STRUCTURE AND PERFORMANCE OF RURAL LABOUR MARKET: AN INVESTIGATION OF TWO VILLAGES IN WEST GODAVARI DISTRICT OF ANDHRA PRADESH

A Thesis
Submitted for the Degree of

DOCTOR OF PHILOSOPHY IN ECONOMICS

BY

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CERTIFICATE

This is to certify that **Mr. Chandayya Makeni** has carried out the research embodied in the present thesis entitled ***"Structure and Performance of Rural Labour Market: An investigation of two Villages in West Godavari District of Andhra Pradesh"*** for the full period prescribed under Ph.D ordinances of the University of Hyderabad. This thesis is an independent work and does not constitute part of any material submitted for any research degree or diploma here or elsewhere.

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DECLARATION

I hereby declare that the work embodied in this thesis entitled, ***"Structure and Performance of Rural Labour Market: An investigation of two Villages in West Godavari District of Andhra Pradesh"*** has been carried out by me under the supervision of Dr. R.Vijay in the Department of Economics, University of Hyderabad. I declare to the best of my knowledge that no part of the thesis was earlier submitted for the award of research degree of any other university or institute.

Place: Hyderabad **Signature of the Candidate**

Date:

(CHANDAYYA MAKENI)
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TO GOD AND MY PARENTS...

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Chandayya Makeni...

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1.0 The Problem

Indian economy in the post colonial period continues to be an agrarian dominated economy in terms of the share of people dependent on agriculture for survival. The share of people dependent on agriculture continues to be the dominant share and is relatively constant over long period of time. In such a context, the nature and functioning of the primary markets (land and labour) continue to play an important and decisive role for the individuals in the economy. In the agrarian economy, one of the most important segments is the agricultural labour households. They form nearly 14.4 per cent of the rural labour households in India in 2002 according to the *Households Assets and Liabilities in India* report, no. 500 of the NSSO. Amit Basole and Deepankar Basu (2011) have provided an alternate estimate of the landless labour households. They have identified what they call the effectively landless labour households. These are households who own less than 1 acre. According to them these households derive more than 60 per cent of their income from wages and so they are identified as effective landless labour households. According to their estimate, based on NSSO 59th round (report no. 491), the share of effective landless labour households to all rural households were around 44 per cent in the year 1962 and their share has increased consistently to 60 per cent by 2003. In other words, nearly 60 per cent of the rural households depend on the sale of their labour power to meet their subsistence. In such a situation where a significantly large proportion of rural households depend on the exchange of their labour power to meet their subsistence, analysis of the nature of institutional arrangements to meet their subsistence takes pre-dominance for the individuals as well as for the analysis of their subsistence. One of the most important institutions studied for understanding the survival strategies of the rural labour households is the rural labour market. But in addition to the rural labour market, there could also be other institutional arrangements used by the rural labour-supplying households to meet their subsistence like attached labour or the rural non-farm sector or the land lease market.

The present study attempts to analyse the alternate institutional arrangements used by the rural labour-supplying households for their survival. In addition, a question that is being addressed is whether labour-supplying households have a preference to move to the labour

market or do these households want to move out of the labour market to alternate institutional arrangements to meet their survival. This forms an interesting issue for analysis, in the present context as survival strategies used by labour-supplying households should be part of the inputs to important policy interventions into the economy like the MGNREGS (Mahatma Gandhi National Rural Employment Guarantee Scheme).

In the received literature, analysis of the economic situation of the labour-supplying households is pre-dominantly seen in terms of the labour market. The literature is broadly on two issues. One, the analysis is on the performance of the labour market i.e. the nature of wages (real wages) and the extent and form of employment provided in the labour market and the second, the analysis is on the choices made between casual labour market and attached labour market and/or migration out of the rural sector. In all these studies there is an implicit opinion that the allocation decisions in labour market can be studied independently from the other markets and the structure of the economy. But in agrarian economies like India, the structure in terms of the allocation of land and labour resources and the context in which the individuals make choices are important. So this study would like to emphasise the importance of structure (initial allocation of land and labour resources and the re-allocation in these markets) in explaining the functioning of the labour exchanges in the economy.

1.1 Nature of Rural Labour Market

Before proceeding to the importance of structure and its implications on the labour market, an attempt is made here, to present the main aspects studied in the labour market. As was raised earlier there are three aspects studied in the labour market: wages, employment and choices open to the rural households. Let us consider the first issue in rural labour market.

Studies on the performance of wages broadly look into the aspect whether the real wages have increased or decreased over time. These studies mostly used different secondary data sets like Agricultural Wages in India, Farm Management Studies (FMS) or Committee on Agricultural Costs and Prices (CACP), Rural Labour Enquiry Reports, NSSO Reports, Wage Rates in Rural India and State wise Season and Crop Reports (for Andhra Pradesh) and in some instances on the basis of primary studies, to calculate the trends in real wages (Studies using secondary data: Krishnaji 1971; Lal Deepak 1976; Parthasarathy and Adiseshu 1982;

Jose 1988; Jemol Unni 1988; Acharya Sarathi 1989; Parthasarathy 1996; Haque 1998; Sharma 2001; Sarmha 2002; Chavan and Bedamatta, 2006).

The study by Krishnaji (1971) for the period 1956-57 to 1964-65 shows that money wages and wage deflators are moving in the same direction. Herdt and Baker's (1972) study, which was carried out during 1954 to 1968-69 has analysed only the demand side and found out that these demand variables have significantly impacted an increase in the real wages over the above mentioned period. Lal Deepak study carried during 1976 found out that the agricultural wages have risen in India during the period 1956-57 to 1970-71. Parthasarathy & Adiseshu's (1982) study throws light on the direction of trends in real wages during 1958-59 to 1978-79 across all the districts of Andhra Pradesh. The study found no significant association between the trends in real wages and trends in net per capita (rural) agricultural production, even in a relatively well-developed district such as West Godavari. Jose (1988) who has analysed the data from 1971 to 1985 across different states in India, finds improvement in wages since 1971, but Jeemol Unni's (1988) study using data from Rural Labour Enquiries, households that real wages have either been stagnant or declining till 1976-77; but, however, started increasing from 1977-78.

In addition to the above, the studies of Krishnaji 1971; Herdt and Baker 1972; Jose 1974; 1988; Parthasarathy and Adiseshu 1982; Ratna Reddy 1989; have use different breaks like pre-post green revolution to analyse the trends in real wages. These studies which have focused on a long period of time identify the acceleration in wages in the post-green revolution period in several states. There are also other important studies which have analysed the performance of wages in pre and post economic reform period (Sarmha 2002; Ravi Srivastava and Richa Singh 2005; Sharma 2005). Sasank Sarmah (2002) examined trends in agricultural wage rate in India during 1970-71 to 1994-95 using state level NSS data and observed that there has been a deceleration in real wages during the post reform period. Sharma (2005) who analysed real wage earnings using data from Rural Labour Enquiry reports, observed that the average daily real wage earnings of adult male and female labourers has increased in all major states during both the pre and post reform periods; however, the rate of increase was lower in most of the states in the post reform period as compared to the pre-reform period. Ravi Srivastava and Richa Singh (2006) who analysed agricultural wages for the period 1983 to 1999-2000, using NSS data, observed that the growth rate of manual casual agricultural wages declined during the post-reform period with

some differences at the state level. However, in the case of manual casual non-agricultural wages, there was no decline in the growth rates at the all India level. But in the case of wages for all casual (manual and non-manual) wage labour, a decline was registered for both agricultural and non-agricultural wages in the 1990s.

Some studies have also analysed differences in real wages between dry and wet areas (Bardhan 1973; Radha Krishna, *et al*., 1991; Narayanamoorthy and Deshapande, 2003). Bardhan (1973) found that real wages are low in dry villages when compared to wet villages. In addition to this, his study, which uses the percentage of net sown area irrigated as an explanatory variable along with other demand side variables, found that there exists a positive and significant influence of irrigation on wages. Radha Krishna *et al.,* 1991 study, which focused on irrigated and dry zones, found that wages are high in irrigated zones as compared to the un-irrigated or dry zones. Narayanamoorthy and Deshapande (2003) study, which used state wise cross section data during the period 1972-73 to 1993-94 found that there is a positive impact of availability of irrigation on real wages of agricultural labourers. Nath GB (1998) study of two villages (wet and dry), in Sambalpur district of Orissa, found that as far as wages are concerned there is no much difference in irrigated and dry villages.

An implicit idea of this analysis could be that the increase in real wages might indicate that the labour supply household's remuneration might be increasing and they might be better off with the increasing real wages. A second component in the analysis is to find out the determinants of real wages over time and space (states) in India (Lal 1976; Herdt Baker 1972; Jose 1988; Bhalla 1996; Parthasarathy 1996; Sharma, 2001 and 2005). Lal Deepak' found that the inter-state variation in real wage rates, between 1956-57 and 1970-71, can also be explained in terms of demand and supply factors (percentage increase in cereal output and percentage increase in agriculture labour force). The study found out that the agricultural wages have increased during 1956-57 to 1964-65, but during the following period (1964-65 to 1970-71), real wages were constant or fell in 8 out the 15 states of India (Deepak, 1976 A-59). Another study analysing data on seasonal variation in wages, pointed out that the seasonality is influenced by two factors, namely, nature of operation specific to each season and extent of diversification of farming. A significant shift, in demand such as those brought by the HYV's, are capable of raising wages (Herdt and Baker, 1972). Jose attributes the improvement in real wages in India during 1956-57 and 1983 to the growth in agricultural

output. These studies predominantly consider the production conditions that exist in the agricultural sector as the dominant determining factor (Jose 1988).

Some other studies have also considered indicators such as cropping intensity, gross cropped area, irrigation and other indicators of landless labour households in analysing agriculture labour wages (Bhalla 1997; Parthasarathy 1996; Sharma, 2001). In addition, to this there are also studies which considered some choice variables that are open to labour supply households such as non-farm sector employment or urban employment (Mohan Rao 1988; Sheila Bhalla 1992; Sarmistha Pal 1997). In the process of the analysis, choices open to the individual in the farm sector such as lease in land or forms of attached labour are not explicitly analysed in the models. There could be cases where the labour-supply households might explicitly enter in lease and become pure tenants and in the process whether a labour-supply household might partly or wholly withdraw from the labour market but those are not explicitly analysed in the literature.

If one sees the employment side in the market, one set of issues that arises is to see whether the growth process has become a process of joblessness in the recent period (Vinoj Abraham 2009). Bhalla and Hazell (2003) study, using NSSO data shows a marginal decline in share of agricultural employment during 1972-73 to 1999-2000. According to Vinoj Abraham, during the period 1983 to 2004-05, the share of self employment has risen in comparison to casual and regular employment. The peculiar changes in the rural employment scenario seem to signal distress-driven employment. In addition, they also show an increased participation of female population and aged population owing to the declining earning capacity of the normal income earners. The earning capacity being closely linked to agricultural yield in agrarian economies, the productivity stagnation in agriculture sector is compounding the misery, pushing people into the labour market in search of any form of employment. The decline in the agrarian sector has also led to substituting paid wage labour with unpaid family labour. The conditions of work in the agricultural distress-ridden regions also show feminisation of work, higher levels of underemployment and greater dependence on unpaid family labour. These trends give credence to the argument that the employment growth in rural India is distress and poverty-pushed employment growth (Vinoj Abraham 2009).

At the micro level, there are many studies, trying to analyse the extent of employment created and on the nature of employed created either based on pre and post green revolution

(Scarlet Epestein, 1973; Nath G.B, 1998; Krishnaiah, 1998; Ramachandran, *et al*., 2010). Scarlet Epstein has selected two villages; Wangala, an irrigated and Delena un-irrigated village in Mysore district. Between these two villages, in Wangala the, employment days are higher compared to that of Delena village. But interestingly, wages are higher in Delena village when compared to Wangala village during 1955. In a later re-survey of the two villages by the same author, in the later part of 1970, there is no significant difference in wages but an increase in employment in Delena village has been observed (Epstein, 1973, p.130). Another study conducted by Nath G B (1998) in Kainsir (wet), and Sunamunda (dry) villages in Sambalpur district (Orissa) shows some interesting facts. There are two types of labour households involved in agricultural labour activities in this two village, namely (i) land less agricultural labour (LLAL) and (ii) agricultural labour with land (ALWL). It has been observed from the study that the agricultural labour with land (ALWL) households received more employment days in Kainsir (wet) village compared to Sunamunda (dry) village. Another study by Krishnaiah (1998), who studied labour market in Aurepale and Dokur villages in the dry area of Mahabubnagar district of Andhra Pradesh, found out that compared to landless labour households more landed labour households are engaged as attached labourers.

A study by Radha Krishna *et al.,* (1991) shows that in irrigated zones, incidence of unemployment is high and wages are also high, but in the case of dry or un-irrigated zones, wages are low but at the same time, unemployment is less. Study by Ramachandran, *et al*., (2010) which researched on the agrarian relations in Anathavaram, Bukkacherla and Kothapalle from the three different regions of Andhra Pradesh calculated the rural employment days in those regions. The study found out that the labour hours have been standardized to 8 hours per day during 2005-06, and the number of paid work days are between 90-100 per worker, which is around 3 months of employment per year. The study found that the average number of employment days was the highest at Bukkacherla (104 days). While in terms of sex wise distribution of employment, the number of employment days received by male and female workers are skewed in Anathavaram (106 and 65 days respectively), and Bukkacherla (132 and 80 days respectively), however, the pattern was reversed in Kothapalle, where women workers received more employment (93 days) compared to men (83 days) in the whole year.

Here the emphasis here is to analyse whether there is increase or decrease in employment, and to see whether there is any casualisation or feminisation in the labour force. The main conclusion in these studies is a change in the form of employment towards self employment (Jeemol Unni 1988). However, contradicting those, some studies also show increased casualisation but a decrease in employment and also agrarian distress led increase in female labour force (Vinoj Abraham 2009).

The second set of issues analysed are the choices open to the labour supply households. The predominant choice studied is the attached labour contract. The criteria to define the labour categories, permanent labour system as distinct from casual labour system. For Thorner (1957) the main basis for this differentiation of labour system is free and un-free labour. He divides free labour into four sub-groups on the basis of length of the service, and un-free labour into three sub groups according to the mode in which the labourers are obliged to work for the master. For Bardhan and Rudra (1980) apart from the two categories of labour viz., casual and fully attached labourers, a third category exist viz., semi attached labour who are further divided into three sub groups on the basis of two criteria viz., duration of the contract and freedom of choices of employer. For Ramachandran (1990) this aspect is also particularly relevant in distinguishing between labourers from one category into another. For him the labourer in bondage and the free wage labourer stand at two level of continuum of degree of un-freedom. Workers who are not bonded but whose relationship with their employers is nevertheless characterised by varying degree of un-freedom are generally scattered across the duration of employment spectrum.The attached labour households are largely dependent on credit relations with employers. A central issue in agrarian transformation is the nature of changes agricultural labourers and employers. The explanation and conceptualisation of attached labour especially has received the attention of many researchers like Krishna Bharadwaj 1994; Bhaduri 1984; Bhalla 1992; Ramachandran 1990; and Krishnaiah 1998). Bharadwaj (1994) points out the need to understand the nature of under formation of rural labour markets as an aspect of the structure and dynamics of production and exchange process in a village to understand the nature of attached labour. The dominant parties set the patterns as well as the terms and conditions of exchange. The deficit party is compulsively involved in exchange with the dominant party which exploits the weaker party in two or markets by interlocking the terms of contracts. Consequently, there arises a symbiotic relation between the extraction strategies of creditor/employer on the one hand and the survival strategies of debtor-employer on the other. Thus, attached labour

status is viewed as a debt bondage to the money lender-cum-employer. In such a situation, the market relations are carried out in an environment of social and personalised power based on personal knowledge and information. The Sarmistha Pal (1997) describing the declining incidence of regular farm contracts in different parts of rural India. The declining incidence of regular farm labour is closely related to an improvement in the availability of alternative non-farm employment as well. It is argued that, this decline of regular contract is primarily due to a shift to the left of the supply curve itself, due to better employment and/ or credit opportunities, rather than to a shift to the left of the demand curve, reflecting an increasing reluctance on the part of farmers to hire regular labourers. A possible manifestation of this effect is that the decline of regular contracts has gone hand in hand with an increase and not a decrease in real wages.

The above set of literature assumes a completely formed labour market. In a standard neo-classical model this would imply the separation of households in the farm sector into labour-demanding and labour-supplying households. This would imply a case wherein labour-supplying households have only their labour power to sell and the labour-demanding households have the other primary means of production, namely land. This separation facilitates self-correction of the labour market through adjustment in wages. One can identify different implication for a well-developed labour market. Bharadwaj (1994) relates the formation of labour market with the process of accumulation path and structure of development, Bhalla (1992) sees a well-formed labour market directly influences the wage rate and indirectly influences the level of capital accumulation among cultivators using hired labour (Bhalla, 1992), Bhaduri (1984) sees a well-formed labour market as an indicators of capitalist development where labourers are separated from their means of production, North and Thomas (1971) see a well-formed labour market as a necessary condition for growth of the economy. Normatively speaking, one proposition on the need for a completely formed labour market could be that a sustained growth in output needs well-developed land and labour markets in the rural areas or that well-developed markets for inputs signify a necessary condition for generating growth in the economy (North and Thomas, 1971). Another proposition could be that a growth in output would induce the formation of land and labour markets by increasing the real wages and inducing resource re-allocation in the village economy and third could be that a well-functioning of labour market is indicate a transformation to a capitalist economy. If the labour market is not well-formed, the economy can have short-run growth with the infusion of technology but the growth may not be self-

sustaining as the incompletely formed primary markets may restrict the re-allocation of resources.

But if the labour market is not well-formed i.e., the demand and labour supply households are not separated the market clearing role of the markets may not be able to function smoothly. In such a situation the structure of the economy or the initial distribution of land and labour resources might come to play an important role. In other words, the share of landless labour households who want to sell their labour power and part sellers of labour power i.e., small and marginal famers their share in the economy as well as the nature of land owners who are potential demanders of land takes pre-dominance. Do these demanders of labour want to depend on labour market or do they want to use alternative institutional arrangements to access labour power takes pre-dominance. So in addition to the initial distribution of land and labour resources and choices that are open to rural households also takes a central stage when one is studying the labour process in an economy where the labour market is not well-formed.

A detailed exposition on the nature of under formed labour market was presented by Bharadwaj (1994). In framework, the non-separation of demanders and suppliers of land is identified as 'formation of the labour market' adopted advisably by Krishna Bharadwaj (1994). She shifts the analysis from centrality from emphasis analysis of determination of wages and employment to 'characteristic' and particular forms of extent of labour processes. She is of the opinion that in a predominantly agrarian economy, the study of labour market entails a closer look at the survival strategies of the rural households. Given her work is a pioneering work in this area, we would like to summarise her work here and later present its implication to the present work. She starts with a concrete observation that there are considerable presence of landless and petty cultivator households. The interaction of these households would be quite different in the labour market. A landless labour is pre-dominantly dependent on the labour market for survival while a petty producer or small and marginal farmers is partly dependent on the labour market. Given this differential in their interaction in the market, Bharadwaj identifies different categories of rural households. She classifies households into groups based on their access to land and labour and the average level of surplus they produce. These are factors which affect the labour use of the households, that is, their demand for and supply of labour. In the process she identifies four classes:

Category I: In this category there are chronic deficit households (i.e. the landless, the petty (marginal) cultivators and non-agricultural artisans households) where in the income levels averaged over ‘good’ and ‘bad’ years continues to fall short of subsistence levels.

Category II: Under this category, there are households that are unable to even out surpluses and deficit over ‘good’ and ‘bad’ years. These households are to manage just enough for attain subsistence for small cultivators and other households with similar levels of incomes.

Category III: Herein are households with a sizeable surplus, which respond competitively to market stimuli and are able to make independent choices with regard to their economic activities.

Category IV: This category has households with substantial surpluses that depend largely on surplus reinvestment behavior and marketing decisions. These factors substantially affect the terms and condition of exchanges (Bharadwaj 1994, p.326).

Based on the differentiation of peasantry she makes four important observations

1. “The exchange processes are neither uniform nor equal for all participants so the fact is that a competitive market does not exist. Not only do the quantitative terms and conditions vary, depending on the parties to the exchange, but there can be *qualitative* differences in types of exchanges and of the market involvement of individual households.
2. The exchanges are set not only in terms of prices but also depend on explicit and implicit, non-price factors which mainly rely on personal dominance and power relations.
3. The nature of exchange involvement as well as the terms and conditions depend largely upon the position of the participating household within the resource status categories given above. There is, thus, a rough correspondence between the production (resource) status as a base and the concomitant exchange relations. This last proposition is crucial as it generates the differential dynamics for the different classes of peasantry and also affects the process of accumulation through the *structure* of such differentiation in the village” (Bharadwaj 1994, p.327).

In the process of her analysis, she brings different interaction of groups or classes in the labour market and also the importance of structure (allocation of land and labour resources)

to understand the process of formation of labour market. She identified and pointed out the importance of structure, moves on to present the constrains that exist to the formation of the labour market in countries like India. An implication of the above structure, in the context of industry not providing employment to 'surplus' people in agriculture, is that a petty producer may want to hold on to their piece of land "even when their net income accruing from land is meager and even when the wage per day for 'casual' labour is higher for the alternative they face in the event of a loss of their access to use of land, is the precarious state of being landless labourers. This state of affairs inhibits tendencies towards concentration of landed property and the development of capitalist relations" (Bharadwaj 1994).

A large proportion of labour is committed to working on small farms as family labour also constrains the development of a wage labour market. Thus, there appears to be seasonal shortage of labour and that is the rationale for attaching labour services through interlinked contract of land and labour, credit and labour, or of hiring 'permanent servants' with varying degrees of attachment. The under-formation of land market thus reinforces the same for the labour market (Bharadwaj 1994).

