table 4.8 reveals that majority (81.67 per cent) of the sample farmers were full time farmers and part time farmers represented only 18.33 per cent of the sample respondents. It can also be noted that among the three categories, only marginal farmer category consisted of 20.37 per cent of part time farmers.

#### 4.1.9. Cropping pattern

Cropping pattern refers to the proportionate area put under different crops at a point of time (Takaya, 1975). Cropping pattern of a region are decided by and large, by a number of soil and climatic parameters which determine over all agro ecological setting for nourishment and appropriateness of a crop or a set of crops for cultivation. However, individual farmers are influenced by potential production and monitory advantages also in making a choice of cropping pattern.

It is against this background that the cropping pattern of the sample farmers are analyzed and depicted in Table 4.9.

Table 4.9 Cropping pattern (cultivated area in hectare)

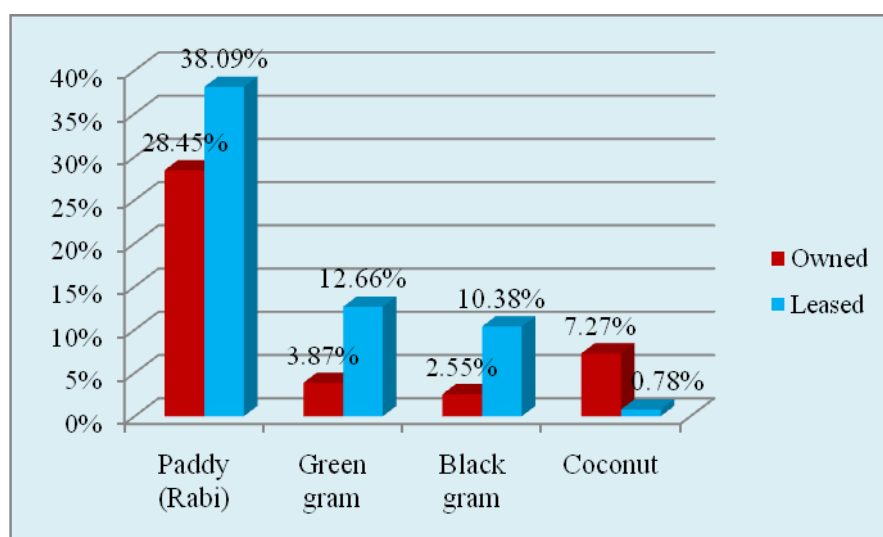
Crop	Owned cultivated area(ha)	Leased in cultivated area(ha)	Total
Paddy ( <i>Rabi</i> )	9.04 (39.77)	78.73 (61.53)	87.77 (58.24)
Green Gram	3.87 (17.03)	26.15 (20.44)	30.02 (19.92)
Black Gram	2.55 (11.22)	21.46 (16.76)	24.01 (15.94)
Coconut	7.27 (31.98)	1.62 (1.27)	8.89 (5.90)
Total	22.73 (100.00)	127.96 (100.00)	150.69 (100.00)

Figures in parenthesis indicate percentage to the respective totals

The East Godavari district of Andhra Pradesh is located in the delta region of Godavari basin. Irrigation wise, this is the most developed region in the state. The major source of irrigation is through the Doweleswaram barrage canals. With the availability of irrigation facilities, it is possible for the farmers to take up double cropped paddy in the area. Paddy cultivation is carried out during both *kharif* and *rabi* seasons by the farmers in the study area. But in the year 2011, *kharif* season was declared as a crop holiday by the farmers in the Konaseema region and the paddy fields were left as fallows in the sample area. This was accounted due to various reasons like high cost of cultivation not covered by minimum support price (MSP), an ineffective procurement system, low storage capacity, crop failures on account of frequent cyclones, improper maintenance of the drainage system, late release of canal waters, non availability and high cost of labour and lack of suitable farm machinery (Government of A.P, 2011). The general cropping sequence followed is rice-rice-pulse. Out of the total gross sown area, the proportion of cultivated area under paddy is generally equal for both *kharif* and *rabi* seasons. *Rabi* paddy accounted for morethan half of the total

cropped area. Pulses are taken as the third crop which is cultivated on the residual moisture of *rabi* paddy. The seeds are broadcasted before the harvesting of *rabi* paddy. Due to the widespread prevalence of Yellow Mosaic Virus, the cultivation of pulses as the third crop is on the decline. Green gram and black gram accounted for 19.92 per cent and 15.94 per cent of the gross cropped area respectively. Coconut accounted for just 5.90 per cent of the gross cropped area. Being a perennial crop, it was cultivated only on the owned land and not leased land, due to the fear of claiming permanent rights by the tenants over the land. Thus, the cropping pattern did not exhibit any significant difference between the owned and leased land except for the crop coconut.

Fig 4.2 Cropping pattern on owned and leased land



#### 4.1.10. Farm Investment

Investment is the change in the physical capital stock during an accounting year (Zepede, 1997). Investment decisions on a farm are influenced by factors like farm size, tenure security, savings, capital and credit availability, cost of credit and attitude towards risk (Zepede, 1997; Olubanjo *et al.*, 2007). It is in this context that the farm investment behaviour of the sample farmers is studied here.



The details of the farm investment pattern of the sample farmers are furnished in the Table 4.10.

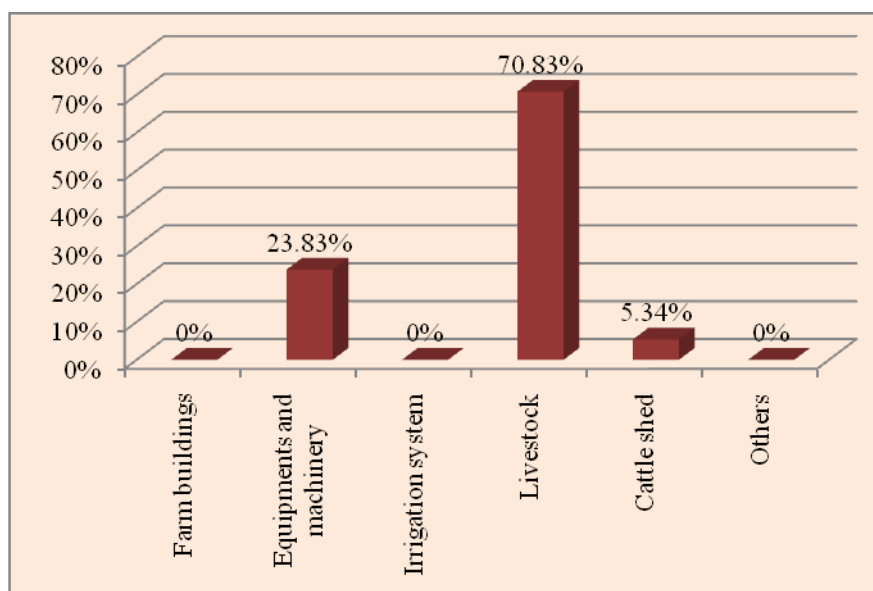
Table 4.1.10 Farm Investment Pattern

Particulars	Amount (Rupees per household)	Percentage to total
Farm buildings	0.00	0.00
Equipments and machinery	6365.00	23.83
Irrigation system	0.00	0.00
Livestock	18916.67	70.83
Cattle shed	1425.00	5.34
Others	0.00	0.00
Total	26706.67	100.00

It was observed that a greater portion of the farm investment (70.83 per cent) made by the sample respondents was on livestock. Around 90 percent of the farmers, who have small size of holdings, were found to rear milch cattle. The straw, by product of the major crop paddy, was best utilized as a feed to the cattle. Moreover, livestock rearing provides an additional income to the farm income which helps in raising the living standards of the farm families. Even though livestock population was found to be high, investment made on cattle shed accounted for only 5.34 percent (Fig.4.3). This is because almost all the cattle sheds were either thatched or the cattle shelter is provided in the space at the lean back type. Farm equipments and machinery constituted 23.83 percent of the total farm investments made by the sample farmers. Most of the farmers had only hand sprayers, a few had power sprayers and power tillers. Two farmers had mini tractors, having the market value of Rs. 1,00,000. This contributed to the average higher investments on farm equipments and machinery. Overall the total farm

investments made by the sample farmers were found to be very low. This is because the sample respondents were mostly marginal farmers who did not possess the financial ability to invest heavily on the farm assets. Secondly, even if they had invested, the fixed capital would remain underutilized. Permanent investments could not be made by these farmers as they were involved mostly in leasing of land.