An incomplete/under-formed market is visualised as one wherein this separation is not complete or the labour-supplying households also own/operate some land. In the context of incompletely formed labour markets, the self-corrective mechanism in the labour market is also realised through non-labour market institutions like the land lease market. One of the indicators for identifying non-separated households is the sizable presence of small and marginal farmers. These households are potential suppliers of labour but actually internalise the demand for labour within their production unit (Bhaduri, 1984; Bharadwaj, 1994; Unni, 1997). Another indicator could be when labour-supplying households can also lease in land and convert themselves into land operators. In both these processes, potentially labour-supplying households do not actually get converted into labour-supplying households. Both the indicators on incompletely formed labour markets are from the supply side in the labour market. However, the sustenance of the supply side constraints to the labour market also needs a specification of the demand side in the labour market. The nature of demand for labour can be identified in terms of the distribution of land with different classes/groups and their options to cultivate the land. In this constraints with regard to the formation of the labour market are seen in terms of structures in the rural economy. The structure of the

village economy is identified in terms of the classification of rural households into labour-demanding and labour-supplying households based on their labour exchanges.

1.2 Choices and the Labour Market Allocation

In this work an attempt is made to extend the logic as given by Bharadwaj to explain the survival strategies of the labour supply households in the rural areas. On the one hand, the study identifies the importance of the structure in explaining the labour market decision. By structure we imply the distribution of households over groups/classes based on their interaction in the labour market. At an abstract level, households can be classified into labour-demand and labour-supply households. In addition, the labour-supplying households can be divided into pure labour-supply households and households who own land but also supply labour power in the labour market. The nature of these households interactions in the labour market will also be different. As was raised by Bharadwaj (1994), Bhaduri (1984), Jeemol Unni (1997) small and marginal farmers partly internalise their demand for labour and also constrain the formation of labour market. In addition, one has also classified labour demand households who own demand on labour market and households who use other institutional arrangements to access the labour time. The combination of labour demand and labour supply households and the land owned by these households are identified as structure of the economy. The relatives shares of these groups and land owned by them will influence the functioning of the labour market. In addition, to the initial allocation of households and land over groups, the choices that individuals make also influence the functioning to the labour market. The resulting structure post choices being made is identified as the evolving structure. The existing literature on formation of labour market only studies the initial structure but in the work an attempt is made to incorporate the choices also being made to see if there is a trend towards the separation of households into labour demand and labour supply households.

Herdt and Bakers study is a classic example of a well-formed labour market. Agricultural labour marginal productivity is zero in Indian condition. Some hold that the marginal productivity is zero, while others believe that labour has a low but positive marginal productivity. When the marginal productivity is zero, the diminishing returns are started to, ensure that there is a usual downward of the demand for labour. In this context, new technology is required for production, and with the introduction of new technology, the

demand curve for labour will be shifted to the right. When the demand increases for labour and employment, so also does the wages.

In case of choices made by the labour supplying households centrality is given here to the choice of households to lease in land. Here we present a short run analysis of the impact of land lease on the labour market. Before proceeding to the impact of land lease on the labour market, an attempt is made to present the short run schedules of demand and supply functions in the labour market and see the impact of migration and increased employment on the performance of the labour market.

"If one assumes complete separation of households in the labour market, the demand and supply functions in the labour market a derived market will have standard shapes. Diminishing returns ensures the usual shape of downward sloping demand function. While supply curve is the usual trade off between work and leisure. In less developed countries there is an extensive debate on the marginal productivity of labour" (Herdt and Baker, 1972 p.A-24).

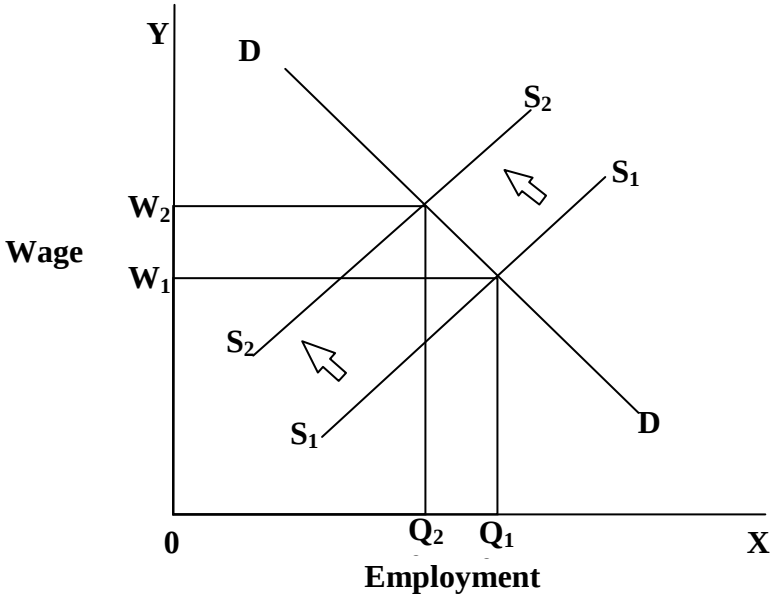
If one assumes the existence of surplus labour the long run supply function will be horizontal (reflecting the institutional factors) until the economy has surplus labour and then would take the regular shape. In the horizontal part the if the demand curve interacts the supply curve; wages would not change until the supply curve takes its regular shape. But in reality, also one witnesses short run fluctuation in real wages. So here we assume that in the short run, upward sloping is based the labour market conditions in the agrarian economy. In a village economy, there are peaks in the labour market and slumps in the labour market. For example, for paddy crops the peak labour demand periods are during harvesting and sowing/transplanting which are time bound operations and covariate to nearly all cultivating households. So in the short run, during the peaks one can assume some forms of normal demand function for labour. The figure 1.1 presents the shapes of the two curves. DD refer to demand side of labour, SS refer to supply side of labour.

In the short run, if there is a decrease in the supply of labour due to out-migration or households diversifying into non farm sector, the supply curve will shift from S_1S_1 to S_2S_2. If one assumes that diversification is restricted only to the labour-supplying households one

would not expect any changes, in the short run, in the demand side variables implying that the demand curve would remain the same.

Case A

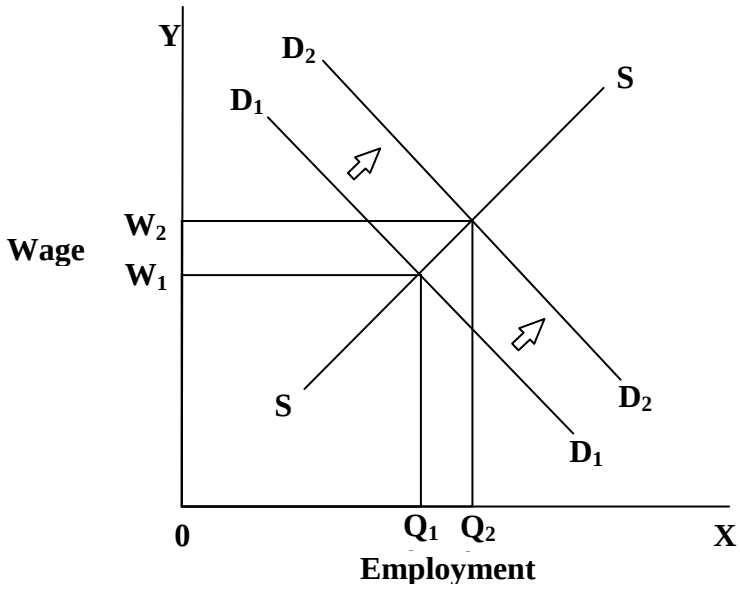
Figure: 1.1 Shift in the Labour-supply Curve and Equilibrium



This would lead to an increase in wages and decrease in employment of people. In the literature on labour markets, this effect is clearly seen in the works (Lal Deepak 1976; Jose 1988; Jeemol Unni 1997; Sarmah 2001; Srivastava and Singh 2005).

Case B:

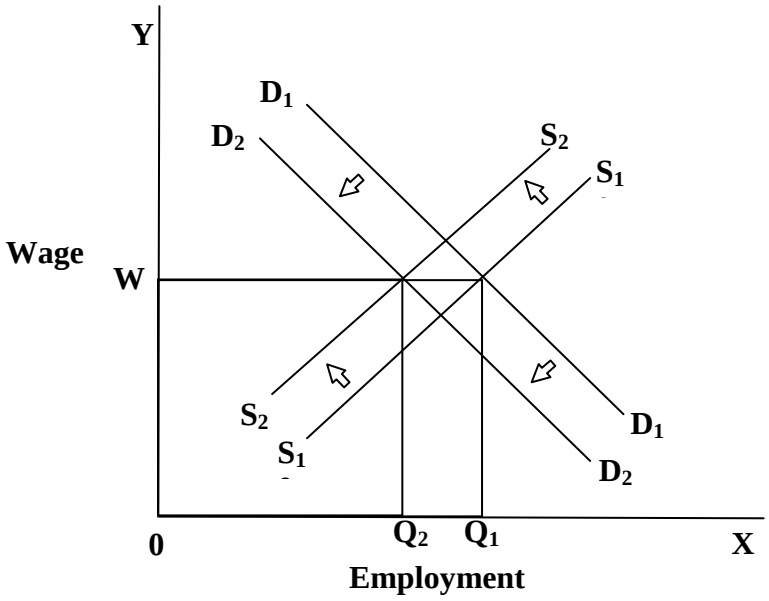
Figure: 1.2 Shift in the Labour-demand Curve and Equilibrium



If, on the other hand, one assumes an increase in the land productivity due to irrigation, the demand curve would shift outwards from D_1D_1 to D_2D_2. The provision of irrigation influences the productivity and so influences the demand for labour but in the short run will not influence the supply curve of labour. This would lead to an increase in wages and employment in the short run. The researchers (Herdt and Baker 1972; Bardhan 1973; Narayanamoorthy and Deshapande 2003) have identified this aspect in their works (see figure 1.2).

Case C:

Figure: 1.3 The Simultaneous Shift in the Labour-supply and Labour-demand curves and Equilibrium



Let us now consider the impact of tenancy on the labour market. If a pure tenant leases in land, these households will fully or partly withdraw from the labour market. In any of these cases, the supply of labour in the labour market will decline leading to a leftward shift in the supply schedule. But tenancy also has another impact on the demand side. If an agricultural labour becomes a pure tenant, they will start to use their own family labour in the organisation of production. This will have an impact on the aggregate demand of labour. The aggregate demand for labour would also shift leftwards. This would lead unambiguously to a decrease in the level of employment in the rural economy but the impact on wages is

ambiguous. There can be a rise or a decline in the wages depending on the slope or the elasticity of the demand function. If the demand schedule is inelastic one will get a case where the wages will not change. So if the economy has a large segment of small farmers, owners or pure tenants the levels of employment in the rural wages would decline and wages dependent on the nature of demanders in the village economy. As the small farmers constrain the formation of labour market, the very existence of tenancy can also constrain the formation of labour market. In a more dynamic sense, as small famers and tenancy increases, employment in the labour market will decrease which decreases the annual income of an individual can get in the labour market which induce a larger demand for land and tenancy will in the second round increases. In case of increasing employment in non-farm sector a decrease in supply leads to increase in wages and decrease in employment. This can initiate re-allocation of resources in the economy and can facility the formation of the labour market. While small farmers as well as tenancy reduces the demand and supply leading to decrease in employment strengthening the demand for land in tenancy and/or purchase land by small and marginal farmers. The more these households increase in number and extent of land owned more is the shrinkage in the labour market and labour market becomes more and more under formed (Mohan Rao, 1988; Sheila Bhalla, 1992; and Sarmistha Pal, 1997) (see figure 1.3).

1.3 The Context of the Study

In a vastly heterogeneous and complex country like India there are wide regional differences in the performance of agricultural sector. There are some states which are witnessing higher rates of growth in agriculture sector when compared to other states. For example, states like Punjab, Haryana and Kerala are witnessing higher levels of growth in output when compared to states like Bihar, Orissa and Madhya Pradesh (Acharya Sarathi 1989; Sasank Sarmah 2002). Given that, the labour market is a derived market from the output market the demand for labour could also be different in the different states. The question being addressed here is as to whether interventions and the resultant growth in output, in these states, have generated a well-formed labour market, that is, a market visualised as one wherein the households are differentiated into labour-supplying and labour-demanding households. In the Marxian framework a well-formed market is one where there is a differentiation of the peasantry and which is identified as a completely formed labour market. There are a number of studies on changes in real wages over a period of time **(**Krishnaji, 1971; Herdt and Baker, 1972;

Parthasarathy and Adiseshu, 1982; Jose, 1988; Acharya, 1989; Parthasarathy, 1996; Unni, 1997; Reddy, 1998; Narayanamoorthy and Deshpande, 2003; Himanshu, 2005; Srivastava and Singh, 2005; 2006; and Chavan and Bedamatta, 2006). In addition, there are also studies on the impact of growth on real wages (Deaton and Dreze, 2002; Mishra and Govinda Rao, 2003; Bhalla and Hazell, 2003; Sundaram, 2007; Abraham, 2009; and Eswaran, *et al*., 2009). However, there are only a few micro studies on the nature of formation of the labour market.

The state of Andhra Pradesh is generally identified as a middle-income state with a prosperous agricultural sector. If one classifies the different districts in the state in terms of the level of income, the delta zone comprising the East and West Godavari districts, and the Krishna and Guntur districts is generally identified as the zone with the highest income. The Godavari districts are collectively identified as the *granary* of the state. The present study has identified two villages for detailed analysis. One of the villages has the provision of assured water for irrigation and is identified as a 'developed' district while the second village is a dry village. The focus of the present study is to identify the structure and performance of the rural labour market at the state and attempt to study the structure and choices made by labour- demand and labour-supply households in the two village level. At the village level, one is trying to study whether the structure and choices made by households is different in the irrigated/developed village and the dry underdeveloped village.

1.4 Objectives of the Study

The objective of this study is to analyse the institutional mechanism that labour-demanding and labour-supplying households in the rural sector make to organize production and/or to meet their subsistence. An emphasis of the work is on the choices made within the agricultural sector which could be land lease or attached labour system or rural non-farm sector. The implication of the structure and choices made on the performance of the labour market is also studied.

1.4.1 These Objectives are Analysed at Two Levels

- At the state level, an attempt is made to identify the structure of labour market and choices made by households. In addition, it also analyses its implication of the structure and choices made on the real wages.

- At a village level, to identify the structure of labour market and choices made by the households. The basis of these choices are analysed and its implication on the formation of the labour market.

1.5 Source of Data

The data has been collected from different sources that are of primary and secondary in nature. The secondary source consists of data from the *Census of India, National Sample Survey Organisation (NSSO), Rural Labour Enquiry Reports (RLE), Agricultural Wages in India (AWI), Agricultural Situation in India, Statistical Abstract of Andhra Pradesh, Seasonal Crop Reports of Andhra Pradesh, Prices, Wages & Index numbers of Andhra Pradesh and District Census Handbook of West Godavari,* while the primary data was collected from two villages of West Godavari district in Andhra Pradesh during 2010.

Secondary Sources

The secondary data have been obtained from different sources such as the "*Census of India*" 1981, 1991 and 2001 from where we have derived data for farm-sector or agricultural population viz agricultural labour households and cultivators. Another source for farm-sector data is the NSS reports 341 (1983), 409 (1993-94), 458 (1999-2000) and 515 (2004-05). For employment and unemployment estimation, we have used the "*Employment and Unemployment Situation in India*" report. To arrive at the proportion of agricultural labour households we relied on "Rural Labour Enquiry reports" of 1983 (38^{th} round), 1993-94 (50^{th} round) and 1999-2000 (55^{th} round). For estimation of land details, we depended on NSS data, four reports, viz. 1981-82 (Some Aspects of Operational Land Holdings in India 37^{th} round) report no. 331, 1991-92 (Land and Livestock Holdings Operational Holdings in India 47^{th} round) report no.407, 2003 (Household Ownership Holdings in India, 2003 59^{th} round) report no.491 and 2002-03 (Some Aspects of Operational Landholdings in India 59^{th} round)

report no. 492. With reference to estimating agricultural labour wages, data from "Agricultural Wages in India" during the 1980-81 to 2004-05 (at state level, majorly for 15 states and district level for West Godavari district) has been used. For estimating agricultural labour wages at district level where the deficit data which has been not reported for 1995-96 and 1996-97, we have used "*Season and Crop Reports*" of Andhra Pradesh from 1995-96 to 1996-97. For estimating real wages, I have used Consumer Price Indices Agricultural Labour (CPIAL), relying on the periodical "*Agricultural Situation in India*" periodical using for 1980-81 to 2004-05. *The District Census Handbook of West Godavari*, 2006-07 has been used for mandal level information, while the state level information have been collected from "*Statistical Abstract of Andhra Pradesh*" 2005 to 2009.

Primary Source

For the primary data, a pre-tested comprehensive schedule (questionnaire) was designed especially for the purpose and canvassed in the study area. Two villages, viz. Badarala in Lingapalem mandal and Velagapalli in Ganapavaram mandal of West Godavari district of Andhra Pradesh were selected for the study. These villages were purposively selected. One of the villages selected is a dry village with multiple cropping patterns while the second village is in the command area and had paddy as the principal crop. The survey took the village as the unit of analysis and a complete enumeration of all households was conducted. The survey was conducted in the month of August to September and in the year 2010 in Badarala (dry) village and October to November of the year 2010 in Velagapalli (wet) village. Information on all households were collected regarding their general characteristics such as number of members, their education, occupation, and sex-composition. Data was also collected on the economic characteristics of the households such as land owned, leased, instruments owned etc. In addition, the households' interaction in the labour market in particular as well as other markets like credit, lease etc., were collected.

1.6 Organisation of the Study

The present study is organised into six chapters. The first chapter presents the problem, along with the nature of rural labour market, choices and labour market allocations, context of the study, and specification objectives of the study. The second chapter deals with the structure and performance of rural labour market and a state and an all-India level analysis. The third chapter emphasises on the agro-economic background of the West Godavari district, especially of two mandals of Lingapalem and Ganapavaram and two villages, viz., Badarala and Velagapalli. Chapter four makes an attempt to examine the structure of rural labour market: an investigation of two villages. Chapter five tries to analyse the choices made by labour supplying and demanding households with reference to the two villages. And the final chapter presents the conclusions of the study.

CHAPTER - II

CHAPTER - II

STRUCTURE AND PERFORMANCE OF RURAL LABOUR MARKET: A STATE LEVEL ANALYSIS

2.0. Introduction

In a vastly heterogeneous and complex country like India, there are widespread regional differences in the structure of rural labour market in general and performance or functioning of rural labour market in particular. The existing literature on performance of the labour market at the state level has shows that the performance of the labour market in terms of determination of real wages is different in various states (Herdt and Baker, 1972; Jose 1988; Parthasarathy, 1996; Sarmah 2002; Narayanamoorthy and Deshapande, 2003; Srivastava and Singh, 2005; 2006; Chavan and Bedamatta, 2006; Vinoj Abraham 2007). But the emphasis of the existing literature is on explaining the performance with less emphasis on the structure of the labour market. The structure of the labour market means the allocation of agricultural households into labour-demanding and labour-supplying households and the choices open to the households to meet their subsistence. In a transitional economy like India, the separation of households into pure labour-demanding and pure labour-supplying households may also not be complete with some households being part labour-supplying households with cultivating land and also households who own land but do not cultivate. The choices that are open to households may be vastly different in the different states. Hence the structures could be very different in the different states. That is, the share of pure labour demand and pure labour supply households and also households who partly enter the labour market. In addition, the choices open to these households could also be different. In the present chapter, an attempt is made to analyse whether the structure of labour market is different over states and to study the impact of the structure on the performance of the labour market. The performance is studied in terms of the impact on wages.

The state is not a homogenous unit in terms of the structure and performance of the labour market. The differences in the structure and performance are at the village level, district level as well at the state level. In this chapter, the structure and performance of labour market is analysed at the state level recognising the limitation that a state is also a summation of different villages with different structures and performances.

The chapter has been divided into five sections, the first section on changes in the farm structure of rural labour market in general, and labour-supplying households and labour-demanding households in particular. The second section explains the choices open to the farm households, agricultural labour households either may enter into tenancy or else rural non-farm sector. The third section focuses on the performance of rural labour market in terms of real wages, employment and unemployment. The fourth section, factors influencing wages in the rural labour market is analysed with fixed effect model. And the fifth section concludes the chapter.

2.1 Changes in the Farm Sector

The economic structure of rural India has been undergoing significant changes since independence due to various government policies and decision-making at individual level. During the first phase "the public policy orientation was directed mainly at restructuring agriculture through a series of land reform measures followed by reforms in trade and credit. The attempt was to eliminate the influence of agents who are other than cultivators and who were perceived to have an adverse effect on the cultivating agents. The second phase in public policy was to induce changes in the production function with public provision of the knowledge, the inputs needed in production and purchase of the output produced. This is popularly known as the green revolution phase. The third phase of public policy was to encourage industrialisation and urbanisation. The result of these policy interventions was a growing agriculture sector and the consequent demand for non-farm services in terms of trading of the inputs and output services. This process can be visualised as a growth-induced generation of non-farm activities" (Vijay R, 2012, p.37). In the context of these changes it is interesting to see how the rural sector is responding or changing as well as the changes in the structure of the agrarian structure. The following analysis is not based on explaining the causal process of explain the changes but to describe empirically the changes taking place in the rural sector in the context of changing public policy.

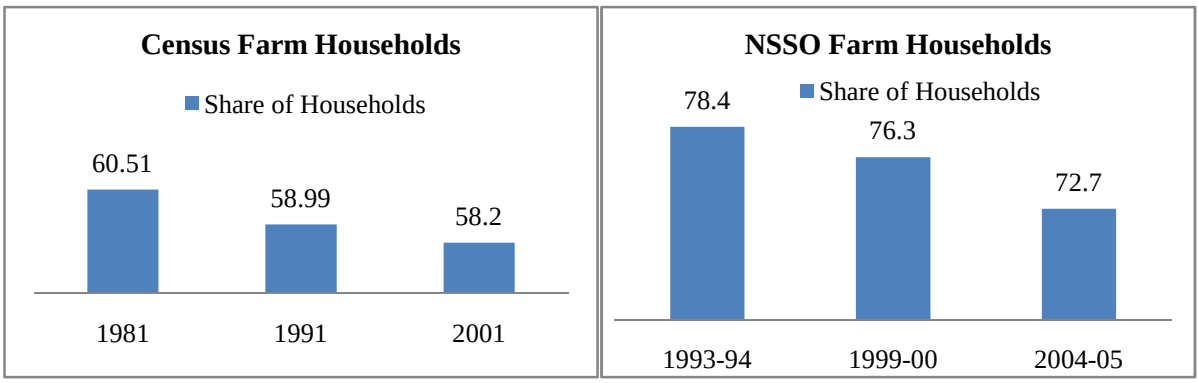
2.1.1 Is the Farm Sector Shrinking?

The rural economic structure could be broadly classified into two parts: the farm sector and the non-farm sector. The farm sector consists of individuals who take part in agricultural production process and the non-farm sector consists of individuals who facilitate production

(artisanal community or input traders), or facilitate transfer of goods over spaces from rural to urban or urban to rural or within rural sector (output traders) and rentiers (the landlords).

The farm sector or agricultural population in turn has two parts: cultivators and agricultural labour households (AGL) or agricultural population. Agricultural labour households are the suppliers of labour and they constitute the main component of the supply side of the labour market. In the other segment are the cultivators who form the demand side of the labour market. The interaction between the segments define the wage rates, a crucial defining variable which determines the level, nature and extent of production. If the labour market is not self-correcting and inactive and thus leads to structural unemployment, labour-supplying households may prefer to enter the production structure by entering the tenancy market and become pure tenants. At the other end of the economic structure are the owners of land who own land but do not themselves cultivate the land and are part of the non-farm sector. They form the supply side in the lease market.

Figure 2.1: Farm Households and Rate of Change over the Years in India (in per cent)



As per the data of Census of India, the share of households depending on farm sector for their livelihood during the period of 1981 which is registered 60.51 per cent shows a declining tendency in 1991 and 2001 at the all India level. Another source of data of allocation of individuals over sector is the NSSO data set, the share of farm households depending on agriculture during the period of 1993-94 which is noticed 78.4 per cent. By 2004-05, the share slightly declined to 72.7 per cent of farm households. From above, two sources indicates the share of farm sector households depending on agriculture for their livelihood has declined and there is an increase in non-farm sector.

Table 2.1

Changes in the Share of Farm Sector across States from Two Sources: Census and NSSO

	Census			NSSO		
State	1981-1991	1991-2001	1981-2001	1993-2000	2000-2005	1993-2005
A P	0.93	-2.97	-2.04	-0.5	-7	-7.5
Assam	-	-2.09	-	-11.5	6.6	-4.9
Bihar	0.70	0.01	0.70	-3.7	-2.7	-6.4
Gujarat	-3.67	0.24	-3.43	1.1	-2.5	-1.4
Haryana	-1.07	-2.13	-3.20	-3.4	-4.4	-7.8
Karnataka	-1.61	-2.09	-3.70	0.9	-1.1	-0.2
Kerala	-1.80	-11.55	-13.35	-8.1	-6.3	-14.4
M P	-1.97	6.63	4.66	-2.7	-4.6	-7.3
Maharashtra	-1.65	0.45	-1.21	0	-2.6	-2.6
Orissa	-0.61	1.02	0.41	-2.7	-9.2	-11.9
Punjab	-0.26	-14.87	-15.13	-2.1	-5.7	-7.8
Rajasthan	-1.40	9.94	8.54	-2.2	-4.8	-7
Tamil Nadu	-1.37	-6.71	-8.08	-2.6	-2.5	-5.1
U P	-4.22	-1.19	-5.40	-3.8	-3.4	-7.2
W B	-2.69	-4.68	-7.37	0.3	-0.9	-0.6
India	-1.53	-0.79	-2.32	-2.1	-3.6	-5.7

Source: Census data are compiled from different issues of Statistical Abstract of India. NSS Report No.409, 458 and 515. Employment and Unemployment Situation in India.

Note: ('91-'81) refers to change in value over the period 1991 to 1981, and ('01-'91) refers to change in value between 2001 and 1991**,** and ('00-'93) refers to change in value over the period 2000 to 1993, and ('05-'00) refers to change in value between 2005 and 2000.

In table 2.1, presents the changes in the share of farm sector over a period of time from two sources (Census and NSSO) at state level. According to Census estimate, the share of households in the farm sector during the period 1981-1991 has declined by 1.53 per cent, where as it has declined by 0.79 per cent during the period 1991-2001. During the same period 1981-2001 there was a decline of 2.32 per cent of households in the farm sector share at all India level. Analyzing data from the NSSO, the share of farm sector has declined by 2.1 per cent during the period 1993-94 to 1999-2000, while for the period of 1999-2000 to 2004-05 the share of farm sector has declined by 3.6 per cent households. Whereas 1993-94 to 2004-05 share of farm sector has declined by 5.7 per cent households at all India level during the same period.

If one analysis the share of farm sector using the Census, one can observe that the share of farm sector has decreased in all the states of India except in Andhra Pradesh and Bihar which have shown an increase of 0.93 per cent and 0.70 per cent during the years 1981-1991, then further these two states declined in 1991-2001. For 1991-2001, there is increase in share of

farm sector has been observed in the states of Rajasthan, Madhya Pradesh, Orissa and Maharashtra which saw an increase of 9.94 per cent, 6.63 per cent, 1.02 per cent and 0.45 per cent respectively. From 1981-2001, the increase in share of farm sector has been observed in Rajasthan (8.54 per cent), Madhya Pradesh (4.66 per cent), Bihar (0.70 per cent) and Orissa (0.41 per cent) respectively.

During 1981-1991 the share of farm sector has declined by 4.22 per cent, 3.67 and 2.69 per cent in Uttar Pradesh, Gujarat and West Bengal, respectively. During 1991-2001 Census, Punjab, Kerala, Tamil Nadu and West Bengal have depicted a decline in the share of households of farm sector by 14.87, 11.55, 6.71 and 4.68 respectively. During the period of 1981-2001 Punjab witnessed decline in the farm sector by 15.13 per cent, Kerala 13.35 per cent, Tamil Nadu 8.08 per cent and West Bengal 7.37 per cent respectively.

According to the NSSO data, a decline in the share of farm sector across all the states has been observed from 1993-94 to 2004-05. Out of all the states, four states, namely, Kerala, Orissa, Haryana and Andhra Pradesh are showing highest share of decline in farm sector households. In Kerala there is a decline of 14.4 per cent, 11.9 per cent in Orissa, 7.8 per cent in Haryana and 7.5 per cent in Andhra Pradesh. As per the data from 1993-94 to 1999-2000 NSSO there is a decline in Assam, Kerala and Uttar Pradesh by 11.5 per cent, 8.1 per cent and 3.8 per cent respectively. During the period 1999-2000 to 2004-05 Orissa, Punjab and Rajasthan declined share by 9.2 per cent, 6.6 per cent and 4.8 per cent respectively. Both the sources show a decline in the share of the farm sector over time in nearly all the states over time even though the shares are different due to different methodologies used in the two methods.

2.1.2 Changes in the Share of Agricultural Labour-supplying Households

The farm sector has two components: namely agricultural labourers and cultivators. A decrease in the share of farm sector may be due to a decrease in the share of agricultural labour households and/or due to a decrease in the share of cultivators in the rural sector. The implication of these changes could be very different for the rural labour market. A decrease in the share of agricultural labour households would imply an inward shift in the labour-supply schedule. While a decrease of cultivators might either imply increasing land concentration and by implication an increase in demand or land being kept fallow or leased

out land which again would influence the demand schedule of labour market. Here an attempt is made to present the trends of these two parts.

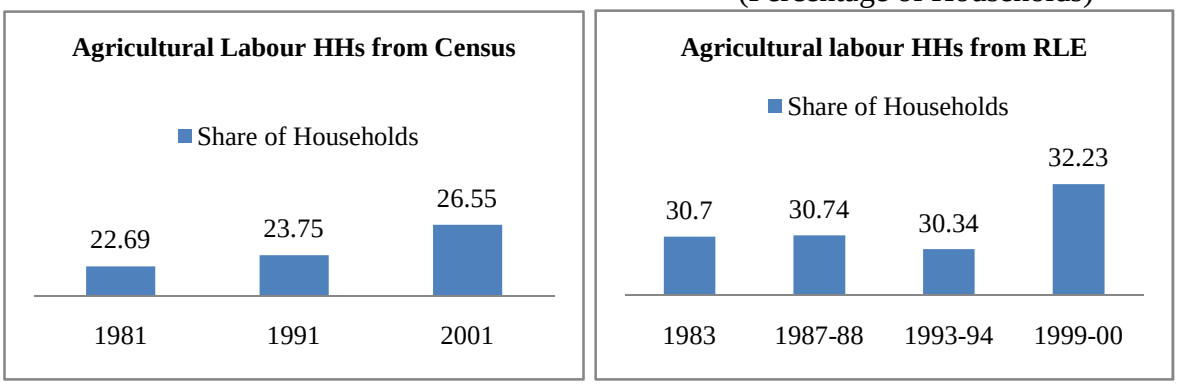
Labour-supplying households are those who sell labour time in the labour market. As the aggregate data sets do not classify households based on the labour resource but on land resource it does not give a perfect indication of labour-supplying households. So an attempt is made to classify households in labour-supplying households based on the land owned. Three classes of labour-supply households have been identified in a land based classification: (a) pure labour-supplying households: households in the farm sector who do not own or operate land, (b) effective labour-supplying households (<1 acre landed Households), and (c) small and marginal farmers who are identified as part labour-supplying households. These households are identified as labour-supply households.

(a) Agricultural Labour Households

The agricultural labour households (AGL) labour-supply that form the main component of the supply-side of the labour market. Agricultural labour households sell labour time in the labour market. Since this group of households is totally divorced from ownership of land, they might be expected to give an accurate measure of the rural proletariat (Basole and Basu, 2011). According to NSSO data, the extent of landlessness has stayed more or less constant over the last five decades.

Figure 2.2: Proportion of Agricultural Labour Households from Two Sources (Census and NSSO) in India over Time

(Percentage of Households)



The Proportion of Agricultural labourers households to total are again presented via two sources: Census and *Rural labour enquiry*. According to the Census of India, the share of

agricultural labour was 22.69 per cent in 1981. Further its share has increased to 23.75 and 26.55 in 1991, 2001. As per *Rural Labour Enquiry*, which indicates there is marginal fluctuation of agricultural labourers. The ratio was 30.7 per cent in 1983, it declined marginally to 30.34 in 1993-94, and there is again an increasing trend.

Table 2.2
Share of Agricultural Labour Households: 1981 to 2001

	Census			Rural Labour Enquiry			
State	1981-91	1991-01	1981-01	1983-87	1987-93	1993-99	1983-99
Andhra Pradesh	4.83	0.84	5.67	-2.05	1.98	1.04	0.97
Assam	10.45	2.8	13.25	0.26	3.27	-5.72	-2.19
Bihar	1.68	8.47	10.15*	-1.05	3.16	3.3	5.41
Gujarat	2.32	1.23	3.55	3.66	3.48	-3.01	4.13
Haryana	3.13	-2.3	0.83	-0.51	-3.86	2.84	-1.53
Karnataka	2.01	-0.01	2	2.75	-1.6	3.96	5.11
Kerala	-1.49	-7.42	-8.91	-1.56	-1.92	-6.38	-9.86
Madhya Pradesh	-1	8.89	7.89**	1.28	3.42	-0.56	4.14
Maharashtra	0.3	1.75	2.05	0.09	2.53	0.56	3.18
Orissa	1.13	9.97	11.1	-1.19	-9.76	17.86	6.91
Punjab	2.54	-6.88	-4.34	2.85	-0.42	-3.1	-0.67
Rajasthan	2.04	2.48	4.52	1.56	-2.69	-2.08	-3.21
Tamil Nadu	2.75	-1.66	1.09	-2.07	1.91	3.07	2.91
Uttar Pradesh	2.29	6.43	8.72***	2.08	-4.78	4.37	1.67
West Bengal	-0.57	1.9	1.33	-2.61	-3.32	5.66	-0.27
India	1.06	2.8	3.86	0.04	-0.4	1.89	1.53

Source: Census data are compiled from different issues of Statistical Abstract of India (1981 to 2001) and Rural Labour Enquiry (Various reports 1983, 1993-94, and 1999-00).

Note: (1)* Jharkhand is included in Bihar.
** Chhattisgarh is included in Madhya Pradesh.
*** Uttaranchal is included in Uttar Pradesh. (Census 2001).
(2) # NSSO 'Employment and unemployment Situation in India' report gives the information farm sector only, but 'Rural Labour Enquiry' can exclusively give information on Agricultural labour Households (AGL), so have taken for this study.
(3) ('91-'81) refers to change in value over the period 1991 to 1981, and ('01-'91) refers to change in value between 2001 and 1991**,** and ('87-'83) refers to change in value over the period 1987 to 1983, ('93-'87) refers to change in value over the period 1993 to 1987, refers to change in value over the period 1993 to 1987 and ('00-'93) refers to change in value between 1993 and 2000.

According to the Census of India data, the share of agricultural labour households has increased by 1.06 per cent during 1981-91, and by 2.8 per cent during 1991-2001. At the all India level, there is an increase of 3.86 per cent in the share of labour households during the period of 1981-2001. According to *Rural Labour Enquiry* report 1983-1987, the share of rural agricultural labour households increased by 0.04 per cent at the all India level, while a decline of 0.40 per cent has been observed in 1993. However, there has been an increase of 1.90 per cent in 1999-2000, and between 1983 to 1999-2000 the share of agricultural labour

households has increased by 1.53 per cent. At the aggregate, one can say that the share of pure labour supply individuals has marginally increased over time.

The state-wise trends of the share of agricultural labour households are presented in Table 2. It can be observed that the share of agricultural labour households has seen a steady increase in all the fifteen states (Census of India), while in Andhra Pradesh, Haryana, Tamil Nadu and Punjab it has increased more. Andhra Pradesh saw 4.83 per cent, Haryana about 3.13 per cent, Tamil Nadu 2.75 per cent and Punjab 2.55 per cent increase from 1981-1991. During this period, 1981-1991 the following states have declined Kerala 1.49 per cent, Madhya Pradesh 1 per cent and West Bengal 0.57 per cent.

During the period 1991-2001, the share of agriculture labour households increased in Orissa 9.97 per cent, Madhya Pradesh 8.89 per cent, Bihar 8.47 per cent and Uttar Pradesh 6.43 per cent respectively. Again during this period 1991-2001 there is a decline of 7.42 per cent in Kerala, 6.88 per cent in Punjab, Haryana 2.31 per cent and Tamil Nadu 1.66 per cent respectively. During 1981-2001 share of agriculture labour households have increased in Orissa 11.10 per cent, Bihar 10.15 per cent, Uttar Pradesh 8.71 per cent and Madhya Pradesh 7.89 per cent respectively. Again during this period 1981-2001 there was deceleration in Kerala 8.91 per cent and Punjab 4.33 per cent respectively.

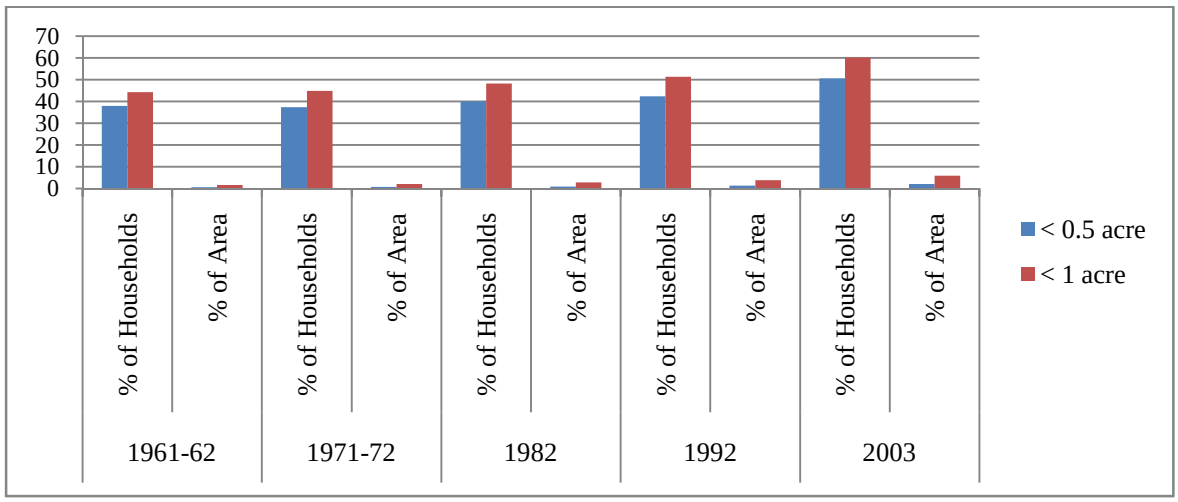
According to the *Rural Labour Enquiry* report, the share of agricultural labour households increased in states of Gujarat by 3.65 per cent, Punjab 2.85 per cent, Uttar Pradesh 2.08 per cent and Rajasthan 1.55 per cent during 1983-87. Whereas in the same period there is a decline in West Bengal by 2.61 per cent, Tamil Nadu 2.07 per cent, Andhra Pradesh 2.05 per cent and Kerala 1.56 per cent respectively. From 1987-88 to 1993-94 shares of agricultural labour households increased in Gujarat by 3.48 per cent, Madhya Pradesh 3.42 per cent, Assam 3.27 per cent and Bihar 3.16 per cent respectively. Whereas it had declined in Orissa by 9.76 per cent, Uttar Pradesh 4.78 per cent, Haryana 3.86 per cent and West Bengal 3.32 per cent respectively during the same period. During 1993-94 to 1999-00 there is an increase in the share of agriculture labour households in Orissa by 17.86 per cent, West Bengal 5.66 per cent, Uttar Pradesh 4.37 per cent, Bihar 3.30 per cent respectively. Whereas there is a decline in Kerala of 6.38 per cent, Assam 5.72 per cent, Punjab 3.09 per cent and Gujarat 3.01 per cent in the same period. During 1983 to 1999-00 share of agricultural labour households increased in the states of Orissa by 6.91 per cent, Bihar 5.41 per cent,

Karnataka 5.11 per cent and Madhya Pradesh 4.14 per cent. During the same period 1983 to 1999-2000 there share is a decline in Kerala of 9.86 per cent, Rajasthan 3.22 per cent and Assam 2.18 per cent. As in the all India level, majority of the states are witnessing marginal increase in the share of pure labour-supplying households.

(B) Effective Labour-supplying Households

NSSO defines landless households as only those households which own less than 0.05 hectares. However, data put out by the NSSO itself for 2002-03 show that those households owning less than one acre use more than 90 per cent of their land as homestead. Thus if landlessness is understood as pertaining to land that can be used for cultivation and that can generate some income for the family, then a more realistic definition must consider all households owning less than 1 acre as "effectively landless" (Basole and Basu, 2011). Two pieces of evidence can be offered in support of this claim. First, NSSO data reveal that 62 per cent of agricultural labourers come from households that own more than 0.025 hectares but less than 1 acre of land. These are the every households that we have clubbed together with pure landless in the category "effective landless".

Figure 2.3: Proportion of Effectively Landless among All Rural Households
(Percentage of rural households)



Source: Report No 491, NSS 59th Round, January-December 2003, p.12.

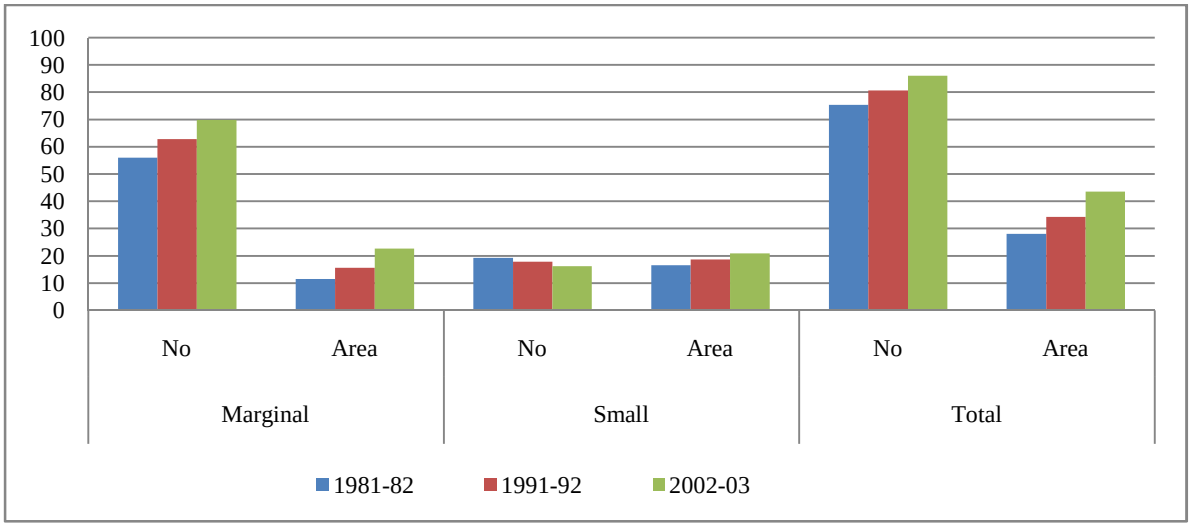
Second, in keeping with the foregoing finding, households owning less than one acre of land derive 60 per cent of their income from wages. One caveat that should be added is that

"effective landless" households may still cultivate their small plots. This means effective landless households also contribute to the agricultural operations.

(C) Small and Marginal Farmers

A small and marginal farmer owns land but it can be assumed that their land may not be enough to meet their consulting so might also be entering the labour market as suppliers of land. Unlike agricultural laboour households who are pure labour-supplying households, these households can be identified as part labour-supplying households. As these households own land, they will use their family labour to organize production and any 'surplus' labour will enter the labour market. An increasing importance of small farmers influences the demand as well as the supply of labour. The specification of demand for labour also poses certain problems in the analysis of rural labour markets. First, the employment of workers in agricultural operations, most of whom work on family farms, gets extended to the extent of supply, rather than being fixed at the point of equality between wage rates and the marginal product. The number of workers engaged in agriculture is, therefore, not a reliable indicator of the demand for labour and most of it may be invariant in relation to the wage rates (Papola and Misra, 1980). Here we present the share of these households at the all India level and state level trends are presented later.