Fig 4.3 Farm investment pattern



#### 4.1.11. Method of irrigation and irrigation intensity

The Sir Arthur Cotton barrage is constructed across the river Godavari at Dowleswaram near Rajahmundry. It is the biggest irrigation Project in East Godavari. All the sample farmers in the study area were using the canal irrigation method by using the water supplied by the irrigation channels of the Doweleswaram barrage. The irrigation intensity of the sample farmers were estimated and presented in Table 4.11.

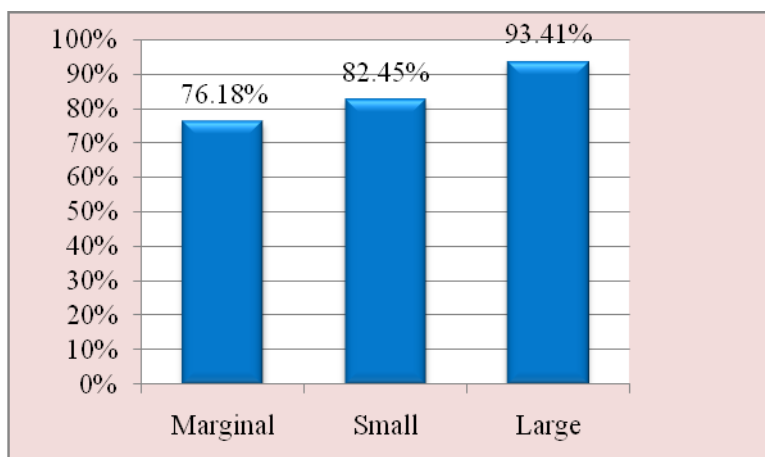
The irrigation intensity was worked out as a percentage of irrigated area to the total cultivated area. The total irrigation intensity in the study area was 77.35

per cent. It meant that more than two third of the cultivated area were brought under irrigation. The irrigation intensity for marginal, small and large farmer categories was 76.18 per cent, 82.45 per cent and 93.41 per cent respectively, there by meaning that as the farm size increased, irrigation intensity also increased (Fig.4.4). Paddy and coconut were the two crops which were cultivated under irrigation in the study area. Both the crops were irrigated through canals. As the irrigation water was available throughout the year except for a brief period of one month, farmers did not make any water saving irrigation investments like drip or sprinklers in cultivating the perennial crops like coconut.

Table 4.11 Details of irrigation intensity of the sample farmers

Category	Irrigated area(ha)	Gross cropped area(ha)	Irrigation intensity (%)
Marginal	155.89	204.64	76.18
Small	22.88	27.75	82.45
Large	5.67	6.07	93.41
Total	184.44	238.46	77.35

Fig 4.4 Irrigation intensity



#### 4.1.12. Cropping intensity

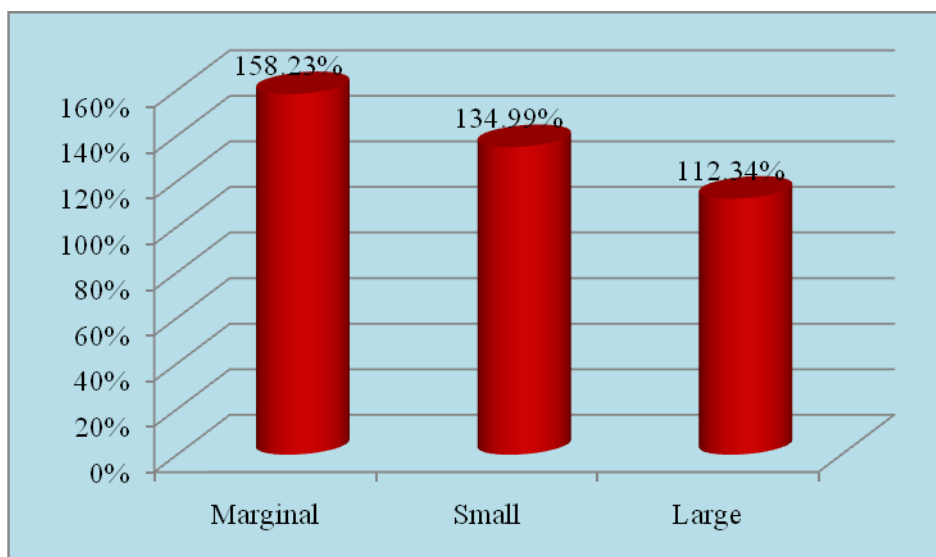
Cropping intensity refers to the ratio of the gross cropped area to the net sown area expressed as a percentage. This measure reflects the intensity with which the land is utilised during one agricultural year. As discussed by Bezbaruah and Roy (2002), both farm size and tenancy have been found to have a significant bearing on increasing cropping intensity. It is in this context that cropping intensity of the sample farmers was estimated and presented in Table 4.12.

Table 4.12 Cropping intensity

Category	Net sown area(ha)	Gross sown area (ha)	Cropping intensity (%)
Marginal	79.57	125.90	158.23
Small	13.86	18.71	134.99
Large	3.24	3.64	112.34
Total	96.67	148.5	153.61

It was observed that the cropping intensity in the study area was 153.61 per cent. This cropping intensity of more than 100 percent was due to the cultivation of paddy in *rabi* followed by the pulse crop on the same piece of land. Cropping intensity was found to be decreasing with the increase in farm size. The cropping intensities for marginal, small and large farmer categories were 158.23, 134.99 and 112.34 per cent respectively (Fig.4.5). Authors like Wasim (1995) have already reported evidences of inverse farm size - cropping intensity relationship in Southeast Asia. The small farmers continued to follow their traditional patterns of higher cropping intensity driven by lower farm income compared to the large farmers who have relatively lesser cropping intensity driven by higher farm income.

Fig.4.5 Cropping intensity



## 4.2. Cost-return statements of major enterprises

The major crops cultivated in the study area were paddy and coconut. The cost-return statements of these crops were analyzed and presented under the following headings.

### 4.2.1 Operating expenses of Rabi paddy

As discussed under section 4.1.9, the farmers had declared a crop holiday for *kharif* paddy during the year 2011-12, hence the operating expenses for *rabi* paddy only could be calculated. The paddy was the major crop in which tenancy was practised by the sample farmers. A comparison between the operating expenses of paddy cultivated in owned and leased in holdings was presented in the Table 4.13.