Figure: 2.4 Structure and Number and Area Share of Marginal and Small Farmers all India Level for Three Rounds of NSSO



Source: NSS Report No.492: Household Ownership Holdings in India, 2003.

The share of these households in terms of their number and share of land owned by this group is presented in fig no.2.4 for three periods. In 1981-82, marginal operational holdings constitutes 56 per cent and operating 11.5 per cent of area while small farmers constitutes about 19.3 per cent but their operated area is 16.6 per cent. By 1991-92, land operated by marginal farmers was 62.8 per cent and area operated by them was 15.6 per cent while for the small farmers total operational holdings were17.8 per cent but operated area was 18.7 per cent. During the 2002-03, marginal holdings registered 69.8 per cent and operated area was 22.6 per cent. Marginal, small farmers together counted for 75.3 per cent operational holdings but area controlled by them was 28.1 per cent in 1981, those increased in terms of operational holdings and operated area during 1991-92, 2002-03. The share of small and marginal holding has witnessed a continuous increase over time and the land owned by these households is also increasing. This trend is true for all the states over time.

Table 2.3
State-wise Distribution of Number of Holdings and Area in Percentage - Land Operated by Marginal and Small Farmers

(Rural)

State	Year	Marginal		Small		Total	
		No.	Area	No.	Area	No.	Area
A P	2002-03	60.7	18.6	20.7	21.1	81.4	39.7
	1991-92	59.3	17.5	21.4	23.3	80.7	40.8
	1981-82	48.6	10.3	22.1	15.4	70.7	25.7
Assam	2002-03	76.2	42	18.4	36	94.6	78
	1991-92	70.8	34.2	20	31.2	90.8	65.4
	1981-82	61.6	22.1	24.3	33.5	85.9	55.6
Bihar	2002-03	82.6	43	12.2	27.4	94.8	70.4
	1991-92	76.8	29	13.7	25.1	90.5	54.1
	1981-82	68.7	22.4	17.6	25.9	86.3	48.3
Gujarat	2002-03	60	13.1	17.3	15	77.3	28.1
	1991-92	47.9	8.5	19.9	13.8	67.8	22.3
	1981-82	38.6	6.5	20.4	11.3	59	17.8
Haryana	2002-03	66.3	10.4	12.8	13.5	79.1	23.9
	1991-92	50.7	5.3	13.5	8.8	64.2	14.1
	1981-82	42.2	3.7	12.7	7.3	54.9	11
Karnataka	2002-03	58.2	16.2	20.4	20	78.6	36.2
	1991-92	49.7	9.6	20.3	15.4	70	25
	1981-82	38.4	5.8	22.5	13.2	60.9	19
Kerala	2002-03	91.8	57.8	6.2	23.3	98	81.1
	1991-92	91.6	53.3	5.9	23.4	97.5	76.7
	1981-82	88.9	45.5	7.3	24.1	96.2	69.6

MP	2002-03	51.2	13.1	23.3	20.3	74.5	33.4
	1991-92	38.7	6.7	24.4	15.6	63.1	22.3
	1981-82	32.9	4.7	22.5	12.3	55.4	17
Maharashtra	2002-03	49.5	12	21.4	17.7	70.9	29.7
	1991-92	43.6	6.7	18.9	11.8	62.5	18.5
	1981-82	35.3	3.6	19.5	9.4	54.8	13
Orissa	2002-03	78.4	43	15.2	28.7	93.6	71.7
	1991-92	60	22.1	24.3	30.2	84.3	52.3
	1981-82	54.5	17	26.1	26.5	80.6	43.5
Punjab	2002-03	66.3	7.3	11.2	11.7	77.5	19
	1991-92	63.2	6.2	11.4	10.7	74.6	16.9
	1981-82	59	3.9	10.4	8.9	69.4	12.8
Rajasthan	2002-03	49.4	9	18.5	10.9	67.9	19.9
	1991-92	39.3	5.6	19.9	9.4	59.2	15
	1981-82	30.5	3.6	17.5	7	48	10.6
Tamil Nadu	2002-03	77.1	30.9	13.4	24.2	90.5	55.1
	1991-92	77.2	28.9	14.1	28.1	91.3	57
	1981-82	71.4	22.4	16.7	26.7	88.1	49.1
U P	2002-03	76.7	35.7	15.9	29.2	92.6	64.9
	1991-92	68	25	18.5	26.3	86.5	51.3
	1981-82	59.6	18.1	21.6	23.8	81.2	41.9
W B	2002-03	88.8	58.3	8.9	26.7	97.7	85
	1991-92	80.7	40	13.4	30.7	94.1	70.7
	1981-82	74.3	29.3	15.8	28.8	90.1	58.1
India	2002-03	69.8	22.6	16.2	20.9	86	43.5
	1991-92	62.8	15.6	17.8	18.7	80.6	34.3
	1981-82	56	11.5	19.3	16.6	75.3	28.1

Source: NSS Report No.492: Household Ownership Holdings in India, 2003.

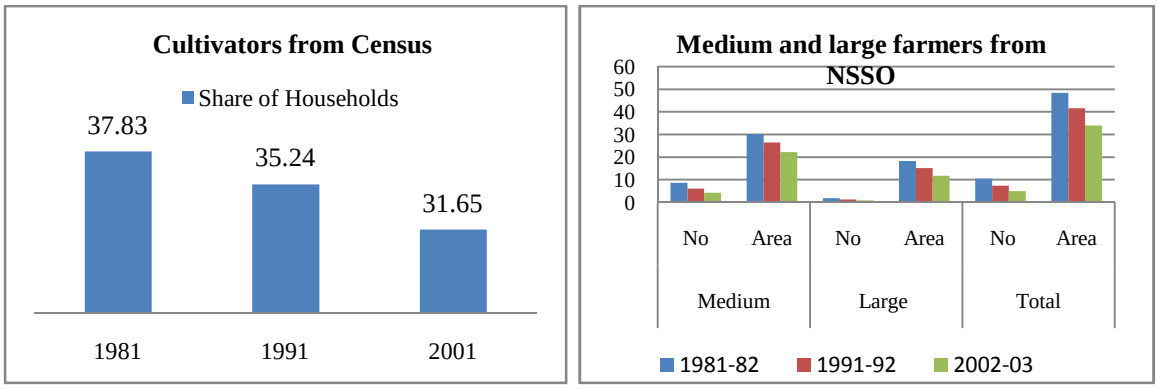
If one sees the trends with respect to labour-supplying households, the share of pure labour-supply households (landless labour households) is increasing marginally over time but the share of part labour-supplying households (small and marginal farmers) is showing a consistence increasing over time. The part labour-supplying households also own land and so internalize part of the supply households. Interestingly, the share of part labour supply is increasing consistently over time and space.

2.1.3. Changes in Share of Agricultural Labour-demanding Households

The cultivators are main source of demand for labour in agrarian economy. The composition of cultivators has a significant impact on the demand for labour. Using land ownership data to derive the demand for labour, one could assume that medium and large scale land owners

can be assumed to demand for labour. A caveat here is that, a household may be owner of land but may not be operating the land and so may not have a demand for labour. Given the limitation, one may assume that as the size of land ownership increases demand for labour also increases. Medium and large scale land owners may also use their own family labour for production but as the size of land cultivated increases the share of family labour decreases and the component outside labour increases or need for labour from the outside the households increases. The study of Basole and Basu (2011) indicates that medium and large scale farmers can generate employment for agricultural labour households. Small and marginal farmers do not give employment for agricultural labour households, as their output is low. Land holders, who have at least 10 acres can generate employment and as well as output in the market.

Figure 2.5: Labour-demanding Households from Census 1981-2001 and Medium and Large farmers from NSSO 1981-82 to 2002-03.



First, let us consider the all India trend before moving to trends at the state level. The changing share of cultivator households in all India level is presented from two sources viz., the Census and NSSO. According to the Census of India, the share of cultivator households during 1981 is registered as 37.93 per cent and declined to 35.24 per cent by 1991 and it further declined by 3.18 per cent by 2001. So at the all India level, the share of households in the farm sector is decreasing but one is witnessing a relative constancy in the share of agricultural labour households and a decline in the share of cultivators implying that the change in the farm sector composition is due to diversification of cultivators to non-cultivators. This imply either land concentration (and by implication a greater demand for labour) or rate of increase of number of cultivators is less than the rate of increase in total households/individuals.

One then sees the trend of increased land concentration in the rural areas. Based on NSSO, can be observed that the share of medium scale farmers was 8.6 per cent households holding the land and their area was 30.2 per cent in 1981-82. In 2002-03, the share of these households was 4.2 per cent holding and the land owned was 22.2 per cent. If one considers large scale farmers during the 1981-82, the number of holding 1.9 per cent households, and the area was 18.2 per cent, whereas in 2002-03 number of holding the land 0.8 per cent households and area also 11.8 per cent. This means the number of holdings and area of the land has declined over the period from 1981-82 to 2002-03. So one does not sees a significant increase in medium and large land owners or households with potential to increase demand for labour.

Table 2.4
The Proportion of Cultivators Households based on Census from 1981 to 2001

State	Percentage of Cultivators			Share of households		
	1981	1991	2001	1981-91	1991-01	1981-2001
Andhra Pradesh	30.23	26.34	22.52	-3.89	-3.81	-7.71
Assam	-	44.00	39.11	-	-4.89	-
Bihar	41.17	40.19	31.73	-0.98	-8.47	-9.44
Gujarat	34.28	28.30	27.30	-5.98	-1.00	-6.98
Haryana	40.04	35.85	36.03	-4.20	0.18	-4.02
Karnataka	34.94	31.32	29.25	-3.62	-2.07	-5.69
Kerala	11.42	11.11	6.98	-0.31	-4.13	-4.43
Madhya Pradesh	46.50	45.53	43.27	-0.96	-2.26	-3.23
Maharashtra	31.95	30.00	28.69	-1.95	-1.31	-3.26
Orissa	40.44	38.70	29.75	-1.74	-8.95	-10.69
Punjab	33.42	30.62	22.62	-2.80	-7.99	-10.80
Rajasthan	51.28	47.83	55.29	-3.44	7.45	4.01
Tamil Nadu	27.52	23.41	18.35	-4.11	-5.06	-9.17
Uttar Pradesh	55.67	49.18	41.56	-6.50	-7.62	-14.11
West Bengal	27.88	25.76	19.18	-2.12	-6.58	-8.71
India	37.83	35.24	31.65	-2.58	-3.59	-6.17

Source: Census data are compiled from different issues of Statistical Abstract of India.
Note: (1) * Jharkhand is included in Bihar.
** Chhattisgarh is included in Madhya Pradesh.
*** Uttaranchal is included in Uttar Pradesh. (2001 Census)
(2) ('91-'81) refers to change in value over the period 1991 to 1981, and ('01-'91) refers to change in value between 2001 and 1991**.**

The percentage of cultivators households at the all India and state levels during 1981-2001 was sourced from Census of India. According to Census the share of cultivators has declined by 2.58 per cent during 1981-1991 and further again declined by 3.59 per cent during 1991-2001.According to Census of India data at the state level in Uttar Pradesh, the share of cultivators households have increased by 5.98 per cent during the period of 1981-1991, while during the period of 2001 it shows a whopping 7.62 per cent declined. Whereas rests

of states the share of cultivators witnessed a decline in Gujarat by 5.98 per cent Haryana by 4.20 per cent and Andhra Pradesh 3.89 per cent have improved their share. When it comes 1991-2001 of cultivators Orissa 8.95 per cent and Bihar 8.47 per cent increased. And declined households states are Punjab 7.99 per cent and Uttar Pradesh 7.62 per cent. Whereas during 1981-2001 over the period of the following states are Uttar Pradesh 14.11 per cent, Punjab 10.80 per cent, Orissa 10.69 per cent and Bihar 9.44 per cent declined.

During the period 1991-2001 share of cultivators 7.45 per cent has increased. Given that nearly all the states follow the trend following the all India trend, excluding Haryana and Punjab.

Table 2.5

Number of Holdings and Area in Percentage of Land Operated by Labour-demanding Households (Medium and Large Farmers) from Different Rounds of NSSO

(Rural)

State	Year	Medium		Large		Total	
		No.	Area	No.	Area	No.	Area
Andhra Pradesh	2002-03	5.5	22.1	1.1	15.5	6.6	37.6
	1991-92	5.4	23.5	0.8	9.4	6.2	32.9
	1981-82	10.8	30.2	2.9	23.1	13.7	53.3
Assam	2002-03	0.6	4.9	0	0	0.6	4.9
	1991-92	1.5	9.1	0.2	2.6	1.7	11.7
	1981-82	2.7	13.7	0.1	1.4	2.8	15.1
Bihar	2002-03	1	8.7	0.2	3.2	1.2	11.9
	1991-92	2.5	18.2	0.2	3.9	2.7	22.1
	1981-82	3.4	18.8	0.4	5.9	3.8	24.7
Gujarat	2002-03	9.8	37.3	1.8	15.6	11.6	52.9
	1991-92	12.1	35	2.5	17.8	14.6	52.8
	1981-82	15.8	38.6	3.9	21.1	19.7	59.7
Haryana	2002-03	7.8	35	0.9	15.1	8.7	50.1
	1991-92	11.5	29.4	4	31	15.5	60.4
	1981-82	18.8	45.6	3.4	17.9	22.2	63.5
Karnataka	2002-03	7.1	27.8	1.1	11.1	8.2	38.9
	1991-92	9.8	30.8	2.3	19	12.1	49.8
	1981-82	13.2	32.7	3.7	24.1	16.9	56.8
Kerala	2002-03	0.5	7.2	0	0	0.5	7.2
	1991-92	0.5	8.1	0	0.4	0.5	8.5
	1981-82	0.8	10.1	0.1	1.9	0.9	12
MP	2002-03	7.7	27	1.2	11.2	8.9	38.2
	1991-92	13.5	35.9	2.5	16.4	16	52.3
	1981-82	17.9	38.6	3.6	20.2	21.5	58.8

Maharashtra	2002-03	8.8	29.2	1.2	10.7	10	39.9
	1991-92	14.1	36.6	3	20.3	17.1	56.9
	1981-82	18.4	37.9	5.6	29.1	24	67
Orissa	2002-03	1.1	8.6	0.1	0.9	1.2	9.5
	1991-92	3.4	16.2	0.3	3.7	3.7	19.9
	1981-82	4.6	17.8	0.7	12.5	5.3	30.3
Punjab	2002-03	7.8	36.4	1.9	18.5	9.7	54.9
	1991-92	9.8	40.6	1.7	15.8	11.5	56.4
	1981-82	14.2	45.9	2.5	19.6	16.7	65.5
Rajasthan	2002-03	11.5	28.4	4.7	33.1	16.2	61.5
	1991-92	15.2	30.2	7.1	37.7	22.3	67.9
	1981-82	22.5	36.5	7.4	35.9	29.9	72.4
Tamil Nadu	2002-03	2.7	20.4	0.1	1.5	2.8	21.9
	1991-92	1.8	13.2	0.3	5.1	2.1	18.3
	1981-82	3.4	20.7	0.3	4.8	3.7	25.5
U P	2002-03	1.7	12.5	0.1	2.8	1.8	15.3
	1991-92	3.3	18.2	0.3	4.3	3.6	22.5
	1981-82	5.4	23.6	0.5	6.5	5.9	30.1
W B	2002-03	0.2	2.7	0	0	0.2	2.7
	1991-92	0.9	7.3	0	0	0.9	7.3
	1981-82	1.7	11.4	0.1	2.3	1.8	13.7
India	2002-03	4.2	22.2	0.8	11.8	5	34
	1991-92	6.1	26.4	1.3	15.2	7.4	41.6
	1981-82	8.6	30.2	1.9	18.2	10.5	48.4

Source: NSS Report No.492: Household Ownership Holdings in India, 2003.

We have considered medium and large scale farmers as the main demanders for labourers. Considering the country as a whole, the large and medium holdings, who make up 10 per cent of the total cultivators, owned 5.4 per cent of the total land during 1971-72. However, their share of land continued to decline to 3.5 per cent in 2003 while their proportion has declined by half to 5 per cent[1]. The NSSO data on medium and large farmers is one important source that gives information about land classifications from where we can infer how the cultivators generate employment to agricultural labourers.

Structurally one is witnessing a decline in the share of farm sector over time as well as across states. The changing structure is due to a decline in the proportion of cultivating

[1] Amit Basole and Deepankar Basu (2011), using NSSO data, classified states on the basis of medium and large scale farmer households and identified two types of states based on this, which they have classified as large land holding states and small and marginal land holding states. Based on their classification, Andhra Pradesh, Gujarat, Haryana, Karnataka, Madhya Pradesh, Maharashtra, Punjab and Rajasthan have been identified as large land holding states, while Assam, Bihar, Kerala, Orissa, Tamil Nadu, Uttar Pradesh and West Bengal have been classified as small and marginal holding states.

households and also a relatively constant share of agricultural labour households. This trend is true at the all India level as well as across states with some minor exceptions. In other words, the share of pure labour-supplying households is relatively constant while a partial labour-supplying household is witnessing a major increase. These households partly sell their labour power and partly use their family labour for self cultivation. An increase in this form of households not only decreases the aggregate labour-supplying schedule in the village but also decrease the demand for labour in the labour market. If one sees the demand side of the labour market, the major source of demand for labour is the medium and large scale farmers who are witnessing a decline in their number as well as land owned by in terms of the share of households. So here is a situation where the pure labour-supplying households witness a relatively constant proportion but the major source of labour-demanding households witness a significant decline in their number and area owned. In such a situation, it is interesting to see what are the alternative institutional arrangements open to the households in the farm sector to meet their subsistence. The following section presents those options are open.

2.2 Choices Open to Households in the Farm Sector

Households in the farm sector have many options to earn an income for their subsistence. These options could be either to enter the land lease market or to enter the non-farm sector. These options would influence the functioning of the labour market. So here we present the options open to the households in the farm sector households at the state level.

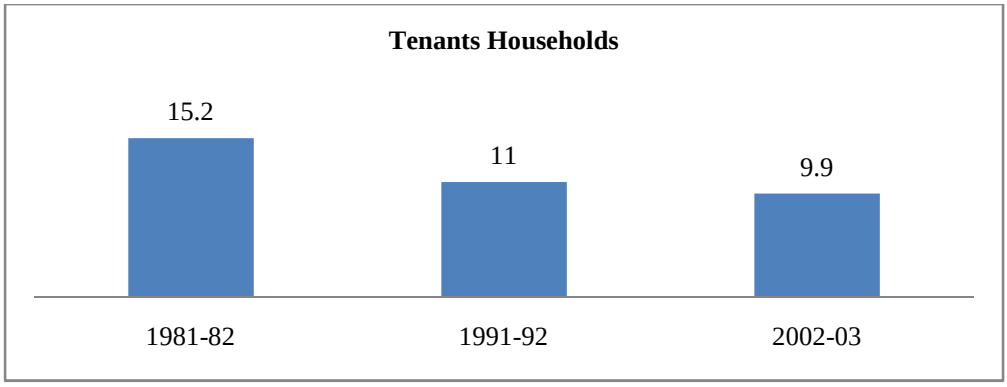
2.2.1: The Proportion of Tenant Households Holdings

One of the options open to the households in the farm sector is to enter the land lease market. An agricultural labourer can become a land operator by leasing in land while a cultivator can increase the land under operation. In the first case a landless labourer household enters the land lease market and converts themselves from pure labour-supplying households to part labour-supply households. While in the second case, the demand for labour increases.

The proportion of tenant households at the all India level is presented in fig. no. 2.6. Out of the total households registered, 15.2 per cent were tenant households in 1981-82. This trend has come down to 11 per cent in 1991-92 and again declined to 9.9 in 2002-03. While the

table below gives a good idea regarding the inter-state differential in both the percentage of tenant holdings and share of leased-in area, little can be said definitely regarding the trends in the latter parameter at the state level. The last survey had noted an increase in the share of leased-in area in Punjab and Haryana during the 1980's, but this increase, even if genuine, does not appear to be consistent one.

Figure: 2.6. The share of Tenant Households at the All India level from1981-82 to 2002-03



Source: Report No.491 NSS 59th Round: Household Ownership Holdings in India, 2003.

The results of these three years suggest that, despite the clear fall in the percentage of tenant holdings, the share of leased-in area has increased during the 1980's. But the results of the 59th round indicate that both the percentage of tenant holdings and the share of leased-in area are declining. Most States appear to conform to this pattern. Orissa and Gujarat are, however, exceptions.

The change in the percentage of tenant households during the period of 1981-1991 at all India level is 4.20 per cent decline, but this has declined to 1.10 per cent during the period of 1991- 2002. Over the period from 1981-2002 there has been a 5.30 per cent decline in tenant households. When it comes to the state wise analysis, Bihar (14.10 per cent) Tamil Nadu (9.40 per cent), Haryana (8.80 per cent) and Punjab (4.20 per cent) have registered a decline, whereas Madhya Pradesh (1.00 per cent) and Andhra Pradesh (0.30 per cent) have registered increase during the period of 1981-1991. Considering the period between 1991-2002, the percentage of tenant households has declined in Haryana (6.40 per cent), Tamil Nadu (5.90 per cent) and Uttar Pradesh (3.80 per cent), while the states of Bihar (7.10 per cent), Orissa (2.50 per cent), and Gujarat (1.60 per cent) (see Table 2.6).