Table 4.13 Operating expenses of rabi paddy (Rs/ha)

Particulars	Owned land	Leased land
Human labour	27189.77 (66.43)	27296.36 (55.13)
Seeds	1546.33 (3.78)	1597.27 (3.23)
Chemical fertilisers	4641.89 (11.34)	5087.20 (10.27)
Plant protection chemicals	2585.45 (6.32)	2771.59 (5.60)
Machinery hiring charges	4891.35 (11.95)	4892.59 (9.88)
Micronutrients	71.76 (0.18)	88.48 (0.18)
Lease	0.00 (0.00)	7775.99 (15.70)
Total operating expenses	40926.55 (100.00)	49509.76 (100.00)

Figures in parenthesis indicate percentage to the respective totals

It was observed that a lion's share (more than 50 per cent) of the operating expenses in paddy was constituted by the human labour component. It was due to intensive utilisation of labour in cultivating paddy traditionally rather than using improved technology of mechanisation or herbicides. The increased dependence on human labour on each and every operation accounted for this large share of human labour in the operating expenses. The farmers used more intensively on seeds, chemical fertilisers and plant protection chemicals on the leased land because the additional expenses of lease (rent) was also be met to meet the tenancy obligations. Land rent was paid generally in kind. The most common practice was to charge approximately nine bags of grain per acre. The land rent was not uniform and varied between the sample farmers, depending upon the land fertility difference. However, on percentage terms, there was no perceptible difference on the various input expenses on human labour. Surprisingly, the human labour intensity was less on the leased land. On an average, it costed a farmer Rs.40926/ha to cultivate one hectare of paddy in the season while it was Rs. 49510/ha in the leased land including the rent. The scale of finance during the

year 2011-12 was Rs. 41990/ha in the district. This was found to be adequate in meeting the operational expenses of paddy on owned land but inadequate to meet the operational expenses by a tenant farmer. This was due to the additional rental charges paid by the tenant farmers to the landlords for using the land for cultivation. There was no consensus on the resource use pattern efficiency on the tenancy agriculture. Authors like Bhaumik (1991) have examined the issue in the state of West Bengal and found that the tenant households used higher amount of inputs per unit area to achieve better productivity on owned land compared with land farmed by sharecroppers. Authors like Yokoyama (1995), Sadaulet *et al.* (1997) and Sharma (2005) argued that there was no significant difference in the levels of input use across tenancy and ownership. It was also argued by Sharma (2005) that, there was no strong evidence to support the hypothesis that yields under share tenancy were lower than owner farming. However, authors like Bhowmick (2003) have reported differences in resource use intensity in tenant and owner operated farms. For instance, in Jorhat district of Assam he came across more intensive use of bullock power in tenant cultivation while owner cultivated farms used more tillers instead of animal power. According to Awasthi (2009), there was a higher level of input use like labour, farm energy, capital, chemicals and seed use in informally leased fields, which increased the level of land productivity as compared to that of owned land.

Fig 4.6 Operating expenses of paddy (*rabi*) on owned and leased land

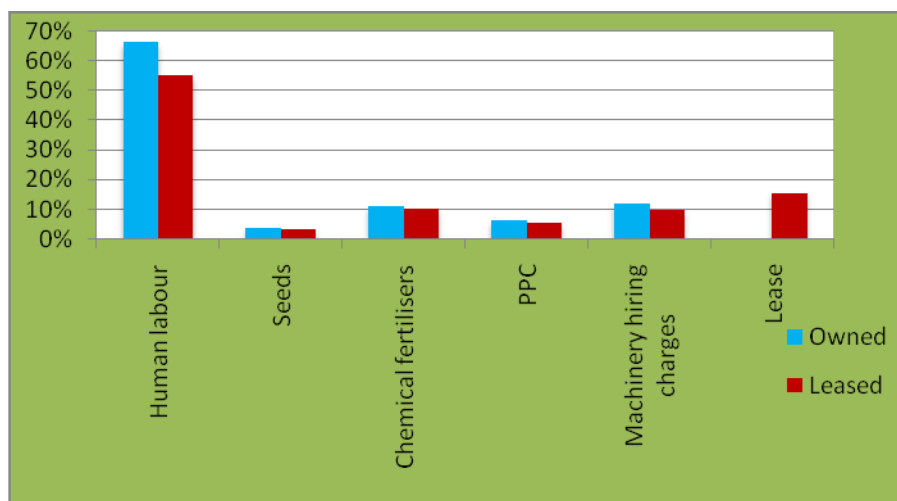


Plate 4.1 Harvesting process in progress in *rabi* paddy



Plate 4.2 Threshing of *rabi* paddy



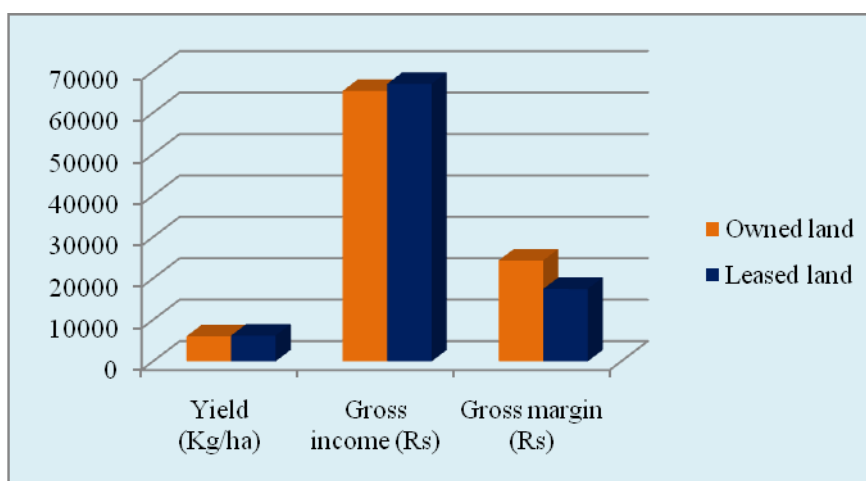


Table 4.14 Yield per hectare, gross income and gross margin of paddy

Particulars	Owned land	Leased land
Yield (Kg/ha)	6042.68	6201.76
Gross income (Rs)	65260.93	66978.99
Gross margin (Rs)	24335.59	17469.23

Table 4.14 shows that the yield of *rabi* paddy obtained from the leased land was higher (6201.76 Kg/ha) than that was obtained (6042.68 Kg/ha) from owned land. It could be understood from the Table 4.13 that, the higher yields were due to the higher input use intensity on the leased land over the owned land to reduce the production risk. The gross returns from the leased land were also higher than that of owned land. However, the gross margin of the sample farmer was found to be relatively lower (Rs. 17,469.23) for leased land, compared to that of owned land (Rs. 24335.59). This was due to the extra costs incurred by the tenant farmer in paying an amount of Rs. 7776 per hectare towards the land rent.

Fig 4.7 Yield per hectare, gross income and gross margin of paddy



#### 4.2.2 Operating expenses of coconut

Coconut (*Cocos nucifera*) was the second most important crop after paddy, cultivated in the study area. As discussed under section 4.1.9 coconut

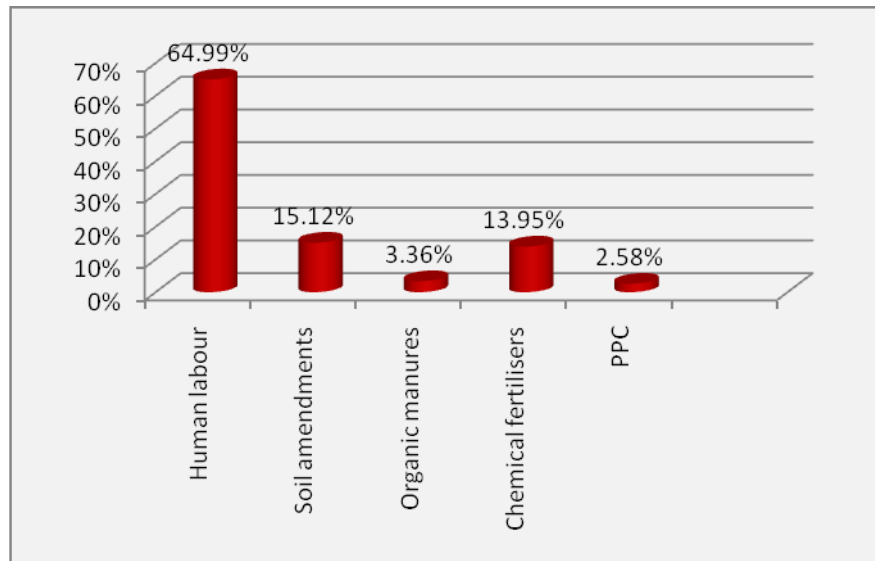
being a perennial crop, its cultivation was mostly restricted to owned land. As there was a lot of variation in the spacing of plants, palm density differed considerably across the farms. Hence, the operating expenses of coconut were not worked out on a per hectare basis. Instead, it is being estimated and presented per palm basis in Table 4.15.