Table 2.6
The Percentage of Tenant Holdings Households for Different States from 1981-82 to 2002-03

State	Actual			Increments		
	1981-82	1991-92	2002-03	1981-91	1991-2002	1981-2002
AP	13.8	14.1	12.9	0.3	-1.2	-0.9
Assam	12.9	10.1	8.9	-2.8	-1.2	-4
Bihar	19.7	5.6	12.7	-14.1	7.1	-7
Gujarat	4.8	3.7	5.3	-1.1	1.6	0.5
Haryana	25.9	17.1	10.7	-8.8	-6.4	-15.2
Karnataka	10.7	8	4.6	-2.7	-3.4	-6.1
Kerala	6.7	5.2	5.1	-1.5	-0.1	-1.6
MP	8	9	7.3	1	-1.7	-0.7
Maharashtra	10.6	6.9	6.6	-3.7	-0.3	-4
Orissa	18.2	16.9	19.4	-1.3	2.5	1.2
Punjab	21.3	15.9	13.1	-5.4	-2.8	-8.2
Rajasthan	7.1	6.5	2.9	-0.6	-3.6	-4.2
Tamil Nadu	24.7	15.3	9.4	-9.4	-5.9	-15.3
UP	20.5	15.5	11.7	-5	-3.8	-8.8
WB	23.1	14.4	14.1	-8.7	-0.3	-9
India	15.2	11	9.9	-4.2	-1.1	-5.3

Source: Report No.491 NSS 59th Round: Household Ownership Holdings in India, 2003.

During 1981-2002, the per cent of tenant households have declined in the states of Tamil Nadu (15.30 per cent), Haryana (15.20 per cent) and West Bengal (9.00 per cent). However, Orissa (1.20 per cent) and Gujarat (0.5 per cent) have shown increase. So one can see a decline in the share of tenant households over time and space (see Table 2.6).

2.2.2. Rural Non-farm Sector Households

A second option open to households in the farm sector is the non-farm sector. The rural non-farm economy or sector includes all rural economic activities outside of agriculture. Non-farm activity may take place at home or in factories or be performed by itinerant traders. It includes small and large activities of widely varying technological sophistication (Steven Haggblade, Hazell, Reardon, 2007). Rural non-farm sector occupies around 25 to 50 per cent of the rural labour force in the developing countries (Hazell and Steven Haggblade, 1991). The demand for the non-farm goods increases due to the working of Engel law which states that the proportion of income spent on food tends to decline as income grows with given tastes or preferences. The growth of income in rural areas has positive relationship in the

growth of the rural non-farm activities (Mellor 1976; Liedholm and Chuta 1979). The reason for the movement of households from the farm sector to the non farm sector is as yet debatable. Some others see it as a voluntary choice due to the agrarian growth while some see the movement of the labourers from the agriculture as distress driven due to lack of employment opportunities in agriculture, and the excess of the labourers settle in non-agricultural sector as the residual sector (Vaidyanathan, 1986; Mahendra Dev 1990; Jeemol Unni 1991).

The theoretical explanation of growth of non-farm sector is as follows. The agricultural sector is passing through a complex crisis of low productivity, poor competitiveness and adverse climatic conditions. The compound annual growth rate of agriculture and the allied sector from 2000-01 to 2004-05 was 2.02 per cent, the lowest annual growth recorded in the sector since 1980-81. Vinoj Abraham (2009) also shows this decline in agriculture, extending the time period slightly earlier, starting from 1997-98; which shows the widespread decline in the sector, including all the subsectors. Mostly in the underdeveloped countries, surplus labour or disguised employment is prevailed, so this surplus labour leads to another sector. Even development theories (Lewis 1954; Ranis and Fei, 1961; and Yujiro Hayami, 2003) who anlaysed traditional sector (represented by agriculture) and the modern sector (represented by industry) explain in their theories that the surplus labour is leads to non-farm sector in the process of development.

Mc Gee's (1971) Characterisation of urbanization process states that due to the limited absorption capacity in industrial sector, surplus labour settles in low productivity tertiary sector. In the Indian context this has been the dominant development strategy during the 1950s and 1960s. According to the proponents of traditional development theory, economic development hinges on the growth of "modern" capitalistic industry through accumulation of capital. Accumulation proceeds via generation, realisation and reinvestment of surplus created by using fixed capital with labour transferred from the labour-surplus "traditional" sector. However, this path of development can be sustained only if adequate supply of food to the modern sector is guaranteed. Such a process is supposed to transform the traditional sector into a modern one and thereby ensuring self-sustained growth of the less developed economy (Saumya Chakrabarti and Anirban Kundu, 2009).

From the below table (Table 2.7) one can infer the trends of rural non-farm employment structure at the all India and also state levels during the time periods of 1983, 1993-94, 1999-2000 and 2004. The intermediate data set for 1987-88 is not used first because, weather-wise, the year was not a normal one, (Jemol Unni 1997; Chadha G.K and Sahu PP 2002; and Easwaran Kotwal *et al*., 2009). This table shows the structure of rural non-farm employment over the 21 year period (1983 to 2004-05) and is based on the one digit daily status classification of economic activities. However, instead of presenting the shares of all the seven sectors, they aggregated them and displayed as the rural non-farm structure in both the state level and all India level.

Table 2.7

Proportion of Rural Households in Rural Non-farm Sector from 1983 to 2004-05:

State	1983-1993	1993-1999	1999-2004	1983-2004
Andhra Pradesh	0.47	0.6	7	8.07
Bihar	-0.94	3.8	2.6	5.46
Gujarat	5.69	-1.1	2.6	7.19
Haryana	4.86	3.4	4.3	12.56
Karnataka	3.01	-0.9	1	3.11
Kerala	6.43	8.1	6.3	20.83
Madhya Pradesh	0.24	2.7	4.6	7.54
Maharashtra	2.98	0	2.7	5.68
Orissa	-1.78	2.7	9.3	10.22
Punjab	7.38	2	5.6	14.98
Rajasthan	6.69	2.2	4.8	13.69
Tamil Nadu	3.9	2.6	2.7	9.2
Uttar Pradesh	1.86	3.8	3.5	9.16
West Bengal	10.12	-0.3	0.8	10.62
India	-1.09	2.1	3.6	4.61

Source: NSSO, Reports, 341, 409, 458 and 515, Employment and Unemployment Situation in India, Part I.

One can observe that during the period of 1983 to1993-94, rural non-farm activities increased in almost all most all the states, except Bihar and Orissa. Whereas from the period 1993-94 to 1999-2000 the states of Gujarat, Karnataka and West Bengal have registered a decline while the rest of the states exhibited an increase in rural non-farm activities. During the period between1999-2000 to 2004-05, rural non-farm sector has picked up over all the states and also at the all India level. From this we can infer that during the period before globalization (1983), rural non-farm sector has very less opportunities and most of the people are being engaged in agriculture which is the predominant sector. However post

liberalization, i.e., from 1991 onwards, later activities in the rural non-farm sector picked up across all the states.

2.3. Performance of the Rural Labour Market

Performance of the rural labour market can be seen in terms of agricultural wages and employment. Agricultural Wages in India (AWI) is one of its kind sources providing extensive data on agricultural wages year-wise. Even though Directorate of Economic Statistics Bureau provides the data, the error was highlighted by VM Rao (1972) comparing it with two other important other sources of data on agricultural wages, viz., National Sample Survey and Studies in Economics Farm Management.

The comparison shows that the Agricultural Wages India (AWI) data contain errors in relation to both the levels of seasonal variation and operational wise. He found that AWI data has problem with methodology while other sources data methodology is very strong. Pallavi Chavan and Rajashree Bedamatta (2006) have found that there are five limitations in Agricultural Wages in India (AWI). The first limitation is regarding the way "wage" is defined. Second, the error in reporting is likely to increase further as the reporting agencies for AWI do not include trained investigators, unlike those employed by the NSSO. Third, there is no standardisation of the data collection procedures across the states. The fourth problem with the AWI data is the small sample size of villages (often one centre/village per district), which may be inadequate to capture the agricultural employment situation in a given district. Fifth, there have been a number of changes in centres/villages used for collecting data in AWI over the years. AWI is based on data canvassed from one centre per district. The replacement of one centre by a new one becomes a serious handicap while analysing wage data from AWI, as it can bring about an abrupt shift in the level of wages (Chavan and Bedamatta 2006, p.4042).

Though there are errors are found in AWI data, many scholars like (Krishnaji 1971; Jose 1974, 1988; Acharya Sarthi 1989; Parthsarathy 1996; Haque 1998, Sarmah 2002; Himanshu 2005; Srivastava and Singh 2005; and Chavan and Bedamatta 2006) have used the AWI data to study the trend in agricultural wages.

2.3.1 Literature on the Functioning of Rural Labour Market

There are number of studies on analyzing real wages and rate of growth of real wages at both all India and state levels. In agriculture, labour wages are influenced by both demand and supply side factors. The demand side factors includes the size of land holding, extent of irrigation, cropping pattern, paying capacity of cultivators, farm productivity, total average area under crops, cropping pattern, cropping intensity, agricultural output and yields, ecological condition obtaining in the farm, degree of farm mechanization and working expenditure and investment, whereas the supply side factors include health nutrition, climate, size of family, participation in the labour force, subsistence needs, presence and accessibility of market, attitude and education status, incentives, wages and mobility of labour between farm and non-farm jobs and also the size of the labour force (C.Ramaswamy and K.N Selvaraj 1991; Krishnaiah, 2004).

Parthasarathy (1987) studied real wages for male agricultural labour based on data on money wages for agricultural labour for 21 centers in the state of Bihar, Haryana, Madhya Pradesh, Karnataka, Kerala, Punjab, Tamil Nadu, Uttar Pradesh and Andhra Pradesh. The results showed a mixed trend. Acharya Sarathi (1989) conducted the most disaggregated study of real wages for 58 agro-climatic homogeneous regions in the country as defined by the NSS. He covered the period from 1970-71 to 1984-85 for his study. He fitted trends for real wages and tested the significance for males and females separately. Out of the 58 observations, significant rise in the trend was noticed in 34 regions for male workers at less than 10 per cent significance level. These regions fall in the states of Andhra Pradesh, Assam, Madhya Pradesh and Maharashtra. In the states of Punjab and Rajasthan, no region showed a significant rise in the trend. In Uttar Pradesh less than half of the regions showed a rising trend. Only two out of the four regions in Tamil Nadu and West Bengal, only one out of the three regions in Karnataka, and only three out of the five regions in Gujarat showed a significant rise in the trend of real wages. In the case of females, 45 out of the 58 regions showed a significant rise in the trend. It must be noted that the significance was measured at 10 per cent level or less. If the significance is measured at 5 per cent or 1 per cent level which is the usual practice, the number of regions showing significant trend are found to be less. Further, when the rise in the trend is examined for the period from 1975-76 to 1984-85 the rate of growth is found to be much less and the number of regions showing a statistically significant rise in the trend is found to be less. It is important to note here that the regions

which showed a rising trend are depressed wage pockets, as in Madhya Pradesh and Orissa and hence the rise did not contribute to a significant improvement. Parthasarathy (1996) examined compiled information of real wages at centre-wise in nine states, namely, Andhra Pradesh, Karnataka, Bihar, Haryana, Madhya Pradesh, Punjab, Tamil Nadu, Uttar Pradesh and Kerala. Real wages are obtained using the CPIAL 1985-86 prices of Agricultural labourers for the states concerned. He analyzed yearly average wages for male agricultural workers by centres from the *Agricultural Wages India* for the period 1985 to 1994. He observed that out of 35 observations, nine centres clearly showed negative rates of growth of real wages, while out of the rest only 16 centres had a significant rising trend in male real wage rates in agriculture over the said period. Based on the above study, we can infer that in more than half of the centres examined no clear increasing trend in real agricultural wage rates could be identified. Jeemol Unni's (1997) study using AWI data for 14 major states during the period from 1987 to 1995 shows that real wages rates of adult males in agriculture rose in most states up to 1990s and thereafter declined during the post-reform period or from 1991-92. However, Unni identifies that the wage rates rose in 1993 and more or less stagnated thereafter. There were slight variations that are observed in some states, for example, in Gujarat, Kerala, Rajasthan and Madhya Pradesh, the rise was observed in 1992 followed by stagnation thereafter. A more or less similar pattern of a dip and stagnation of real agricultural wage rates was also observed for adult women in most of the states.

Sasank Sarmah (2002) analyses agricultural wage rate in India by addressing three issues: construction of agricultural wage series at the levels of state and *NSS region* from 1970-71 onwards, analyzing the trends in the constructed wage series, and examining the determinants of wage rate at different points of time. In the trend analysis, growth rates of real wages are estimated for different sub-periods from 1970-71 through 1998-99, and as corollaries to this, the issues of structural break and inter-regional variation in wage rates are examined. The determinant analysis uses the standard demand-supply framework to study the wage determinants. The results suggest a deceleration in the growth of real wages in the post-reform period. This is accompanied by a disturbing tendency of widening inter-regional disparities in agricultural wages during the same period. Pallavi Chavan and Rajashree Bedamatta (2006) examined the trends in agricultural wages in India from 1964-65 to 1999-2000, using data from Agricultural Wages in India (AWI) and Rural Labour Enquiry (RLE), and noted that there are certain limitations in the AWI data set. These limitations pertained mainly to the method of collection and presentation of data by AWI, which made it difficult

to construct a comparable time series of agricultural wages. Later the AWI time series of agricultural wages was re-constructed taking care of these earlier limitations. They observed the trends in nominal and agricultural wages in India between 1964-65 and 1999-2000 using data from Agricultural Wages in India (AWI), the serial publication of the government of India.

These series are worked out at the district level for 46 districts chosen from all the 17 states covered by AWI. Then they analysed the data on earnings of agricultural labourers from the periodic surveys of the National Sample Survey Organization (NSSO), and published in the Rural Labour Enquiry (RLE). Data for this sub-section are drawn from seven rounds of RLE from 1963-65 to 1999-2000 for the same 17 states considered for the analysis of the AWI data. Their major findings based on the AWI data are supplemented with data from RLE. Firstly, there was a slowdown in the rate of growth of real daily wages of male and female agricultural labourers in more than half of the districts included in their sample in the 1990s. The slowdown was noted for wage series deflated by both the real prices of cereals as well as the CPIAL. The RLE data also showed a declining rate of growth of real daily earnings of agricultural labourers in the 1990s. However there has been a striking rise in the growth of daily real earnings across all states between 1983 and 1987-88. Later, the between the period of 1987-88 and 1993-94, and further between 1993-94 and 1999-2000, there was a distinct slowdown in the rate of growth of real earnings for both male and female agricultural labourers across a majority of the states. Secondly, there was a rising trend in the variation in real wages across districts in the 1990s. There was also a rise in the inter-state variations in male and female real earnings between 1987-88 and 1993-94 and then, between 1993-94 and 1999-2000, in contrast to the decline in variation that occurred between 1983 and 1987-88. Thirdly, both AWI and RLE data showed that the differences between the average wages of male and female agricultural labourers have widened over the years. The RLE data showed that the level of and growth in earnings of female labourers tended to be lower than those in the earnings of male labourers across most of the most states. This trend was particularly visible after 1987-88. Fourthly, when they compared the daily wages of both male and female agricultural labourers with the statutory minimum wages, the daily wages of male agricultural labourers exceeded the minimum wage level in most of the states. However, the daily wages of female agricultural labourers were below the minimum wage levels in most of the states. This fact, combined with the rising male and female earnings ratio, indicates that gender disparities in wages in the Indian countryside are widening. Ravi

Srivastava and Richa Singh (2006), analyzed at the all-India level, the annual growth rate of total real wages for casual labour in agriculture during the period from 1983 to 1999-2000 (pre and post-reform period). Their results show that there is a slowdown of growth rate of real wages of casual labour from 3.4 per cent per annum in 1983-94 to 3 per cent per annum in 1999-2000. The corresponding slowdown, it would be recalled, was steeper in the case of manual agricultural wages (from 3.3 per cent to 2.7 per cent). At the all India level both male and female labourers registered identical growth rates for the two periods. Across the states also the direction of trends is broadly similar. Nine out of the 15 states registered lower growth rates in the post-reform period. The state of West Bengal, registered the sharpest decline and a negative growth rate of manual casual agricultural wages in the second period. Punjab is the other state, which shows a negative growth rate in real casual wages during the period from 1993-94 to 1999-2000.

Table 2.8
Compound Annual Growth Rate of Agricultural Real Wages for Different States (1980-81 to 2004-05)

Base Year: 1986-87 (in ₹)

State	Phase-I		Phase-II	
	1980-81 to 1989-90		**1990-91 to 2004 -05**	
	I P RW	**CAGR**	**IP RW**	**CAGR**
Andhra Pradesh	8.17	2.36	13.57	0.70
Assam	10.72	2.18	17.52	0.17
Bihar	8.08	2.26	13.29	1.68
Gujarat	11.17	0.93	14.01	1.75
Haryana	17.96	0.96	23.64	0.86
Karnataka	8.91	1.43	11.32	2.43
Kerala	17.63	1.17	22.23	3.48
Madhya Pradesh	6.61	2.44	12.17	0.94
Maharashtra	7.38	2.77	14.38	0.57
Orissa	6.72	2.34	10.84	1.11
Punjab	16.19	1.87	24.04	0.09
Rajasthan	11.63	1.55	16.39	1.29
Tamil Nadu	8.07	1.21	11.04	2.14
Uttar Pradesh	9.57	1.52	14.81	1.05
West Bengal	10.07	4.29	17.75	0.96

Note: IP- Initial Phase-wise
RW -Real Wage,
CAGR- Compound Annual Growth Rate.
Source: Compiled from different issues of Agricultural wages in India 1980-81 to 2004-05.

There was a steady increase in nominal wages during the period from 1980-81 to 2004-2005, for male agricultural labourers. As the nominal wages do not give a correct picture of

agricultural labourer's position, state-wise trends in real wages were examined. The real wages at the state level are arrived after deflating nominal wages using 1986-87 consumer price index. The state-wise indices of real wage[2] data thus obtained is shown in Table- 2.8.

Real wages and growth rate of real wages (CAGR) at the all India level are over the period and later classified into different phases for the analysis purpose. The first phase is from 1980-81 to 1989-90, whereas the second phase corresponds to the period from 1990-91 to 2004-05. It has been observed that in the two phases the real wages have increased while the growth of real wages has decelerated steadily across all the 15 major states. When comparing the real wages of different states in phase-1 period, Haryana (₹ 17.96), Kerala (₹ 17.63) Punjab (₹ 16.19), Gujarat (₹ 11.17) and Rajasthan (₹ 11.63) per cent have showed the highest increase in real wages among 15 the major states studied. During the second phase which is 15 years after the initial phase, the real wages have shown a double digit rise across all the 15 major states. The highest increase in real wages was observed in the states of Punjab (₹ 24.04), Haryana (₹ 23.64), Kerala (₹ 22.23), Assam (₹ 17.52) and Rajasthan (₹ 16.39).

When we compare the rate of growth in both the phases, out of 15 major states four states shows positive growth rate. When we compare to the period of 1980-1989 to 1990-2004 the rate of growth has decelerated. Those states are West Bengal, Maharashtra, Assam, and Gujarat.

Interestingly, it is observed that Punjab and Haryana being agriculturally richer states, have higher agricultural wages as the demand for labour is high in these regions. In Kerala and Rajasthan wages are high due to the presence of strong agricultural labour unions who have fixed wages which are followed in these states. In the state of Gujarat, which is industrially richer state, supply of labour is very less as more people are concentrated in industrial employment and hence there is a scarcity of agriculture labour which has necessitated higher wages for agricultural labourers.

2.3.2 Employment and Un-employment

In employment perspective, Indian agriculture continues to occupy a dominant position as the single largest provider of employment. As one of the World's largest agrarian

[2] Real Wage = Nominal wages / Consumer Price Index for Agricultural Labourers CPIAL (1986-87 Prices) * 100.

economies, the agriculture sector (including allied activities) in India accounted for 15.7 per cent of the GDP (at constant 2004-05 prices), in 2008-09. The cause of concern is that the share of this sector in the GDP has been declining over the years, while its role remains critical as it provides employment to around 52 per cent of the workforce (Economic Survey 2009-10, p.180). Evidently the contribution of agricultural sector is far less than the properties share of the country's population engaged there.

In the rural employment scenario of Indian context wise there are three types of employment, namely self employed, regular/salaried and casual labour. Data for these three types of employment is captured from NSS data only. Some noted studies on employment and unemployment level are Mahendra Dev 1990 and 2007; Sundaram 2001; Chadha and Sahu 2002; Indira Hirway 2002; Bhalla G.S and Peter Hazel 2003; Sharma 2006; Jeemol Unni, 2007; Sundaram 2007; Eswaran Kotawal *et al* 2009; Vinoj Abraham, 2009.

Table 2.9
Composition of Rural Usual Status (Principal+Subsidiary) workers in Indian States 1983/2004-05

(in Rural)

State	Year	Self - Employed	Regular Labour	Casual Labour
	1983	48.10	7.74	43.46
	1993-94	47.50	5.20	47.30
	1999-00	45.80	5.90	48.30
AP	2004-05	47.90	7.20	45.00
	1983	61.80	18.70	19.10
	1993-94	57.80	14.40	27.80
	1999-00	58.20	16.60	25.20
Assam	2004-05	71.00	9.10	19.90
	1983	56.62	4.88	37.89
	1993-94	52.30	4.00	43.70
	1999-00	52.30	3.50	44.20
Bihar	2004-05	60.20	2.70	37.10
	1983	59.75	5.15	34.64
	1993-94	50.20	6.80	43.00
	1999-00	54.20	6.30	39.50
Gujarat	2004-05	53.60	7.10	39.30
	1983	70.23	12.85	19.90
	1993-94	67.70	9.40	22.90
	1999-00	66.40	12.40	21.20
Haryana	2004-05	67.60	13.70	18.70

	1983	55.93	4.65	38.82
	1993-94	55.90	4.80	39.30
	1999-00	50.20	5.30	44.50
Karnataka	2004-05	49.30	5.00	45.70
	1983	50.17	13.16	36.60
	1993-94	45.40	11.50	43.10
	1999-00	42.90	13.70	43.40
Kerala	2004-05	45.40	16.40	38.10
	1983	66.20	6.13	27.28
	1993-94	61.90	4.00	34.10
	1999-00	56.60	3.50	39.90
MP	2004-05	60.50	5.20	34.30
	1983	51.39	8.02	40.50
	1993-94	48.70	7.60	43.70
	1999-00	44.30	7.30	48.40
MH	2004-05	51.10	7.90	40.90
	1983	55.33	7.99	38.32
	1993-94	56.40	4.50	39.10
	1999-00	48.70	4.20	47.10
Orissa	2004-05	58.4	5.60	36.00
	1983	73.82	9.44	16.67
	1993-94	62.70	10.50	26.80
	1999-00	65.50	13.00	21.50
Punjab	2004-05	63.10	12.90	24.00
	1983	84.52	3.95	11.44
	1993-94	79.00	4.60	16.40
	1999-00	79.90	4.90	15.20
Rajasthan	2004-05	77.40	5.40	17.20
	1983	44.24	8.23	47.18
	1993-94	41.60	9.30	49.10
	1999-00	36.70	11.80	51.50
TN	2004-05	42.70	10.40	47.00
	1983	77.78	4.77	17.30
	1993-94	74.30	4.50	21.10
	1999-00	72.70	5.60	21.70
UP	2004-05	76.40	5.40	18.20
	1983	52.34	9.85	37.57
	1993-94	55.70	9.50	34.80
	1999-00	52.20	7.00	40.80
WB	2004-05	55.20	7.50	37.30
	1983	56.81	7.16	36.02
	1993-94	58.10	6.60	35.30
	1999-00	55.80	6.80	37.40
India	2004-05	60.20	7.10	32.80

Source: NSSO reports, 341, 409, 458 and 515 (part I), Employment and Unemployment Situation in India.