Table 4.15 Operating expenses of coconut

Particulars	Operating expenses (Rs/palm)	% to the total
Human labour	141.87	64.99
Soil amendments	33.01	15.12
Organic manures	7.33	3.36
Chemical fertilisers	30.44	13.95
Plant protection chemicals	5.64	2.58
Total operating expenses	218.29	100.00

It was observed that a major share (64.99 per cent) of the operating expenses was constituted by human labour followed by soil amendments (15.12 per cent) and chemical fertilisers (13.95 per cent). Generally, farmers applied mud, silt and sediments as soil amendments once in two to three years to improve the soil properties and to maintain the soil level. The expenses on plant protection chemicals and organic manures constituted 2.58 per cent and 3.36 per cent respectively. Even though, the farmers had enough number of livestock, the application of organic manure was on the decline. This was due to the increased market demand for cattle manure by fishery and aquaculture enterprises that are mushrooming in the area. Currently, one truck load of cattle manure fetches Rs. 1500 to the farmer. So, he prefers selling the cattle manure instead of applying it to own fields.

Fig 4.8 Operating expenses on coconut



The total expenses incurred by the sample farmer on maintaining each palm was Rs.218.29. The scale of finance during the year 2011-12 for the district was Rs. 207.14/palm. It may be noted that even though the scale of finance was not sufficient in meeting the operating expenses of coconut, it was very close to the required amount.

Table 4.16 Details of yield, gross income and gross margin of coconut

Yield (Nuts/palm/year)	Gross income (Rs.)	Gross margin (Rs.)
119	297.66	79.37

Out of the total coconut production in Andhra Pradesh, about 36 per cent of the production was from the district, East Godavari. The yield of coconut in the study area was around 119 nuts per palm in a year. The gross income was found to be Rs. 297.66. After meeting the operating cost towards maintenance of the palms, the sample farmer was left with a margin of Rs. 79.37 for each palm. It can be noted that the yield of coconut was reasonably good in the study area and more

Plate 4.3 A typical coconut garden in the study area



Plate 4.4 Coconut bunches ready for harvest



than the national average. The price of coconut was Rs. 2.50/nut at the time of survey. The prevailing low price was due to decreased market demand and increased availability of nuts. There was widespread prevalence of eryophid mite infestation in the area, which also contributed to less market price realisations.

### **4.3 Marketing aspects of major enterprises**

According to the National Commission on Agriculture (1976), agricultural marketing is a process which starts with a decision to produce a saleable farm commodity, and it involves all the aspects of market structure or system, both functional and institutional based on technical and economic considerations and includes pre and post-harvest operations, assembling, grading, storage, transportation and distribution.

In view of the crop holiday declared by the farmers for the *kharif* paddy in the study area, the state government provided input subsidies to the farmers through the co-operatives and Department of Agriculture, with a motive to encourage the farmers in paddy production. About 50 per cent subsidy was given on fertilizers and 75 per cent subsidy on seeds. The quantity of fertilizers were limited to 250 kg of urea, 125 kg of DAP and 62.5 kg of potash per ha of cultivated area. However to avail the subsidies, the farmer had to show water tax receipts or pattadar passbooks. In case of tenant farmers, water tax receipts along with the Loan Eligibility Cards (LEC) were needed to avail subsidies. Many of the sample farmers could not get these benefits due to lack of LEC cards and in some cases water tax receipts were not given by the landowner to avail subsidies. Hence, most of the farmers depended upon private input sellers for seeds, fertilizers and plant protection chemicals. Instead of buying inputs in spot market, farmers borrowed inputs from the input dealers due to insufficient capital. There were many instances of charging extra Rs. 10 to Rs. 20 above the market price per unit by the input dealers. This could be understood as exploitation of tenant farmers by the local input dealers who took the advantage of lending the inputs to the farmer whenever required and collected more prices per unit during the

repayment. Thus, most of the farmers were indebted to village money lenders, traders or landlords. They were often found to undertake distress sale of their produce at low prices to village traders or commission agents. In some cases, farmers preferred to sale the produce at the farm gate, to avoid transportation costs and other labour costs involved in loading and unloading the produce. The prevailed farm gate price of paddy during the *rabi* 2011-2012 was around Rs. 10.80 per kg of paddy grain. The main marketing channels for paddy in the study area were:

Producer → commission agent → miller → wholesaler → retailer → consumer

Producer → village trader → miller → wholesaler → retailer → consumer

Even though paddy purchasing centres (PPCs) were established by the state government and the purchasing price was higher (Rs. 11/kg), farmers preferred to sell the produce at the farm gate to avoid transportation costs and labour costs involved in moving the produce from farm to PPCs and also the possible delay in cash settlement.

As far as the marketing of the coconut is concerned, the whole quantity of nuts was sold to the village traders at the farm gate itself. Around seven nuts for 100 nuts were deducted by the traders towards handling, transportation, commission charges etc. The marketing of coconut was done totally to the private traders, and there was no government mechanism as in the case of paddy. There was also no co-operative marketing intervention in the study area. The main marketing channels for coconut were:

Producer → village trader → wholesaler → retailer → consumer

(For sale as raw nuts)

Producer → village trader → oil miller → wholesaler → retailer → consumer

(cum copra maker)

#### **4.4 Availability of credit to tenant farmers**

The mechanism of land rental market was mostly guided by the availability of rural credit (Laha and Kuri, 2011). Hence, the availability of credit to tenant farmers has been examined under the following headings.

##### **4.4.1. Bank schemes available for tenants**

Institutional credit to tenant farmers is gaining importance now. Recently, National Bank for Agriculture and Rural Development (NABARD) had planned to extend assistance to tenant farmers through Joint Liability Groups (JLGs) as part of financial inclusion in the country. In spite of the guidelines from NABARD, there was a wide reluctance to advance credit to tenant farmers. Considering the serious crisis faced by the tenant farmers in the state, the Andhra Pradesh government came out with an Act to provide tenant farmers access to institutional credit. The Andhra Pradesh Loan and Allied Benefits Eligibility Card (for permissive cultivation) Act, 2011 issued Loan Eligibility Cards (LEC) to tenant farmers without assigning any right or interest over the land under tenancy. These cards enabled the tenant cultivators to access credit from public financial institutions and to claim input subsidy, crop insurance and compensation for damages to crop. The validity of the card was up to one year commencing from 1<sup>st</sup> May and ending on 30<sup>th</sup> April of subsequent year. It however could be renewed for period of one year each. This was the only scheme available for tenant farmers in all public sector banks like co-operatives, commercial banks and regional rural banks. The loans issued through these cards were considered as crop loans and charged an interest rate of seven per cent per annum. Later on, claim would be sent by the issuing bank to the Department of Agriculture for repayment of four per cent interest rate as subsidy to the farmers. Thus, the net interest rate for a farmer with prompt repayment would be three per cent per annum. The maximum limit of loan amount that could be issued through LEC was Rs. 1, 00,000.