During the period 1983 to 2004-05, self-employment has increased compared to the regular or salaried and casual rural employment. However careful analysis of post reform period shows increase in the self-employment compared to salaried employment while casual labour employment has declined. This has also been identified by Chadha G.K. and Sahu PP (2002) who has studied the employment trends in pre-reform and post-reform periods based on *NSS* data and attempted to figure out the challenges and threats that lie ahead for rural workers in India. The empirical evidence calls into question the optimism of pro-reform analysts on the all-round positive impact of economic reform on employment.

State level disaggregated analysis shows increase in the self employed rural persons among majority of the states, while only few states are showing decline in self-employed persons. The cross comparison of pre and post reform period at the all India level explains that self employment has declined during 1993-94, that is the initial years of reforms, both at the all India level and in majority of the 15 states. This implies that rural casualisation of labour has registered an increase during the period of 1993. However, self-employed during the period from 1999-2000 to 2004-05 increased in the state, of Andhra Pradesh, Assam, Bihar, Haryana, Kerala, Madhya Pradesh, Maharashtra, Orissa, Tamil Nadu, Uttar Pradesh and West Bengal, while it declined in Gujarat, Karnataka, Punjab and Rajasthan. Vinoj Abraham's (2009) study explained the declining casualisation and raising in self-employment in the labour market. It is generally argued that self-employment is a superior option for the workers compared to casual wage employment because of lesser degree of vulnerabilities. The casualisation of workforce, which continued throughout the late 1980s and 1990s, seem to have been arrested as reflected in the latest round of NSS. The share of self-employed workers increased, among male and female workers.

2.3.3 Unemployed Households

The unemployed rate has come down over all the three periods mentioned below, which indicates employment is increasing in all the states in general. The below table gives a overall view regarding the inter-State differentials in percentage of unemployed rural persons, as obtained from the NSS 50^{th}, 55^{th} and 61^{st} round land holding surveys respectively.

Table 2.10
The Proportion of Unemployed Rural Persons in India, 1993-94 to 2004-05.

State	Proportion of Households			Share of Households		
	1993-94	1999-00	2004-05	1993-1999	1999-2004	1993-2004
Andhra Pradesh	5.3	6.8	5.5	1.5	-1.3	-0.2
Assam	24.7	15.2	12.7	-9.5	-2.5	12
Bihar	8.3	6.5	4	-1.8	-2.5	4.3
Gujarat	4.4	1.1	1.9	-3.3	0.8	2.5
Haryana	6.2	1.1	6.2	-5.1	5.1	0
Karnataka	6.2	4.5	5	-1.7	0.5	1.2
Kerala	21.3	19.8	22.2	-1.5	2.4	-0.9
Madhya Pradesh	5.5	3.9	2.1	-1.6	-1.8	3.4
Maharashtra	4.7	6.1	3.1	1.4	-3	1.6
Orissa	14.8	15.7	17.1	0.9	1.4	-2.3
Punjab	4.6	4.9	10	0.3	5.1	-5.4
Rajasthan	4.1	2	4.6	-2.1	2.6	-0.5
Tamil Nadu	9.7	10.6	6.6	0.9	-4	3.1
Uttar Pradesh	3.1	2.8	1.3	-0.3	-1.5	1.8
West Bengal	9.4	11.1	9.3	1.7	-1.8	0.1
India	7.5	6.7	6.5	-0.8	-0.2	1

Source: NSSO, Reports 409, 458 and 515, Employment and Unemployment Situation in India, Part I.

The last three surveys have noted an increased unemployed rate in Punjab, Orissa, Rajasthan and Andhra Pradesh during the period from 1993-94 to 2004-05. In all India level the unemployed rate has come down by one percent during the 1993-94 to 2004-05. The unemployment rate has come down in the states of Assam, Gujarat, Karnataka, Madhya Pradesh, Maharashtra, Tamil Nadu, Uttar Pradesh, West Bengal and Bihar between the 50^{th} round and 55^{th} rounds. However, it is interesting to note that while open unemployment rates have remained at low levels, the degree of underemployment has shot up to one of the highest in the period since 1983 (Vinoj Abrham 2009).

2.4 Factors Influencing Real Wages in Labour Market: A Panel Regression Analysis

The theoretical literature on wage determination in developing countries depends on the standard demand and supply framework (Sasank Sarmah 2002). Ravi Srivastava and Richa Singh (2005) also emphasise that in the Indian context the most common approach for wage determination has been the neoclassical demand and supply framework.

In this context, there are already a large number of studies explaining variations in wages across region and states wise in India. The majority of these studies is cross sectional studies and uses a number of variables affecting the demand or supply conditions in the rural labour market. The demand side variables are size of holding, extent of irrigation, cropping pattern, farm productivity, total average area under crops, agricultural output yields, cropping intensity, agricultural output yields, ecological condition obtaining in the farm degree of farm meachnisation and working expenditure and investment. Supply variable like agricultural labour force, surplus labour, alternative employment opportunities, land concentration ratio etc.

Productivity has been considered a dominant factor on the demand side; while on the supply side, size of agricultural labour force and proportion of non-agricultural labour force have been used to explain determination of agricultural wages. Lal Deepak (1976) in terms of a cross sectional analysis between 1956-57 and 1970-71 explains demand and supply factors using NSS data, that those variables are per cent increase in cereal output representing a demand variable and per cent increase in male agricultural labour force a supply variable. While Jose (1988) used only agricultural product per worker as determinants of agricultural wages. During the nineties diversification of rural labour force was identified as an important factor in explaining agricultural wages. Prudhvikar Reddy's (1998) study explains the relationship between wage and gross returns is analysed. Money wage per day is taken as the dependent variable and gross returns per hectare as independent variable. The results show significant positive coefficients with respect to output price in the state of Andhra Pradesh as well as at the zonal level implying the money wages are positively associated with output prices.

Radha Krishna, *et al*., 1991; Sheila Bhalla, 1997; and Parthasarathy, 1996; for example, used share of non-agricultural workers along with labour productivity as explanatory variables in their models of wage determination. Landlessness and land-labour ratio have also been used as explanatory variables by some economists such as, Parthasarathy (1996), and Sharma (2001). Another study by Sarmah (2002) uses the variables such as occupational diversification, urbanization, land productivity, irrigation rate, male literacy and child mortality. Mostly variables like productivity per worker, output or per hectare output as additional variables, along with irrigation and rural occupational diversification which have emerged as key determinants of wages positively. He has introduced two variables like male

literacy and life expectancy related human development indices which have also been found to play a positive role in wage determination.

Narayanamoorthy A and Deshapande (2003) explains about the dependent variable real wages based on four variables independent variables like irrigated area per agricultural labour households (IAPL), gross cropped area per agricultural labour households (GCAPL), Cropping Intensity (CI) and production of food grain per agricultural labour households (PFGPL). They have taken 17 major states to study the real wages of both male and female labourers. They used gross cropped area divided by labour households as supply side variable instead of percentage of agricultural labour households, while many studies have used percentage of agricultural labour households or percentage of agricultural labour to total population as supply side variable to explain the variation in wage rates. They found that irrigated area per agricultural labour households has a positive significance, and hence irrigation is considered as an engine of growth.

Sharma; (2005) study can found used the variables demand and supply variables influencing the wage determination demand side proportion of workers employed in the rural non-farm sector (NFARM), per agricultural worker net state domestic product (PWNSDP). These two variables are influencing positively for agricultural wages. On other hand the proportion of agricultural labour households (ALH) to rural households captures the supply side of the market and normally lowers the wage earnings.

Ravi Srivastava and Richa Singh (2005) have taken five variables like (1) Agricultural productivity: The net state domestic product in agriculture per agricultural worker or per hectare. (2) Agricultural Diversification: percentage area under non-food grains; (3) Non-farm Diversification: Percentage share of rural non-farm workers in total rural workforce; or Percentage share of total non-farm workers in total (urban rural) workforce and (4) Capital Investment: Percentage of net area irrigated (IRRI). Although they focused mainly on variables which may change under the impact of reforms, thereby affecting the demand for labour and the growth rate of wages, along with one supply variable, viz., (5) percentage of agricultural labourers to total rural workers. We have also followed the pattern of demand and supply side variables of Ravi Srivastava and Richa Singh for our analysis. Their results have found out that growth of agricultural and non-agricultural wages have decelerated from pre-reform to post-reform period.

To analyze the drivers of real wages, the present study has have selected 14 major states, during the time periods of 1981-82, 1991-92 and 2002-03. In our regression analysis, we have pooled together our cross-section data across different points of time and have used panel data analysis to obtain the results. Results have been computed using E-Views- 6 econometric package.

There are large variations in the real wages for male labourers across the states. These variations could be attributed to different factors operating on both the demand and supply side factors of the labour market. While most studies used common variables to determine the agricultural wages (see Table 2.11), the present study has used extra variables like (tenancy) tenant households to determine the agricultural wages. In present analysis, we have included variables that surrogate both the demand and supply side of agricultural wages.

Table 2.11

Variables Used in Determination of Agricultural Wages

Variable Name	**About Variable**	**Source**
RW	Nominal Wages series 1981 to 2001 and deflated at 1986-87 prices	1. Nominal Wages from Agricultural Wages in India a). CPIAL prices from Agricultural Situation in India
CI	Crop Intensity: Gross Cropped Area/ Net Sown Area	2. Gross Cropped Area: Centre for Monitoring Indian Economy (CMIE)1981-82, 1991-92 and 2001-02 a). Net Sown Area: do
SHGCA	Share Gross Cropped Area: Gross Cropped Are/Agricultural Labour Households	4. Gross Cropped Area: do a). *Census of India* 1981, 1991 and 2001. To arrive from total workers as Agricultural Labour Households
MLLOP	Medium and Large Farmers	5. Medium and large farmers from NSSO: There are 5 classifications of land holdings like marginal, small, semi-medium, medium and large farmers. *Source:* NSSO: 1981-82, 1991-92 and 2002-03.
RNFS	Rural Non-farm Activities	Rural non-farm household from NSSO: 1983, 1993-94 and 1999-2000.
SMLOP	Small and Marginal Operated Farmers	6. Small and marginal farmers from NSSO: There are 5 classification land holdings like marginal, small, semi-medium, medium and large farmers. *Source:* NSSO1981-82, 1991-92 and 2002-03.
IRRI	Irrigation Rate	7. Gross Cropped Area: Centre for Monitoring Indian Economy (CMIE) 1981-82, 1991-92 and 2001-02.
TH	Tenant Households	*Source:* NSSO1981-82, 1991-92 and 2002-03. Report No 492.

The demand side variables include crop intensity (CI), medium and large farmers operated area (MLLOP), irrigation rate (IRRI), while the supply side variables include gross cropped area/ agricultural labour households (SHGCA), tenant households (TH) and RNFS rural non-farm sector, small and marginal land operated farmers area (SMLOP) (see Table 2.11).

The effects of these variables on the real wages (RW) for agricultural labourers are discussed below. By combining time series with cross section data, we arrive at panel data. Panel data analysis gives more informative data, has more variability, has less co-linearity among variables, more degrees of freedom and has more efficiency. The technique of panel data analysis can take into account the heterogeneity among states by allowing for individual-specific variables. Panel data analysis is also more suited to studying the dynamics of change. Finally, panel data analysis is more suited to detect and measure effects that simply cannot be observed in pure time series data. Thus, panel data analysis can enrich empirical analysis in ways that may not be possible if we use only cross section data.

Our general functional form is as follows:

$$RW_{it} = \alpha_i + \beta X_{it} + \varepsilon_{it} \qquad (1)$$

Where

RW is real wage/daily earnings at 86-87 price level
α is the intercept
X is the array of independent variable
β is the array of coefficients
i=1, 2, 3, 4, ……14, for the 14 major states
and t=1981-82, 1991-92 and 2002-03 in the case of *AWI* data

We assume that X's are non-stochastic and that the error term is normally distribution with zero means and constant variance viz. $\varepsilon \sim N(0, \delta^2)$.

However, as long as there is no group wise or other heteroskedasticy effects on the dependent variable, OLS may be used for fixed effects model estimation as well. For OLS to be properly applied, the errors have to be independent and homoskedastic. However, as noted and confirmed in the previous studies that the problem of heteroscedasticity is very common in cross section data set, for the most part; simple panel OLS models with group wise heteroskedasticity cannot be efficiently estimated with OLS. So we went for EGLS analysis and we found that the result is efficient and has improved from the simple OLS result.

Fixed Effect Model

Above model i.e. equation (1) assumes that intercept and slope coefficients are the same for all the states and across time, which is a restrictive assumption. We may therefore allow the intercept term for each state to vary, while keeping the slope coefficients the same. Thus we estimate the Fixed Effects Model (FEM), which allow the intercept term for each state to vary and keep the slope coefficients same for each state. The empirical result is shown in the table 2.12

Random Effect Model

The fixed effect model keeps the intercept to vary only over the cross-section. However, though the random effects model (REM) also assumes that the slopes coefficients are constant for all cross-section units, the intercept is a random variable.

Table 2.12
Fixed Effect Model
Results for the Model with Cross Section Fixed Effect:

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-40.99361	4.422021	-9.270335	0.000*
SHGCA	-0.067381	0.056813	-1.18603	0.236
TH	-0.492253	0.036539	-13.47183	0.000*
RNFS	0.603267	0.030751	19.61789	0.000*
SMLOP	0.36942	0.053931	6.849829	0.000*
CI	12.19554	1.322642	9.220591	0.000*
IRRI	0.055905	0.010858	5.148831	0.000*
MLLOP	0.441323	0.057164	7.720254	0.000*

Notes: *, ** imply significant at 1 and 5 per cent levels, respectively.
R^2 = 0.7629, Adjust R^2 = 0.754, Durbin -Watson stat =1.533, F-Stat = 91.249.

Hausman Test

The Huasman test is formulated to assist in making a choice between the fixed effect and random effects approaches. In this test Hausman assumed that there are two estimators $\hat{\beta}_0$ and $\hat{\beta}_1$ of the vector β and he added two hypothesis-testing procedures. Under H_0, both estimators are consistent but $\hat{\beta}_0$ is inefficient, and under H_1, $\hat{\beta}_0$ is consistent and efficient, but $\hat{\beta}_1$ is inconsistent.

In order to decide between FEM and REM model, Hausman test has been employed. If the value of the statistics is large, then the difference between the estimates is significant, so we reject the null hypothesis that the random effects model is consistent and we use the fixed effects estimators. In contrast, a small value of the Hausman statistics implies that the random effects estimator is more appropriate.

Table 2.13
Hausman Test Results

Hausman Test		
Null Hypothesis	Chi-Sq. d.f	Chi-Sq. Statistic
No correlation between the observed person specific random effect and the regressors.	7	17.6174 (0.0138)

The Hausman test result is reported in table 2.13. The result indicates that the null hypothesis of no correlation between the observed person specific random effect and the regressors has been significantly rejected. So the results suggest that fixed effect model is a consistent and efficient one. Therefore we report the fixed effect model in the table 2.12.

All the seven variables are chosen for the panel regression analysis, to find out how change in one variable affects the real wages. Here share of gross cropped area (SHGCA) is taken as supply variable, which means that the share of gross cropped area is not affecting the real wages. It has been observed from that the tenant households (TH) who constitute the supply side of agricultural households are declining and hence the contributing to the impact the agricultural wages negatively significant. As a result tenant households are decrease real wages increases. The rural non-farm sector shows t-statistic significance to the level of 1 per cent, which means due to the diversification of agricultural labour households towards rural non-farm sector there has been an increase in real wages. The small and marginal farmers shows significance to the level of 1 per cent, which implies that when the small and marginal farmers increases it results in the decline of supply of labour households which in turn contributes to rise in real wages. From the demand side variables like crop intensity (CI) irrigation (IRRI), medium and large farmers operated area (MLLOP) have all shown positively significant results, which implies that these variables are influence the agricultural wages.

2.5. Conclusion

This chapter explains about the structure and performance of rural labour market at the all India and state levels. The structure of the rural economy has witnessed changes. There is a fall in the proportion of farm sector which dominantly attributed to a fall in the share of cultivators. The supply side in the labour market, which constitutes the pure labour-supplying households as well as partial labour-supplying households, witnesses changes. The share of agricultural labour households are marginally increasing while partial labour-supplying households are witnessing a major increase. In case of demand for labour the share of households and land owned by medium and large farmers is decreasing over time. In addition, the choices open to households in the farm sector is also changing it is increasing. According to NSSO, tenancy households share has declined over a period. While in the case of rural non-farm sector, their share has increased at the all India level. Among the northern states like Gujarat, Haryana and Rajasthan those decreasing trend during the period of 1993 to 2004 while in the Southern states like Karnataka, Maharashtra and Tamil Nadu share of non-farm sector has declined during the same period.

The performance of rural labour market focused on wages rates, the real wages are increased in all the states over the period of 1980-81 to 2004-05. During the pre-reform period growth rate of real wage increased compared with post-reform period. However from the employment point of view, during 1983 to 1999-2000 self-employment, regular-salaried and casual labourers increased, while the salaried employees have declined during the period of 2004-05 at all the states and at the all India level. Agricultural labour households have choices: they may go for tenancy market or else rural non-farm sector.

An analysis of the determinants of real wages shows some interesting trends. Real wages are determined by the structural factors as well as choices open to the households in the farm sector. As the share of large farmers increases (pure demanders of labourers) real wages also increases. As the share of small and marginal farmers increases one also witnesses an increase in wages. The choices open to farm sector has diversified results. As lease households increases there is a decline in real wages while rural non-farm sector increases there is an increase in wages.

Appendix: 2.1

Alternative Sources for Measurement of Workers:

Agricultural labourer household and cultivators are generally referred as agricultural population or farm sector[3]. For estimating agricultural population we are using two sources, namely (i) Census (ii) NSSO. Rural Labour Enquiry reports taken source of agricultural labour households which also deals with exclusively on rural labour and agricultural labour households.

Concepts of Census Agricultural Population:

In the 1981 census instead of the common definition of the agricultural population a trichotomy defining them as main workers, marginal workers and non-workers was adopted. For main workers the time criterion of engagement in work for a major part of the year of at least 183 days was adopted, while those who worked for sometime during the last year but not in a major part were treated as marginal workers. Those who had never worked during the last year were non-workers. The 1991 census also followed the same concepts and methodology as in the 1981 census for the benefit of comparison. And the 2001 census classifies main workers, marginal workers and non-workers. Main and marginal workers are classified into Cultivators, Agricultural labourers, Household Industry and other workers. As per *Census* (2001) definition "cultivator if he or she is engaged in cultivation of land owned or held from Government or held from private persons or institutions for payment in money, kind or share. Cultivation includes effective supervision or direction in cultivation. A person who has given out her/his land to another person or persons or institution(s) for cultivation, for money, kind or share of crop and who does not even supervise or direct cultivation of land, is not treated as cultivator. Similarly, a person working on another person's land for wages in cash or kind or a combination of both (agricultural labourer) is not treated as cultivator". And supply side who are working in farm call as agricultural labour households, as per *Census* (2001) "A person who works on another person's land for wages in money or kind or share is regarded as an agricultural labourer. He or she has no risk in the cultivation, but merely works on another person's land for wages. An agricultural labourer has no right of lease or contract on land on which she/he works".

[3] Government of India (2001): *Census of India*, General Population, Series -1, Part II-B Primary Census Abstract, Office of the Registrar General Ministry of Home Affairs, New Delhi.

Rural Labour Enquiry Definition of Agricultural labour Household

The definition of agricultural/rural labour households is based on the mixed criterion of income and employment. Presently a household is classified as rural labour household if its major source of income during the last 365 days preceding the survey was more from wage paid for manual labour agricultural/non-agricultural than either from paid non-manual employment or self-employment. So far RLE reports for the years 1983, 1987-88, 1993-94 and 1999-2000 have been undertaken. *Rural Labour Household* defined a household as rural labour household if its major source of income during the last 365 days preceding the survey was more from wage paid manual labour (agricultural and / or non-agricultural) than either from paid non-manual employment or from self-employment. While the *Agricultural Labour Households,* which are initially classified as ' Rural Labour Households', are defined as those deriving 50 percent or more of their total income from wage paid manual labour in agricultural activities.

NSSO Definition on Agricultural Labour

According to NSSO definition of agricultural labour, a person was considered as engaged as agricultural labour, if he/she followed one or more of the following agricultural occupations in the capacity of a wage paid manual labour whether paid in cash or kind or both: (i) farming (ii) daily farming (iii) production of any horticultural commodity (iv) raising of livestock, bees or poultry (v) any practice performed on a farm as incidental to or in conjunction with farm operations (including forestry and timbering) and the preparation for market and delivery to storage or to market or to carriage for transportation to market of farm produce. Working in fisheries was excluded from agricultural labour. Further, carriage for transportation referred only to the first stage of transport from farm to the first place of disposal.

The Linear Panel

A panel data set is formulated by a sample that contains *N* cross-sectional units (ie., States) that are observed at different T time periods. Consider for example a simple linear model with one explanatory variable as given by

$$Y_{it} = \alpha + \beta X_{it} + u_{it}$$

Where the variable Y and X have both i and t subscripts for i =1, 2, …..N sections and t = 1,2,…..T periods. If our sample set consists of a constant T for all cross-sectional units, or in other words if we obtain a full nest of data both across states and cross time, then the data set is called balanced. Otherwise when observations are missing for the time periods of some of the cross-sectional units then the panel is called *unbalanced*.

Different methods of estimation:

In general, simple liner panel data models can be estimated using three different methods: (a) Panel EGLS with a common constant as in equation (1) (b) allowing for fixed effects, and (c) allowing random effects.

Panel EGLS

A constant coefficients model with residual homogeneity and normality can be estimated with ordinary least squares estimation (OLS). As long as there is no group-wise or other heteroskedastic effects on the dependent variable, OLS may be used for fixed effects model estimation as well. For OLS to be properly applied, the errors have to be independent and homoskedastic. Those conditions are so rare that it is often unrealistic to expect that OLS will suffice for such models.

Heteroskedastic models are usually fitted with estimated or feasible generalized least squares (EGLS or FGLS). Heteroskedasticity can be assessed with a White or a Breusch-Pagan test. For the most part, fixed effects models with group wise heteroskedasticity cannot be efficiently estimated with OLS. If the sample size is large enough and autocorrelation plagues the errors, FGLS can be used.

Fixed Effect Model

In the fixed effects method the constant is treated as group (section) specific. This means that the model allows for different constants for each group (section). The fixed effects estimator is also known as the least-squares dummy variables (LSDV) estimator because in order to allow for different constants for each group, it includes a dummy variable for each group. To understand this better consider the following model:

$$Y_{it} = \alpha_i + \beta_1 X_{1it} + \beta_2 X_{2it} \ldots + \beta_k X_{Xit} + u_{it}$$

Where the variable Y and X have both i and t subscripts for i —1, 2, …..N sections and t — 1,2,…..T periods.

Random Effect Model

An alternative method of estimating a model is the random effects model. The difference between the fixed and the random effects method is that the latter handles the constants for each section nor as fixed, but as random parameters. Hence the availability of the constant for each section comes from the fact that:

$$\alpha_i = \alpha + v_i$$

Where v_i is a zero mean standard random variable, the random effects model therefore takes the following form:

$$Y_{it} = (\alpha + v_i) + \beta_1 X_{1it} + \beta_2 X_{2it} \ldots + \beta_k X_{Xit} + u_{it} \ldots (1)$$
$$Y_{it} = \alpha + \beta_1 X_{1it} + \beta_2 X_{2it} \ldots + \beta_k X_{Xit} + (v_i + u_{it}) \ldots (2)$$

Where the variable *Y* and *X* have both *i* and *t* subscripts for *i* =1, 2, …..*N* sections and *t* = 1,2,…..T periods.

CHAPTER - III

CHAPTER -III

AGRO-ECONOMIC BACKGROUND OF WEST GODAVARI DISTRICT AND THE SURVEYED VILLAGES

3.0 Introduction

The performance of the labour market depends on the structure of the labour market as well as the choices open to the households in the rural areas. In addition to the above, the performance of individuals in labour market depends on historical conditions like the nature of land settlement in the areas, public interventions in the areas like public provision of irrigation, introduction of new crops etc. One of the limitations of the analysis in the earlier chapter was the absence of information regarding individual decision making. In addition, the nature of the labour market, at the state level was assumed, to be homogeneous. But the labour market could itself be non-homogeneous within the state. The context specific variables were not captured at the state level. Thus, the present chapter makes an attempt to study and present the economic context of West Godavari district and two mandals where the detailed village survey was conducted. This chapter presents the economic profile of West Godavari district in which the agents in the farm sector make choices.

This chapter has been divided into five sections. The first section focuses on the historical perspective of changes in West Godavari district in the context of pre and post anicut periods. The second section emphasises on the economic background of West Godavari and contains details with reference to land utilisation, farm and non-farm sectors and performance of rural labour market in terms of wages and work participation. Section three gives a brief description of the mandals from which the study villages are selected, while the fourth section analyses the profile of the villages. The final section contains concluding remarks.

3.1 The Historical Context: The Godavari District

The state of Andhra Pradesh is generally identified as a middle-income state with a prosperous agricultural sector. Almost 72.92 per cent of the people live in rural areas. With bountiful natural resources, endowed with fertile land, water and conducive agro-climatic conditions, it is an agriculturally prosperous state with about 14.37 million hectors of land under cultivation. Andhra Pradesh is predominantly a rice producing state in India. It is also a leading state in the production of cash crops, producing some of the finest varieties of

mangoes, grapes, guavas, sapotas, papayas and bananas. River basins are important sources of irrigation for agriculture in the state. About 75 per cent of the area is covered by the river basins of the Godavari, Krishna and Pennar and their tributaries. There are also 17 smaller rivers like the Sarada, Nagavali and Musi, as well as several streams. Godavari and Krishna are the two major perennial rivers and with their extensive canal system provide assured irrigation (Census of India 2001).

Andhra Pradesh is predominantly divided into three non-integrated regions namely Telengana, Rayalaseema and Costal Andhra, (Rao and Mahendra Dev 2003, Subramanyam 2003 p.518). According to the agricultural sector, the South Costal Andhra, which consists of the Krishna and Godavari delta comprising of East Godavari, West Godavari, Krishna, Guntur, Prakasam and Nellore districts, occupies the top place with high index of output per hectare. Based on the level of income East and West Godavari districts, the Krishna and Guntur districts are classified as the delta zone with the highest income. The Godavari districts are collectively identified as the *granary* of the state. These districts witnessed a change in the property right regime by the introduction of *ryotwari* settlements in colonial period and interventions to reduce nature-based uncertainty (the provision of canal water for irrigation) also in colonial period, productivity- enhancing changes (the Green Revolution) as well as active intervention by the industry to change the cropping pattern (as in the case of ITC, the sugar industry, etc.).

3.1.1 Pre-anicut (Irrigation Dam) Period

The relatively prosperous present day districts of West Godavari, East Godavari, Krishna, Guntur and Prakasam were economically backward as any other regions of Andhra Pradesh prior to the construction of anicuts (dams) across the Godavari and Krishna rivers during the early fifties of the nineteenth century. Dam irrigation did bring about a significant change in the fortunes of the peasants. However, the agricultural stagnation of pre-anicut coastal Andhra was no small in measure due to the disincentives inherent in the exploitative agrarian system. The agrarian economy of Coastal Andhra was in a state of stagnation followed by the decay in the first half of the 19th century. The introduction of permanent Zamindari Settlement during 1802-04 had strengthened the forces of exploitation in agriculture. Unfavourable seasons, depressions in agricultural prices, abolition of "Government Factories" in 1829 and the consequent outmigration of weavers, famines and the decline in cropped area was not only caused a sharp fall in land revenue but also accentuated the

miseries of the agricultural community. Exports of piece goods, for which the region was famous in earlier times, fell at an alarming rate. The frequent occurrence of droughts and famines also slowed down the rate of growth of population, resulting in forced cultivation and use of torture in the collecting of land revenue. Irrigation was neglected and transport by road and water was in a miserable state of affairs. In short, cultivation became an unprofitable proposition during the first half of the 19th century (G N Rao 1985).

The Godavari (Rajahmundry) 1860 - 1890[1]:

The present West Godavari along with East Godavari and a portion of Visakhapatnam district was generally referred as Godavari (Rajahmundry) in colonial period. The district was formed in 1859-60 (G N Rao 1981). It consisted of 14 taluks viz. Peddapuram, Rajamundry, Ramachandrapuram, Amalapuram, Narsapuram, Bhimavaram, Tanuku, Ellore, Yernagudem, Polavaram, Chodavaram, Bhadrachalam and Cocanada (Kakinada).

Northern Circars in general and the Rajahmundry district in particular witnessed falling revenues and miserable economic conditions of the inhabitants during pre-anicut period. Bad seasons, Zamindari misrule, severe burden of taxation on the cultivators, heavy competition from cheap rice-imports from Arracan (Burma), depression in agricultural prices, decay of handloom industry, devastating famines, declines in population, and utter neglect of irrigation and transport were the major features of the period (G N Rao 1981).

The anicut (irrigation dam) across the river Godavari was constructed during the period 1847-1852 at Dhawaleswaram in the old Rajahmundry district (G N Rao 1981). A network of irrigation channels was built in the three delta sections viz. the Eastern, Central and Western sections. The transition in the subsistence agriculture of the district is traced from 1860 onwards.

3.1.2 The Post-anicut (Irrigation Dam) Period:

The construction of the Godavari anicut was completed by 1852 and hence, with the provision of irrigation cultivation gradually started yielding results. During the same period agrarian expansion or the area of cultivation and the cropping pattern differentiation increased. And by the late eighties and nineties the emerging marketable surpluses for paddy, improved transport facilities and the rise in grain prices generated a market consciousness among the forward looking section of the agricultural community.

[1] This section is pre-dominantly based on G.N. Rao 1981.

There are three types of land categories viz., *Zamandari*, *Ryotwari* (1859-60) and *Inamdari*. Cultivators during pre-anicut period have faced tax growth and water logging that acted as constraints to agricultural growth. Due to the burden of taxes non cultivating households were forced to take up cultivation and in that context wages have increased double for labourers. G N Rao quoted, Raghava Iyengar in 1985 as he said, "contention that many of the landless labourers acquired lands and became *pattadars* appears to be a piece of exaggeration" p.A-67. Even though few who have been attached labourers, are fortunate enough to purchase the land. However, landless labourers acquiring lands and becoming pattadars could not have been a general feature of the entire labouring class (G N Rao 1985). After the late seventies, the general decline in rural wages with simultaneous increase in the area under cultivation, especially, paddy strikes one as apparently illogical. For with an increase in the area brought under plough, the demand for labour should also have been on the increase, but the contrary has happened here. An increasing demand for labour and a concurrent fall in wages do not fit in, unless there was a spurt in the growth of native agricultural labour, or large scale immigration into the area from outside the district. The immigration from the neighbouring districts of Nellore, Ganjam, Vishakapatnam etc was a powerful factor in weakening the bargaining power of the labourers.

The period between 1876 to1878 witnessed a famine in Godavari and Coastal Andhra regions. "The famine of 1876 and 1877 brought in considerable number of poor people from the neighbouring districts who found themselves as field labourers, coolies, palanquin bearers and domestic servants who rendered labour cheap most of them remained here permanently" (G N Rao 1985 p.A-68). As the attached labourers were by and large paid in kind, they were probably protected from the fluctuations in grain prices. But even this system of kind payment did not continue for long. As the economy was increasingly getting monetised, payments in kind gave way to cash payments. Hence, even if one were to concede that (money) wages had been doubled during the period, one finds that the labourer was no better off since prices of food grains had increased almost three fold during this period.

3.2 Economic Background of West Godavari District

The district of West Godavari was named so after being carved out of the old Godavari district in which the Western delta of the river Godavari lies. This West Godavari District was formed in 1925 with Eluru as its headquarters and all the district offices and regional

offices were setup in Eluru Town. It lies between 16^0 15'-17^0 30' northern latitudes and 80^0 55' and 81^0 55' eastern longitudes.

Map 3.1: West Godavari District of Andhra Pradesh

It is surrounded by Khammam district on the North, Krishna district and the Bay of Bengal on the South and on the East by river Godavari and Krishna district on the West. The District occupies an area of 7742 sq.km with the population density of 454 per sq.km.

According to 1991 census total population of the district is 35.18 lakhs, of which 27.90 lakhs are rural and 7.28 lakhs are urban. In the district, the total forest area is 81,200 hectares, forming 10.49 per cent of the total geographical area of the district. The area covered by paddy is 82.80 per cent, tobacco: 4.86 per cent, Sugarcane 4.73 per cent and Chillies 1.29 per cent. Above 70 per cent of the workers are engaged in agriculture and allied activities. Nearly 37 per cent of the population living in rural areas depend upon agriculture for its livelihood. In about 68 per cent of the irrigated area, the cultivation is mainly under canals. Tube wells and Dug wells come next in the order of source of irrigation. The normal annual rainfall of the district is 1076.2 mm. Most of the rainfall is received during the south-west monsoon. West Godavari district is known as "the granary of Andhra Pradesh" (Economic Census of West Godavari, 2005).

The district has 15,84,065 literates forming 53.38 per cent of the population of the district, excluding 0-6 age group. Separately for urban and rural areas, the literacy rates work out to 67.61 and 49.55 per cent respectively. Again within the urban areas, the male and female literacy rates separately work out to 74.72 per cent and 60.55 per cent respectively against the corresponding figures of 55.75 per cent and 43.30 per cent in rural areas. According to 2001 census the total population is 38.03 lakhs of which 30.52 lakhs is rural and 7.50 lakhs urban and the density of population is 494 per sq.km. The total literacy rate is 73.5 per cent in which male is 78 percent and female is 69 per cent. According to the provision of 2011 population census for Andhra Pradesh the proportion of the male is 50.20 per cent and female is 49.79 per cent and whereas in West Godavari district male are 49.89 per cent and females are 50.10 per cent. In the case of density of population per square km, it has increased significantly to 308 for Andhra Pradesh and to 508 for West Godavari as well (Census 2011).

A small comparison to other “developed” districts of Coastal Andhra region shows that the West Godavari district has nearly 60.20 per cent of land under cultivation while East Godavari has 38.70 per cent and Krishna district has 56.09 per cent cultivable land during the 2004-05. However, during 2008-09 the land under cultivation has increased in three

districts compared to 2004-05; West Godavari has reached to 61.36 per cent East Godavari to 40.01 per cent and Krishna to 59.03 per cent respectively.

Table 3.1

Agricultural Profile of Three Districts of Andhra Pradesh in 2001

Description	West Godavari	East Godavari	Krishna
Total population (in lakhs)	**38,03,517 (100)**	**49,01,420 (100)**	**41,87,841 (100)**
Male	19,10,038 (50.22)	24,59,640 (50.18)	21,17,401 (50.56)
Female	18,93,479 (49.78)	24,41,780 (49.82)	20,70,440 (49.44)
Total workers	**16,78,335 (100)**	**19,40,214 (100)**	**18,41,597 (100)**
Cultivators	2,09,055 (12.46)	2,18,947 (11.28)	2,09,485 (11.38)
Agricultural Labourers	9,51,723 (56.71)	9,85,980 (50.82)	8,77,277 (47.64)
Net Sown Area (including fish & prawn culture (2004-05)	60.20	38.70	56.09
Net Sown Area (including fish & prawn culture (2008-09)	61.36	40.01	59.43

Note: Figures in brackets are percentages to the total.
Source: Statistical Abstract of Andhra Pradesh Hyderabad, Directorate of Economics & Statistics, 2006, p.48 and 2009 pp.49-54.

Interestingly, in the three districts, cultivators constitute less than 12 per cent individual households while agriculture labourers households form nearly 56 per cent individuals. Considering the distribution of cultivators and agricultural labourers over districts, West Godavari has the higher share of cultivators and also agricultural labourers (see Table 3.1).

3.2.1 Land and Land Use Pattern in the West Godavari District

Over the three periods (2004-07) the land use pattern was relatively stable with marginal changes in shares of land use. The net sown area constitute around 55 per cent of the total land with a marginal increase to 56.62 per cent in 2005-06 and a fall back to 55.80 per cent in 2006-07. The increase in net sown area during 2005-06 was compensated by decrease in current fallows in the corresponding year. The category of ‘other fallow’ also shows a constant marginal decline in that area during the period (see Table 3.2).

Table 3.2
Land Use Pattern of West Godavari District during 2004-05 to 2006-07

(Area in Acres)

Sl. No.	Category	2004-05	2005-06	2006-07
1	Geographical Area	1926246 (100)	1926246 (100)	1913048 (100)
2	Forest	200632.8 (10.42)	200632.8 (10.42)	200561.2 (10.48)
3	Barren & Un culturalble Land	101647.1 (5.28)	101647.1 (5.28)	101627.3 (5.28)
4	Land put to Non-Agricultural uses	271120.6 (14.08)	271629.6 (14.10)	271629.6 (14.20)
5	Permanent Pastures & other Grazing Lands	34514.93 (1.79)	33499.35 (1.74)	34621.18 (1.81)
6	Misc.trees crops and groves not included in net area sown	20111.47 (1.04)	18450.96 (0.96)	19842.13 (1.04)
7	Culturalable Waste	49714.05 (2.48)	47455.56 (2.46)	48196.86 (2.52)
8	Other fallow Lands	25540.26 (1.33)	22211.82 (1.15)	14055.05 (0.73)
9	Current fallows	63603.54 (3.30)	55350.4 (2.87)	73527.08 (3.84)
10	Fish Tank	92052.16 (4.78)	84787.42 (4.40)	81530.65 (4.26)
11	Net Area Sown	1067309 (55.41)	1090581 (56.62)	1067457 (55.80)

Note: Figures in brackets are percentages to the total.
Source: Hand book of Statistics 2006-07, of West Godavari district, 2008.

3.2.2 Land Use and Irrigation Facilities and Agricultural Machinery Implements

The district has the dominance of cultivation of Paddy crop. It forms around 76 per cent of the total cropped area while the rest of the crops form less the 24 per cent of land.

Table 3.3
Cropping Pattern of West Godavari District during 2004-05 and 2007-08

(Area in Acres)

	2004-05		2007-08	
Crops	Area	Per cent	Area	Per cent
Rice	1037810.12	78.02	1100395.60	76.50
Maize	58463.86	4.40	88736.08	6.17
Sugarcane	83124.44	6.25	86284.84	6.00
Mango	42296.11	3.18	40208.11	2.80
Groundnut	9673.97	0.73	14349.09	1.00
Coconut	54035.83	4.06	55086.00	3.83
Tobacco	44769.58	3.37	53408.19	3.71
Total	1330173.89	100	1438467.94	100

Source: Statistical Abstract of Andhra Pradesh: 2006 and 2009.

Individually the crops form less than 7 per cent cropped area. Sugarcane, a substitute crop in Delta zone, constitutes less than 6.25 per cent of area and falls marginally to 6.17 per cent. The only crop, which has picked up was maize, with an increment from 4.4 per cent to 6.17 per cent. All other crops have witnessed marginal changes during the period 2004-05 and 2007-08 (see Table 3.3).

Table 3.4
Sources of Land Irrigation in West Godavari during 2004-05 and 2007-08

(Area in Acres)

Source of Irrigation	2004 -05	Per cent	2007-08	Per cent
Canals	467980.22	52.78	470036.09	50.85
Tanks	44354.45	5.00	55950.85	6.05
Tube wells	325067.46	36.66	361613.55	39.12
Dug wells	26167.89	2.95	15683.43	1.70
Other sources	23111.26	2.61	21072.68	2.28
Total	886681.29	100	924356.62	100

Source: Statistical Abstract of Andhra Pradesh 2006 and 2009.

If one considers the different sources of irrigation the district has two main sources: government canals and tube wells. Canals irrigate nearly 50 per cent of land while tube wells irrigates 36 per cent of the total cultivated land in 2004-05 and the share of this source has increased to 39 per cent by 2007-08. Other sources of irrigation have marginal shares in total land irrigated.

The district can be sub-divided into three zones: delta, upland and agency areas. In the delta zone, 100 per cent of land is irrigated by canals, while in the uplands tube wells are the main source of irrigation (see Table 3.4).

Table 3.5
Means of Production of West Godavari District during 1999-2000 and 2004-05

Category of means of production	1999-2000	2004-05
Plough	44833	24365
Diesel Engines	4747	7385
Electricity Pumps	28338	21833
Tractors	7453	6478
Sugar Cane Crushers	403	513
Total	85774	60574

Source: Statistical Abstract of Andhra Pradesh 2005 and 2007.

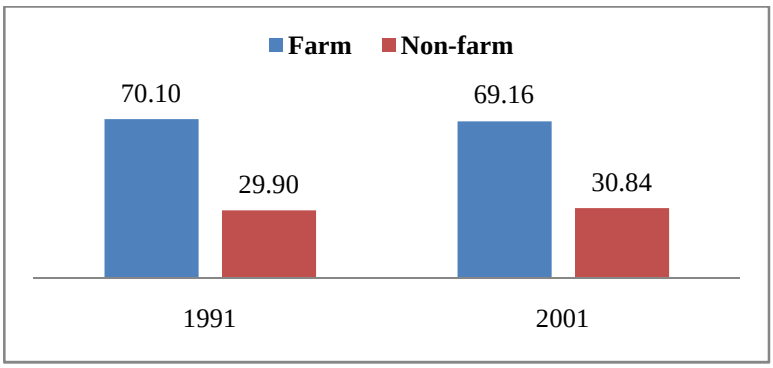
The composition of agricultural machinery in the district is provided in table 3.5. The district has both plough (traditional instrument) and tractor (modern instrument) in usage. An interesting feature is the drastic decline in the number of machinery in usage. There was decline in the number of plough from 44,833 to 24365. This would imply either an increase in 'capitalization' of agriculture but this gets puzzled as there was a reduction in the number of tractors from 7,453 to 6,478. A probable explanation could be that the usages of plough are decreases and tractors are in usage, but an excess in number of tractors. A significant increase in land under tube wells leads to an increase in diesel engines in usage.

3.2.3 Occupation Structure at District level

Occupation structure is presented at three levels. At one level, it shows the share of population that is staying in rural and urban areas. The rural population is assumed to derive their income from agriculture directly or indirectly; while urban population derives their income from Industry or Service sectors. At the second level the rural population is divided into farm sector and non-farm sector. In addition, the farm sector is divided into cultivators and agricultural labourers. At the third level, the cultivators of farm sector are classified into groups based on land holding.