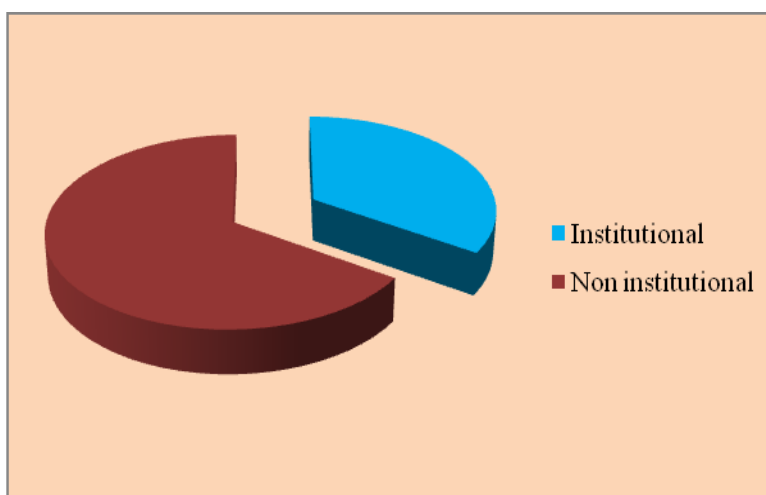
#### 4.4.2. Amount and sources of credit

Credit is an important element of agricultural production, allowing producers to satisfy the cash needs induced by the production cycle during which very little cash revenue is generated (Feder *et al.*, 1990). Agricultural credit, thus, provides flow to the system of farm operations averting capital crisis which would have occurred due to lack of financial capacity of farmers. The details of amount and sources of credit for the sample farmers were presented in the Table 4.17.

Table 4.17 Amount and sources of credit

Source	Amount of credit disbursed (Rs/ha)	Percentage to the total
Institutional	15937.37	34.28
Non institutional	30549.37	65.72
Total	46486.74	100.00

Fig 4.9 Amount and sources of credit



It was observed that nearly two third of the credit requirement of the sample farmers was met by the non institutional sources and only one third was met from institutional sources. According to Birthal and Singh (1996), tenants



were discouraged to approach the institutional credit agencies for loans. This discrimination against tenants was due to their inability to offer land collateral as security. As already discussed by Shangwan (2000), the oral lease contracts does not allow tenants to access a formal credit. This compels most of the tenants to approach informal agencies like arhtias, money lenders or landlords for these funds, leaving the tenants at the mercy of these money lenders. Various forms of exploitation like charging exorbitant rate of interest were also prevalent.

#### 4.4.3. Cost of credit

Credit acquisition cost involves the primary cost viz., the expenses on interest and the credit transaction costs. The transaction cost includes cost of documents, photographs, travel costs, loss of wages, legal costs, and costs of inspection and gratification, if any. The details of cost of credit for various agencies in the study area were collected and presented in the Table 4.18.

Table 4.18 Cost of credit (Rupees per Rs. 100 advanced)

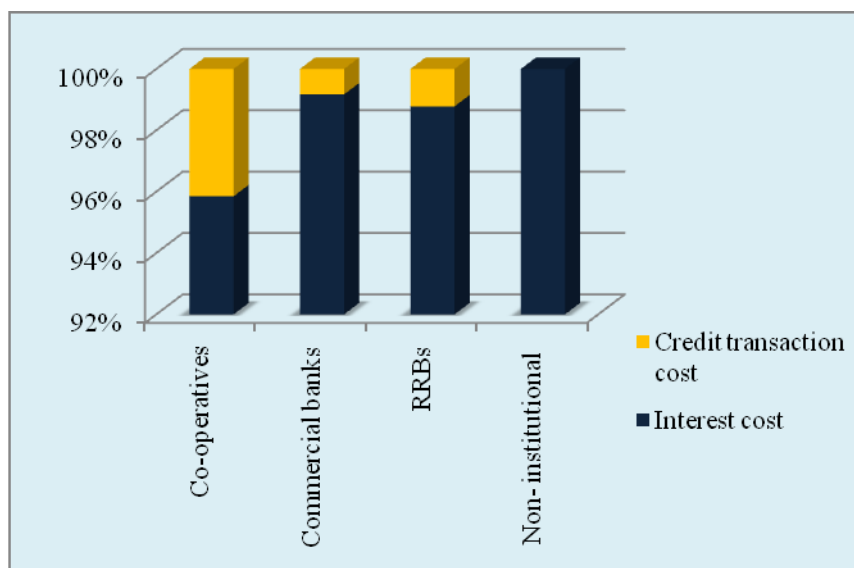
Particulars	Co-operatives	Commercial banks	Regional rural banks	Non-institutional sources
Interest cost	3.00 (95.85)	8.34 (99.17)	6.48 (98.78)	30.51 (100.00)
Credit transaction cost	0.13 (4.15)	0.07 (0.83)	0.08 (1.22)	0.00 (0.00)
Credit acquisition cost	3.13 (100.00)	8.41 (100.00)	6.56 (100.00)	30.51 (100.00)

Figures in parenthesis indicate percentage to the respective totals

It was observed that the interest rate charged by the non-institutional sources was exorbitantly higher (Rs. 30.51) than any other institutional source. Among the institutional sources the interest rate was lowest (Rs.3.00) for Co-operatives followed by Regional Rural Banks (RRBs) (Rs. 6.48) and

Commercial Banks (Rs.8.37). The co-operatives were found to have disbursed more number of crop loans to tenant farmers through the LEC scheme. This was due to the political as well as pressure from revenue officials. As discussed under the section 4.4.1, the net interest rate paid by the farmers for crop loans would be three per cent per annum if they are prompt in repayment. Being a short term loan, the repayment of the principal and interest due are to be made in one instalment as lump sum amount. Though the interest rate was low, in many cases, the maximum amount delivered by Primary Agricultural Co-operative Societies (PACS) was only Rs. 5000 for the sample farmer irrespective of his size of holding, which was found to be inadequate in meeting the cultivation requirements. The loans disbursed to the sample farmers by the commercial banks and RRBs were mostly Agricultural Demand Loans against Gold (ADLG). The interest rate varied between seven to nine per cent. The institutional agencies generally advanced credit against tangible and immovable collaterals as it was easier for the lenders to verify ownership of the assets to be pledged without much cost. The credit transaction costs of the sample farmers included expenses made against photographs, applications and photocopies of pattadar passbooks, LEC cards and other documents. The costs were highest (Rs.0.13) for co-operatives followed by RRBs (0.08) and commercial banks (Rs. 0.07). Over all the total credit acquisition cost was highest (Rs. 30.51) for non-institutional sources as expected. Among the institutional sources, the credit acquisition cost was highest (Rs. 8.41) for commercial banks followed by RRBs (Rs. 6.56) and co-operatives (Rs. 3.13). This analysis provided strong evidence that the informal sector provided adequate credit, but these advances are expensive in terms of primary cost due to their restricted area of operation and information advantage about the borrowers, they could keep transaction cost to the minimum. However, they exploited poor tenant borrowers by charging usurious rates of interest.

Fig 4.10 Cost of credit



#### 4.5 Determinants of access to institutional credit

A logistic regression function was fitted to analyze the factors influencing access to institutional credit by tenant farmers in the study area. The Wald forward step wise estimation procedure (Maddala, 1986) was followed with estimation termination when parameter estimates changed by less than 0.01. The results of the analysis were presented in the Table 4.19 and 4.20. The signs of the estimated coefficients were as expected and according to a priori logic.

Table 4.19 Goodness of fit for the specified model

Step	-2 log likelihood ratio	Hosmer and Lemeshow $\chi^2$ statistic
1	72.896	ns
2	68.130	ns

It may be noted from Table 4.19 that -2 log likelihood ratios were considerably high in step1 and step2, though -2 log likelihood ratios got reduced in step2. The Hosmer and Lemeshow  $\chi^2$  statistic was not significant, which indicated that the expected frequencies considered by the model were reasonably close to the observed values, with a forecast accuracy of 66.7 and 75.0 respectively in step 1 and step 2.

Table 4.20 Variables in the regression equation

Step		B	S.E	Wald	df	Sig.	Exp(B)
1 <sup>a</sup>	LEC	1.222	0.567	4.651	1	0.031	3.394
	Constant	-0.087	0.417	0.043	1	0.835	0.917
2 <sup>a</sup>	Paddy RO	1.159	0.632	3.360	1	0.067	3.187
	LEC	1.578	0.622	6.447	1	0.11	4.846
	Constant	-0.663	0.520	1.625	1	0.202	0.515

a. Variable (s) entered on step 1: LEC

b. Variable (s) entered on step 2: paddy RO

In the first step, only Loan Eligibility Card (LEC) was included and significant at five per cent level. In the step 2, owned area under paddy during *rabi* season was also included in the model but statistically not significant at five per cent level. The logistic coefficients could be interpreted as the change in the log-odds ratio associated with one unit change in the explanatory variable. In other words, the possession of Loan Eligibility Card by a tenant farmer could improve the log likelihood ratio of accessing institutional credit by 1.222. The results indicated that the most critical determinant influencing access to institutional credit was the LEC, designed specifically by the state government to include tenant farmers in the fold of institutional credit.

#### 4.6 Constraints experienced by the tenants in accessing credit

It is often alleged that the benefits of the institutional credit expansion have largely accrued to the well off farmers and a majority of rural poor have remained outside the institutional network (Swaminathan, 1993). Various constraints faced by the sample farmers were enumerated and the scores in order of their incidence were presented in the Table 4.21.

Table 4.21 Constraints experienced by the sample farmers

Constraints	Scores
Non availability of institutional credit	209.00
High cost of credit charged by non institutional sources	163.00
Inadequacy of credit	63.00
Untimeliness of credit	14.00
Landowners' objection to give LEC cards to tenant farmers	101.00
Loans outstanding by landowners on the leased out land	23.00

It was observed that the major problem faced by the sample farmers was non-availability of institutional credit driving them to the clutches of money lenders. It had the highest score of 209 points. The constraints like higher cost of credit for non-institutional sources and land owners objection to give LEC cards to avail institutional credit were the other major problems faced by the sample farmers. Inadequacy of credit, delay in credit disbursal and the outstanding liability of land owners on leased land were also reported, but of less importance as perceived by the sample farmers.

#### 4.7. Constraints experienced by the bankers in delivering the credit

After understanding the constraints experienced by the sample farmers in availing the institutional credit, the difficulties posed by the bankers in delivering

the credit were also thoroughly studied. In order to probe into the problems of bankers, detailed discussions were held with various officials like managers of commercial banks and RRBs, secretaries of PACS and agricultural officers in the study area. According to the secretaries of the PACS, there were absolutely no difficulties in delivering credit to tenant farmers without any demand of collateral security because of political will and state government policies in this regard. But the major problem faced by the co-operatives was inadequacy of funds with them. And also as the LEC scheme was newly introduced and there was no certainty in renewal of the cards, the loan amount disbursed was kept as low as Rs. 5000 per borrower irrespective of their size of holding. According to the managers of commercial banks and RRBs, the complicated procedures involved in the disbursement of credit to tenant farmers were the major hurdle. The documents needed to disburse credit to tenant farmers had too many complications like demanding signature of the landlord on the documents in the presence of bank officials. Practically, such procedures were difficult to follow and as the bank officials could not act beyond the rules and regulations at their own risk, generally tenant farmers were discouraged from availing credit from their institutions. Thus, it can be concluded that in spite of NABARD's guidelines to extend assistance to tenant farmers through Joint Liability Groups (JLGs) as part of financial inclusion in the year 2008, financial inclusion would have remained a distant dream for the tenant farmers, but for the loan eligibility cards issued by the State Government. But, the present procedural shortcomings in the operation of the loan eligibility cards are to be rectified to make it more effective and farmer-friendly.

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## *Summary and Conclusion*

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## 5. SUMMARY AND CONCLUSION

The formal financial system plays an important role in financing the needs of the agricultural sector in India. In order to facilitate timely and adequate credit flow to agriculture, the sector has been targeted as a part of the priority sector for the lending programmes in 1969 with an emphasis on 'social banking'. Domestic commercial banks have been directed to allocate 18 per cent of net bank credit to agriculture and allied activities. The directed credit programme has clearly resulted in a significant increase in the amount of credit allocated to agriculture over the years. According to the Reserve Bank of India, Rs.4,76,550 crores have been pumped into the agricultural sector as institutional credit as on 31-3-2012 against a target of Rs.4,75,550. However, the increased amount of agricultural credit and its outreach over the years are accompanied by several qualitative issues like timeliness, adequacy, cost and access. Inclusive financing, ie., the delivery of financial services at affordable costs to sections of disadvantaged and low income segments of the society on par with access to any public good needs more scrutiny as banks are increasingly getting preoccupied with look into the total quantity of credit disbursed in a financial year. The growing spectra of financial exclusion in agriculture, providing livelihood to more than two third of our population, particularly of small and marginal holders, and tenant farmers merit more attention in this context. The inability to offer collaterals stands between them and the institutions despite many state initiatives. It is against this background that an attempt was made to study the operational problems faced by the tenants in accessing institutional credit and bankers in credit delivery, so as to suggest policy measures to overcome the bottlenecks.

The study was based on both primary and secondary data. The secondary data relates to the details of the study area such as land use pattern, climate, cropping pattern, demographic features, infrastructure facilities and the scale of finance. The primary data pertaining to the agricultural year 2011-2012 were collected through personal interview, using a pre-tested schedule of enquiry from

60 representative farmers in East Godavari district by simple random method. The data collection was carried out during the period of February-March, 2012.

The study revealed that the institution of tenancy was widely prevalent in the study area, especially in case of seasonal crops like paddy. Tenancy was not encouraged in perennial crops. About 33.69 percent of the total gross cropped area was found to be under leasing. Among various categories of farmers, the marginal farmer category formed the major group (90 per cent) of respondents who were largely involved in leasing in activities. The owner tenants, who possessed both owned and leased in land as their operational holdings, were found to be in large number (55) as compared to the pure tenants (5). Hence, the maximum operated area (92.81%) in the study region was held by owner tenants, while only 7.19 per cent of the total operated area was held by pure tenants.

The farmers in the study area usually cultivated paddy in both the seasons *kharif* and *rabi*, followed by pulse crop like green gram or black gram in the summer season. But the recent *kharif* season was declared as a crop holiday by the farmers in the area due to various reasons like high cost of cultivation not covered by minimum support price (MSP), an ineffective procurement system, low storage capacity, crop failures on account of frequent cyclones, improper maintenance of the drainage system, late release of canal waters, non availability and high cost of labour and lack of suitable farm machinery.

The total operating expenses on *rabi* paddy was found to be higher (Rs.49510/ha) on leased land as compared to the owned land (Rs. 40926/ha). This difference was accounted due to higher level of input use on leased land, besides the cost incurred towards paying rent (Rs. 7776/ha) to the land owner. Also, the scale of finance (Rs. 41990/ha) was found to be inadequate in meeting the working expenses of a tenant farmer, while it was sufficient in case of owner cultivated lands.

Income realized from *rabi* paddy by tenant farmers were relatively higher (Rs.66979/ha) as compared to that of owner cultivators (Rs.65261/ha). But the

higher income could not leave a good gross margin for the tenant farmer, after the rent being paid to the landlord. Even though subsidies were provided by the state government, the actual tiller was not benefitted due to inefficient monitoring of the system. The exploitation of tenant farmers by the input dealers and village traders was observed in common in the study area. Distress sales at low prices were also reported by many respondent farmers. The paddy purchasing centres established by the state government were found to be ineffective in delivering their services to the tenant farmers.

As expected, the non-institutional sources dominated the rural credit scene in providing credit to the tenant farmers. The major constraints reported by the respondent farmers were non availability of institutional credit and the high interest rate charged by the money lenders, which usually touched upon the usury levels of 24-36 per cent per annum. In spite of guidelines from NABARD to finance oral lessees through JLGs, banks were very reluctant to deliver credit to tenant farmers due to various field level problems involved in it. Inability to offer land collateral by the oral lessees was also an important constraint in accessing institutional credit.

The logit regression analysis illustrated that the scheme of LEC introduced by the Andhra Pradesh Loan and Allied Benefits Eligibility Card (for permissive cultivation) Act was successful in providing formal credit to the tenant farmers, especially cooperative credit with police support and political will from the State Government. The possession of Loan Eligibility Card by the tenant farmers was found to be the most significant determinant in accessing credit from institutional sources also, but to a lesser extent due to procedure difficulties.

Based on the findings of the study, the following policy implications are being suggested.

- a) As the non-availability of inputs including seed, fertilizer, and an inefficient output marketing systems were the major constraints faced by the farmers, there shall be the government intervention to establish

an efficient marketing system in major crop enterprises. The functioning of existing Paddy Purchasing Centers should be improved. In case of coconut, proper marketing channels should be established by providing marketing through co-operatives.

- b) To avoid distress sales of the produce at the farm gate, by the tenant farmers, credit facilities should be made available for marketing of the produce to ensure a remunerative price to the farmer for his produce.
- c) The scale of finance was inadequate in case of tenant farmers in meeting the working expenses on the leased holding. Hence, the fair rent amount shall also be included as a component of scale of finance in areas where leasing is widespread to cover the additional costs including rent paid by the tenant farmer in line with the crop insurance premium.
- d) NABARD introduced a scheme for financing tenant farmers through JLGs. The tenant farmers were scattered and there were difficulties in formation of groups by the farmers. Hence, campaigns should be conducted to motivate the tenant farmers for group formation, wherever a potential exists.
- e) As the efforts by Government of Andhra Pradesh with the pilot scheme to help the needs of tenant farmers through entitlement to the lessee to input and loan eligibility card (LEC) was successful, the scheme shall be extended to all districts in the state with more flexible eligibility criteria. In some cases, the owner farmers appeared to entertain certain apprehensions about the implications of this initiative, resulting in strained relations between owner and tenant, awareness campaigns

should be conducted in such areas to the landowners, in order to remove their apprehensions in this regard.

- f) Only co-operatives were found to implement the scheme of Loan Eligibility cards in full enthusiasm due to support from liason departments and also due to political pressure. Even though the cards improved tenant farmers' access to institutional credit considerably, the amount of credit disbursed per farmer was very low. The other institutional agencies like commercial banks and RRBs were found reluctant to deliver credit through these cards because of the complicated procedures involved in it. Hence, State level Bankers' Committee shall look into this aspect and make the possession of lec card a primary eligibility criteria for crop loan from commercial banks and RRBs also. Similarly, there is an every need to simplify the procedures and disbursement of credit to tenant farmers should be made easy.

# *Appendices*

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## Appendix I

**KERALA AGRICULTURAL UNIVERSITY  
COLLEGE OF HORTICULTURE  
KAU P. O  
Vellanikkara, Thrissur  
Department of Agricultural Economics**

**Access to institutional credit: An economic analysis of tenant farming in East  
Godavari District of Andhra Pradesh**

### MSc (Ag) Programme

The information furnished will be only used for the research purpose and the data will be kept strictly confidential

### SURVEY QUESTIONNAIRE

Village:

Panchayat:

#### I. Individual Details

1. Name of the farmer:
2. Age:
3. Address:

4. Telephone Number:

5. Education of the farmer:

- a. If code is 6, specify the course:

Class	Code
Up to primary school	1
Up to high school	2
Up to secondary school	3
Graduate	4
Post Graduate	5
Technical Qualifications (if any)	6
Others (if any)	7

6. Full time/ Part time:

- a. If part time, specify main occupation and average monthly income

7. No: of years engaged in agriculture:

## II. Family details

Sl No.	Name	Relationship with the respondent	Education	Occupation	
				Main	Subsidiary
1					
2					
3					
4					
5					
6					

*Code: Relationship with respondent:* 01- spouse, 02- father/ mother 03-, son/ daughter, 04- son/daughter-in-law, 05-granddaughter/son, 06-grandfather/mother.

*Education:* 01- up to 12, 02- graduate, 03- post graduate, 04- technical qualification, 05- others.

## III. Details of land holding (acre)

Sl No.	Particulars	Unirrigated	Irrigated	Total area
1	Owned			
2	Leased in			
3	Leased out			
4	Area available for cultivation			
5	Current fallow			
6	Area available for cultivation more than once			
7	Prevailing rent in the area (Rs)			
8	Land cess/acre (Rs)			

#### IV. Cropping Pattern

a) Owned land

Cropping season	Area (acres)	Variety	Yield (kg/acre)
Kharif (Autumn)			
1.			
2.			
Rabi ( winter)			
1.			
2.			
Zaid (Summer)			
1.			
2.			

b) Leased in

Cropping season	Area (acres)	Variety	Yield (kg/acre)
Kharif (Autumn)			
1.			
2.			
Rabi (Winter)			
1.			
2.			
Zaid (Summer)			

## V. Tenurial conditions

Crop/ enterprise	Mode of tenancy	Type of lease agreement	Rent paid/crop season	Number of years under lease contract

*Code: Mode of tenancy- 01-fixed rent tenancy, 02-share cropping; Type of lease contract- 01 - written, 02- oral.*

If it is share cropping, whether any inputs provided by the lessor? Yes/ No

If it is yes, specify the inputs and respective quantities

Sl. No.	Inputs	Quantity(Specify the unit)	Current market price

### **In case of oral agreement:**

- a. **Lessee's perceptions:** reasons for not having written agreement
  
- b. **Lessor's perceptions:** reasons for not having written agreement
  
- c. **Local agricultural officer's perceptions:** reasons for no written agreements

**V. Farm-family expenditure pattern**

S.No	Item	Expenditure (Rs/month)	Expenditure (Rs/year)
1.	Food		
2.	Clothing		
3.	Fuel and Lighting		
4.	House Rent and Repairs		
5.	Social functions		
6.	Recreations		
7.	Education		
8.	Medicines		
9.	Religious functions		

**VI. Asset position of the farmer**

Item	Purchased during last five years			Sold during last five years		
	No.	Value	Total value	No.	Value	Total value
Agril land						
Residential accommodation						
Livestock/Cattle sheds						
Tractors						
Hand sprayers						
Power sprayers						
Pump sets						
Irrigation infrastructure						
Ploughs						
Cultivators						

**V. Details of borrowing**

Crop	Name of the Source		Amount borrowed		Rate of interest	
	Institutional	Non-institutional	Institutional	Non-institutional	Institutional	Non-institutional
Term loans						

**Whether you possess Loan eligibility card? Yes/ No**

If no, specify the reasons:

**VIII. Loans availed through loan eligibility card:**

Crop/enterprise	Amount of loan	Name of the bank	Scheme under which loan is taken	Interest rate

**IX. Extent of indebtedness of farmer**

Source wise	Total borrowed funds	Amount repaid	Extent of indebtedness	Reasons for indebtedness

**X. Cost of credit of farmer**

1. Cost of application form:
2. Processing charge, Documentation/Mortgage registration:
3. Expenditure on transportation:
4. Lodging & Boarding:
5. Illegal charges:
6. No. of trips/days made to bank:
7. Loss of opportunity wages for labour:
8. Rate of interest:
9. Any other

**XI. Purpose-wise utilization of credit**

Purpose	Loan amount		Interest	
	Institutional	Non-institutional	Institutional	Non-institutional

**XII. Diversion of loan amount towards unproductive purpose**

Purpose	Extent of loan taken(Rs.)		Expenditure made(Rs.)		Diversion of funds towards unproductive purpose(Rs.)
	Institutional	Non-institutional	Institutional	Non-institutional	

**a. Operational problems faced by the farmer in availing the loan**

Sl. No.	Problems	Rank

**b. Perception by the Agricultural Officer in the area**





I. Material costs

Sl. No.	Material inputs	Quantity	Price/unit	Total cost
1	Seed			
2	Organic manure			
3	Fertilizers 1) N 2) P 3) K 4) Micro nutrients			
4	Herbicides			
5	Plant protection chemicals			
6	Soil amendments			
7	Fuel/electricity			
8	Water charges			
9	Miscellaneous			

II. Marketing particulars

Sl. No.	Item	Output (kg)	Qty given as wages (kg)	Home consumption(kg)	Seed purpose (kg)	Quantity sold (kg)	Others (specify) (kg)
1	Grain						
2	Straw						

Sl. No.	Item	Method	Price (Rs/kg)	Marketing costs (if any in Rs)
1	Grain			
2	Straw			

Code: 01. Co-operative society      02. Private party      03. Local market

**Cost of maintenance (perennial crops)**

Material inputs	Quantity	Price / unit
Organic manures		
Chemical fertilizers		
Plant protection chemicals		
Mulching material		

Labour input	Human labour days					
	Permanent		Casual		Wage rate	
	M	F	M	F	M	F
Shading and gap filling						
Manure application						
Mulching and husk burial						
Intercultural operations						
Crown cleaning						
Plant protection						
Harvesting charges						
Miscellaneous						

**ACCESS TO INSTITUTIONAL CREDIT – AN ECONOMIC  
ANALYSIS OF TENANT FARMING IN EAST GODAVARI DISTRICT OF  
ANDHRA PRADESH**

**By**  
**HARITHA CHITTURI**  
**(2010-11-148)**

**ABSTRACT OF THE THESIS**

*Submitted in partial fulfillment of the requirement  
for the degree of*

*MASTER OF SCIENCE IN AGRICULTURE*

*Faculty of Agriculture*

*Kerala Agricultural University, Thrissur*

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**2012**

## ABSTRACT

The formal financial system plays an important role in financing the needs of the agricultural sector in India. In order to facilitate timely and adequate credit flow to agriculture, the sector has been targeted as a part of the priority sector for the lending programmes in 1969 with an emphasis on 'social banking'. Domestic commercial banks have been directed to allocate 18 per cent of net bank credit to agriculture and allied activities. The directed credit programme has clearly resulted in a significant increase in the amount of credit allocated to agriculture over the years. According to the Reserve Bank of India, an amount of Rs.4,76,550 crores was pumped into the agricultural sector as institutional credit as on 31-03-2012 against a target of Rs.4,75,550. However, the increased amount of agricultural credit and its outreach over the years are accompanied by several qualitative issues like timeliness, adequacy, cost and access. Inclusive financing, i.e., the delivery of financial services at affordable costs to sections of disadvantaged and low income segments of the society on par with access to any public good needs more scrutiny as banks look into the total quantity of credit disbursed in a financial year only. The growing spectra of financial exclusion in agriculture, providing livelihood to more than two third of our population, particularly of small and marginal holders, and tenant farmers merit more attention in this context. The inability to offer collaterals stands between them and the institutions despite many state initiatives.

The present study entitled "Access to institutional credit: An economic analysis of tenant farming in East Godavari District of Andhra Pradesh" was carried against this background with the specific objective of investigating the operational problems faced by both the tenants and bankers in credit delivery, and to suggest policy fine tuning to overcome the bottlenecks. According to the Andhra Pradesh (Andhra area) tenancy act, 1956, tenancy is permitted in the state, but it is regulated. Informal tenancy system was very prevalent in the district of East Godavari and it covered nearly 50 to 60 per cent of the cultivated area.

The total operating expenses on *rabi* paddy was found to be higher (Rs.49510/ha) on leased land as compared to the owned land (Rs. 40926/ha). This difference was accounted due to higher level of input use on leased land, besides the cost incurred towards paying rent (Rs. 7776/ha) to the land owner. Also, the scale of finance (Rs. 41990/ha) was found to be inadequate in meeting the working expenses of a tenant farmer, while it was sufficient in case of owner cultivated lands. Even though the gross income realized from the leased land was higher than that of owned land, the gross margin of the tenant cultivator was found to be relatively low. This was due to the additional costs incurred by the tenant farmer towards the land rent.

The subsidies provided by the Government could not be availed in full by the tenant cultivators. Hence, the tenant farmers usually borrowed farm inputs from the input dealers and village traders who exploited them by charging high prices for the inputs advanced. Due to their indebtedness towards the moneylenders and village traders, the farmers resorted to distress sales at low prices at the village market itself. The Government interventions in marketing of the produce were found to be inefficient.

Non availability of institutional credit and the high interest rate charged by the money lenders were the two major constraints experienced by the tenant farmers. The moneylenders exploited the tenant farmers by charging usurious rates of interest which varied from 24 per cent to 32 per cent. The scheme of financing tenant farmers through Joint Liability Groups (JLGs), introduced by National Bank for Agriculture and Rural Development (NABARD) was not successfully implemented in the study area. The logit regression analysis illustrated that the scheme of LEC introduced by the Andhra Pradesh Loan and Allied Benefits Eligibility Card (for permissive cultivation) Act was successful in providing formal credit to the tenant farmers. The possession of Loan Eligibility Card by the tenant farmers was found to be the most significant determinant in accessing credit from institutional sources. These cards enabled the tenant cultivators to access credit from public financial institutions and to claim input subsidy, crop insurance and compensation for damages to crop. Co-operatives were the agencies to implement the LEC scheme in a better way and advanced credit to the tenant farmers without any demand of collateral security

due to more government support and political will. The other formal institutions like commercial banks and Regional Rural Banks (RRBs) were reluctant to implement the scheme due to the complicated documentation procedures involved in credit delivery to tenant farmers.

Based on the findings of the study, policy measures like government intervention to strengthen the marketing system, credit linked marketing facilities, fixing realistic scale of finance with due considerations for the fair rent component, group initiatives in production and marketing, the universalisation of loan eligibility card, and simplification of bank procedures are being suggested.