Figure 3.1: Farm and Non-farm Sector of West Godavari District

Based on an economic classification, households are classified into farm and non-farm sector. Dependence of households on farm sector is higher than on non-farm sector in West Godavari district (see figure 3.1).



Source: Statistical Abstract of Andhra Pradesh, 2007.

However, comparing the data from 1991 and 2001 census we can see the decline in dependence on farm sector, which also implies a shift to non-farm sector. This follows the trend of decreasing share of households dependant on the farm sector.

Table 3.6
Farm Sector and Non-farm Sector of West Godavari 1991 and 2001

Description		1991	2001
Farm Sector	Cultivators	2,19,955 (15.02)	2,09,503 (12.46)
	Agricultural Labourers	8,06,226 (55.07)	9,51,723 (56.71)
Non-farm Sector	Household Industry	3,52,53 (2.40)	4,96,37 (2.96)
	Others	4,02,358 (27.48)	4,67,920 (27.88)
Total		14,63,792 (100)	14,25,708 (100)

Note: Figures in brackets are percentages to the total.
Source: Statistical Abstract of Andhra Pradesh. 2007, pp.45-54.

The rural economy is classified as farm and non-farm sector and the farm sector is again sub-divided in to cultivators and agricultural labourers, while the non-farm sector is sub-divided in to household industry and others. In the farm sector, 15.02 per cent of the households are cultivators during 1991, which has later declined to 12.46 per cent during 2001; at the same time percentage of agricultural labourer households has also increased from 55.07 to 56.71 during the same period. In short, it implies that there has been a decline in the labour-demanding (cultivators) and marginal increase in labour-supplying (agriculture labourers) during this period. Here also one finds the state level trend similar to that of the all India level. The proportion of cultivators was declining but the proportion of agricultural labourer was witnessing marginal increase.

The rural non-farm employment is classified into (i) traditional (ii) modern. In two villages of East Godavari in Andhra Pradesh, the study by Prasad Rao (2006) shows that modern non-farm sector has been increasing while the traditional non-farm sector disappearing. Another study on West Godavari district has shown that rural non-farm employment has increased over the period of 1971 to 1991 by Gangadhara Rao G (1997). With reference to non-farm sector, the percentage of households in industry has risen from 2.40 in 1991 to 2.96 in 2001. The same also holds true with reference to other activities which involves mining, quarrying, construction, trade and commerce, transport, storage and communication that has observed increase in households from 27.48 per cent to 27.88 per cent during the same period (see Table 3.6).

Table 3.7
Land Distribution of West Godavari in 2000-01 and 2005-06

(Area in Acres)

Size of Land	2000-01		2005-06	
	No.	Area	No.	Area
Marginal	395406 (72.51)	403650.21 (32.33)	429752 (73.92)	434663.73 (33.94)
Small	90297 (16.56)	312196.02 (25.01)	92025 (15.83)	317264.05 (24.77)
Semi-medium	44334 (8.13)	294577.79 (23.60)	44308 (7.62)	293935.33 (22.95)
Medium	14160 (2.60)	194826.00 (15.61)	14298 (2.46)	194564.07 (15.19)
Large	1104 (0.20)	43106.60 (3.45)	998 (0.17)	40299.54 (3.15)
Total	545301 (100)	1248356.61 (100)	581381 (100)	1280726.71 (100)

Note: Figures in brackets are percentages to the total.
Source: Statistical Abstract of Andhra Pradesh, 2006 and 2009.

Distribution of number of households and land owned by different size groups is presented in table 3.7. The number and share of land owned by marginal farmers was the highest. They form nearly 72 per cent of the holding and own nearly 32 per cent of land. Interestingly, the marginal holding is the only group which has increased their number as well as share of land marginally. In all other size groups, the share of households as well as share of land owned has decreased. But if one sees the average land holding by each group, such as small, semi-medium, medium and large households it has declined in 2004-05 compare to the 2000-01. The above table shows that land was not getting concentrated in the large land holding groups, who are the potential demanders of labourers. This indicates that the district is following the trends seen for the all India and state level i.e., decrease in share of holding and land owned by medium and large farmers but a increase in share of small and marginal farmers.

3.2.4 Non-farm Sector in the West Godavari District

Fisheries

West Godavari district stands at the top in Pisi-culture when compared to the other districts of the state. The district has a coastline of 19 km covering four marine villages. The sources of fishing are river Godavari, the Kolleru Lake, the Upputeru and Coastal belt, besides the canals and a good number of tanks. In addition to the above, under brackish water the quantum of prawns were cultured in 2733.88 acres. The fisheries department has been playing a vital role for the development of Pisi-culture in the district by establishing inland

fisheries training institute at Badampodu (Statistical Abstract of Andhra Pradesh 2006, p.146). There are 15,081 marine fishermen where as the active fishermen are 4,825. The fish production in 1999-2000 was 84,367 tons where as 2000-2001, it increased to 93,923 tones.

Industries

The district industries centre has been set up with effect from 1-3-81 to provide all the service needed to motivate the entrepreneurs to set up small and tiny sector industries. There are 29 large and medium scale industries existing in the district with an investment of Rs. 14,192/- lakhs, providing employment to 12,248 persons. The important items that were being manufactured are sugar, paper and extraction of oil, distilleries, and chemicals. There were 4,981 small-scale industries, with an investment of Rs.19,484 lakhs, providing employment to 82,604 persons. The important items that are being manufactured are corrugated boxes, egg trays, modern roofing, general engineering works, and ice plants (Statistical Abstract of Andhra Pradesh, 2006, pp.153-54).

Table 3.8
Working Factories in West Godavari 2002-03 to 2005-06

Description	2002-03	2005-06
No. of factories	766 (in number)	729 (in number)
Fixed capital	47,459 (in lakhs)	93,521(in lakhs)
Working capital	30,755 (in lakhs)	33,782 (in lakhs)
Productive capital	78,214 (in lakhs)	1,27,303 (in lakhs)
Workers	27,986 (in number)	30,444 (in number)
Employees	32,990 (in lakhs)	35,600 (in lakhs)
Wages to workers	9,895 (in lakhs)	12,006 (in lakhs)
Total emoluments	13,361 (in lakhs)	16,137 (in lakhs)
Total inputs	3,07,709 (in lakhs)	3,54,597 (in lakhs)
Total output	3,45,087 (in lakhs)	4,39,181(in lakhs)
Depreciation	4,937 (in lakhs)	7,793 (in lakhs)
Net value	32,441 (in lakhs)	76,791(in lakhs)
Gross value	32,378 (in lakhs)	84,584(in lakhs)

Source: Statistical Abstract of Andhra Pradesh. 2006, pp.175 –176 and 2009, pp. 237-239.

In West Godavari district during 2002-03 to 2005-06 the number of working factories have declined from 766 to 729. One can say that fixed capital, working capital and productive capital increased from 2002-03 to 2005-06. Even the working population and employers have also increased over the two periods. The total inputs and output has also increased during the two periods but the output has increased more than the increase of input the net value and gross value has been doubled during this period, which means that the total number of dependency households on industry has increased in West Godavari District (see table 3.8).

3.2.5 Performance of Labour Market in the District in terms of Real Wages

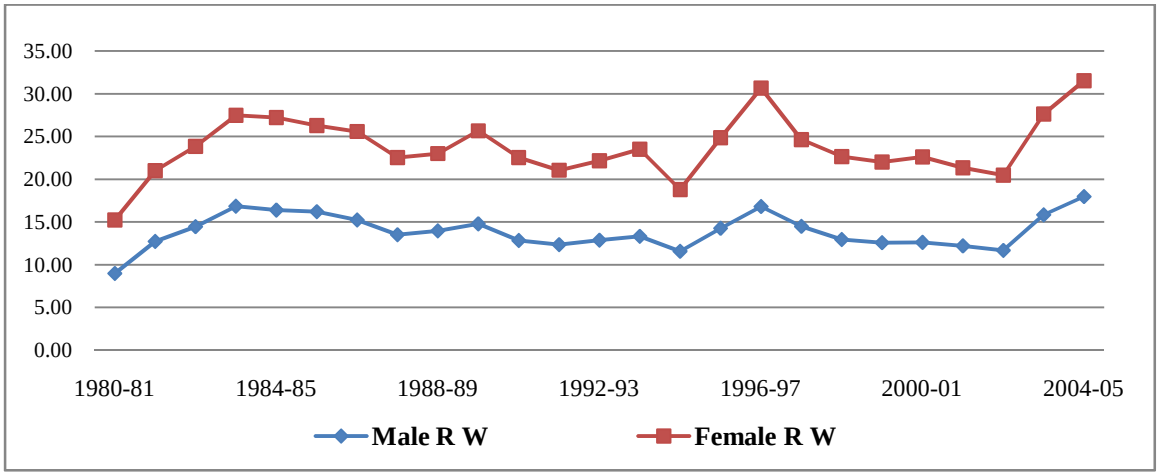
The total work participation rate in West Godavari district is 43.05 per cent. The total work participation rate separately for males and females in the rural areas are 59.44 per cent and 32.35 per cent respectively, against the corresponding figures of 52.54 per cent and 14.21 per cent in the urban areas. Within the rural areas, the total work participation rate varies between a minimum of 39.84 per cent recorded in Tanuku mandala praja parishad and a maximum of 55.20 per cent registered in Buttayagudem mandal praja parishad. Among the main workers, the percentage of cultivators has come down from 21.60 per cent (1981 census) to 15.06 per cent (1991 census). This is compensated by increase in the percentage of agricultural labourers from 49.64 per cent (1981 census) to 55.19 per cent (1991 census). Therefore, there is no appreciable change during the decade in the proportion of work force directly depending upon agriculture. The female work participation rate in the agriculture sector in the district has decreased from 83.77 per cent (1981 census) to 81.82 per cent (1991 census). There is not much difference in parentage of workers in the household industry and other categories.

Wages

Agricultural wages are paid in two forms either cash or grain and most often it is partly in cash and partly in kind (Atchi Reddy 1983). There is evidence that wages are generally paid in kind and rarely in cash, from 1800 onwards. After 1960, the commercial outlook towards cultivation brought about changes in wages, since commercial crops, unlike in food crops, is not useful as food some of the casual labourers, especially, those working in the commercial crops like tobacco, groundnut, sugarcane, etc. received their wages in cash. The wage rates of casual and attached labourers are different. Casual labourers are mostly employed in peak

seasons and their wage rate would be higher than those of the average servants. The employment of casual labour is more uncertain than that of annual workers. The casual labour wage rates, therefore, may include some sort of an uncertainty premium, making these wage rates higher than those of annual workers. In Andhra Pradesh, the wage rates for casual workers are higher than that of annual workers (Rakesh Basanth 1984).

Figure 3.2: Real Wages for West Godavari District during 1980-81 to 2004-05



Source: Compiled from different issues of Agricultural Wages in India from 1980-81 to 2004-05, and Seasonal Crop Reports of Andhra Pradesh, 1995-96 and 1996-97.

In the case of real wages in the district of West Godavari, the agricultural real wages for male and female labourers during the 1980-81 to 2004-05, witnessed a steady increase at the district level in general. But year to year fluctuation in real wage[2] has been observed over the period among both male and female, due to changes in the consumer price indices. The real wages increased among both male and female labourers during 1980-81 to 1989-90. However, the real wages started declining from 1990s and continued to decline till 1994-95, due to decline in gross cropped area.

The data of agricultural wages for the years of 1995-96 and 1996-97 are not available in periodical of "Agricultural wages in India". Therefore, for these two years I have collected data from seasonal crop reports of Andhra Pradesh. Strangely, there is a huge variation with this data trend to that of data from "Agricultural wages in India" as there has been a sharp increase observed in real wages for these two years. As there is a huge variation we have not taken those two years in to consideration for our analysis. However, real wages have seen a

[2] Real Wage = Nominal Wages / Consumer Price Index for Agricultural Labourers CPIAL (1986-87 Prices)* 100.

steady increase during the period 1997-98 to 2002-03. During 2003-04 to 2004-05 increase in real wages for both male and female agricultural labourers has been noticed.

3.3. A Brief Description of the Mandals from Where the Two Villages were Selected

In West Godavari district 46 revenue mandals are there. According to geographical conditions the district is classified into three zones (i) Delta (ii) upland and (iii) agency areas. In which researcher has selected two mandals for the study purpose, one from the delta zone and another one from the upland zone. The two mandals are viz Lingapalem and Ganapavarm, they have been selected based on irrigation with sources from the 2001 census. According to the 2001 Census, Ganapavaram mandal witnessed 100 per cent irrigation from the Government canal irrigation and in Lingapalem mandal there are two types of irrigation sources system one is irrigated by canal system and the other one is bore-well irrigation.

Table 3.9
Land use Pattern of Two Mandals in 2006-07

(in Acres)

Description	Lingapalem	Ganapavaram
No. of villages	25	25
Geographical area	50853.18 (100)	24697.64 (100)
Forest	5233.57 (10.29)	0
Barren & uncultivable land	1959.50 (3.85)	0
Land put to non-agricultural use	6454.25 (12.69)	4541.69 (18.38)
Permanent pastures & other grazing land	1057.58 (2.07)	0
Misc.trees crop & groves	946.39 (1.86)	0
Culturable Waste	6239.27 (12.26)	0
Current Fallow lands	5475.73 (10.76)	0
Fish Tank	0	1181.13 (4.78)
Net Area Sown	23486.85 (46.18)	18974.80 (76.82)

Note: Figures in brackets are percentages to the total.
Source: Hand Book of Statistics 2006-07, of West Godavari district p.34.

Based on the resources available from Ganapavaram mandal Velagapalli village has been selected representing irrigated village, on the other hand, from Lingapalem, Badarala village has been selected representing un-irrigated village. Researcher wanted to study the rural labour market, how it is structured and performance in irrigated village and the un-irrigated village.

The above table explains the land use pattern in the two mandals of Lingapalem and Ganapavaram of the West Godavari District. There is absence of forest, barren uncultivable land, for grazing land, culturable waste and fallow lands in Ganapavaram mandal which is in the irrigated zone. This shows that the predominant part of the land area in this mandal is being cultivated as over 76.8 per cent of the area is under net sown area, in comparison to just 46.1 per cent of net sown area in non-irrigated mandal of Lingapalem.

Out of the 25 villages in Lingapalem mandal, the researcher has selected, Badarala village located in between Ramasingavaram (Pedavegi mandal) and Polacigudem (Kamavarapukota mandal). In terms of distance, the village is located just 4 kms near Pedavegi mandal and 25 kms and 30 kms from Kamavarapukota and Lingapalem. The researcher has also selected Velagapalli village out of the 25 villages in Ganapavaram mandal. Velagapalli has an operated area of 148.77 acres and is surrounded by Varadarajapuram and Kommara (see Table 3.9).

Table 3.10
Irrigation Sources of Lingapalem and Ganapavaram, 2006-07

(Area in Acres)

	Linapalem		Ganapavaram	
Description	Kharif	Rabi	Kharif	Rabi
Canals	0	0	18974.81 (100)	18974.81 (100)
Tanks	5653.64 (42.95)	0	0	0
Tube wells	5908.16 (44.88)	12604.57 (88.39)	0	0
Other wells	1601.20 (12.16)	1655.57 (11.61)	0	0
Total	13163.17 (100)	14260.14 (100)	18974.81 (100)	18974.81 (100)

Note: Figures in brackets are percentages to the total.
Source: Hand Book of Statistics 2006-07, of West Godavari district pp.55-57.

According to the irrigation sources of the two mandals Lingapalem mandal is an un-irrigated zone and Ganapavaram is an irrigated zone. In Lingapalem mandal the main sources of

irrigation are tank wells, bore wells and other wells while in Ganapavarm mandal it depends on the government canal system (see Table 3.10).

Table 3.11
Distribution of Cropping Pattern in Two Mandals, 2006-07
(Area in Acres)

	Lingapalem		Ganapavaram	
Crops	Kharif	Rabi	Kharif	Rabi
Paddy	7734.23 (58.03)	61.775 (0.54)	18974.81 (100)	18974.81 (100)
Maize	49.42 (0.37)	6745.83 (59.18)	0	0
Sugarcane	467.019 (3.50)	0	0	0
Mango	3343.26 (25.08)	0	0	0
Banana	649.873 (4.87)	0	0	0
Groundnut	59.304 (0.44)	380.53 (3.33)	0	0
Coconut	1022.99 (7.67)	0	0	0
Tobacco	0	4210.58 (36.93)	0	0
Total	13326.1 (100)	11398.72 (100)	18974.81 (100)	18974.81 (100)

Note: Figures in brackets are percentages to the total.
Source: Hand Book of Statistics 2006-07, of West Godavari district p.36 - 43.

The cropping pattern majorly depends upon the sources of irrigation. The irrigation sources of the two surveyed village viz., Badarala is primarily bore-well and other Velagapalli is canal irrigated. These irrigation conditions specify the cropping pattern. In irrigated areas generally they cultivate paddy and un-irrigated areas prefer multi crops cultivation. One can say that since Lingapalem mandal is un-irrigated, so in this mandal the cultivation is carried out in kharif season where paddy covers 58.03 per cent of cultivated area while in rabi season paddy cultivation was only 0.54 per cent. During the rabi season maize cultivation is 59.18 per cent but the in kharif season the production of maize is less by 0.37 per cent. But in most of the upland area, in rabi season maize is cultivated. Tobacco is also one of the commercial crops in un-irrigated zone. Before 2005, in Lingapalem mandal cultivators used to cultivate tobacco but later they switch over to the maize crop, according to the market demand (see table 3.11).

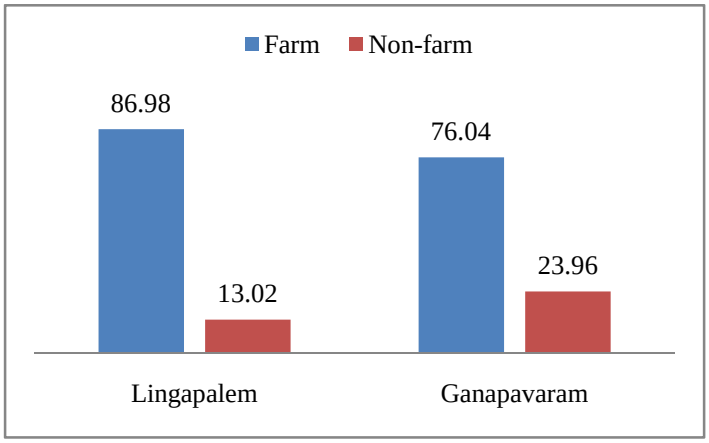
Table 3.12
Mandal wise Agricultural Machinery and Implements

	Agricultural Instruments	
Instruments	Lingapalem	Ganapavaram
Tractors	200	61

Source: Hand Book of Statistics 2006-07, of West Godavari district p.47.

In agricultural production process the role played by agricultural machinery instruments is of utmost importance. Agricultural machinery instruments are generally classified into two types (i) Traditional (ii) Modern. The important traditional instruments are wooden and iron/steel plough worked with bullocks. In spite of the fact that Lingapalem mandal has more tractors (200) than Ganapavaram mandal (60), the usage of traditional farm instruments is more prevalent in Lingapalem (see Table 3.12).

Figure 3.3: Mandal-wise Farm and Non-farm Sector Households



Source: Hand Book of Statistics 2006-07, of West Godavari district, pp.19-20.

In Lingapalem mandal about 86.98 per cent of the households are dependent on farm sector, while the dependence on farm sector was relatively less at 76.04 per cent in Ganapavaram mandal. Greater reliance on non-farm sector in Ganapavaram mandal indicates the withdrawal of households from agriculture to non-farm sector. It is interesting to note that reliance on non-farm sector was observed to be high in the developed mandal of Gandapavarm rather than in less developed mandal of Lingapalelm.

This below table inferred the distribution of households between farm and non-farm sector in the two mandals. The farm sector is constituted of two types of activities namely cultivators and agricultural labourers, whereas the non-farm activity is constituted of households industry and other miscellaneous.

Table 3.13

Mandal-wise Distribution of Workers between Farm and Non-farm Sectors (2006-07)

Description		Lingapalem	Ganapavaram
Farm Sector	Cultivators	4597 (16.42)	4443 (15.40)
	Agricultural Labourers	19907 (70.66)	17495 (60.64)
Non-farm Sector	Household Industry	551 (1.96)	769 (2.67)
	Others	3118 (11.07)	6142 (21.29)
Total		28173 (100)	28849 (100)

Note: Figures in brackets are percentages to the total.
Source: Hand Book of Statistics 2006-07, of West Godavari district pp.19-20.

The proportion of households dependent on farm sector is higher in Lingapalem mandal (16.0 per cent cultivators and 70.6 per cent agricultural labourers) than in Ganapavaram (15.4 per cent and 60.6 per cent respectively), suggesting the predominance of agricultural sector in Lingapalem manadal. With regard to non-farm sector, dependency on household industry was more in Ganapavaram (2.6 per cent) than in Lingapalem (1.9 per cent), while the percentage of households engaged in other non-farm activities are 21.2 per cent and 11.0 per cent respectively in these two mandals. There was greater diversification even among non-farm activities in Ganapavaram mandal which was in the irrigated zone than in Lingapalem which is un-irrigated mandal (see Table 3.13).

Table 3.14

Mandal-wise Distribution of Operated Land Holdings (2005-06)

(Area in Acres)

Description	Lingapalem		Ganapavaram	
Size of land Holding	Operated land		Operated land	
	No.	Area	No.	Area
Marginal	9559 (72.28)	9509.68 (30.00)	8810 (79.28)	9099.05 (45.15)
Small	2094 (15.94)	7325.53 (23.11)	1706 (15.35)	5729.83 (28.43)
Semi-Medium	985 (7.50)	6583.94 (20.77)	518 (4.66)	3421.65 (16.98)
Medium	437 (3.33)	6409.34 (20.22)	71 (0.64)	867.63 (4.30)
Large	59 (0.45)	1868.17 (5.89)	7 (0.06)	1036.75 (5.14)
Total	13134 (100)	31696.66 (100)	11112 (100)	20154.91 (100)

Note: Figures in brackets are percentage to the total.
Source: Hand Book of Statistics 2006-07, of West Godavari district pp.45-46.

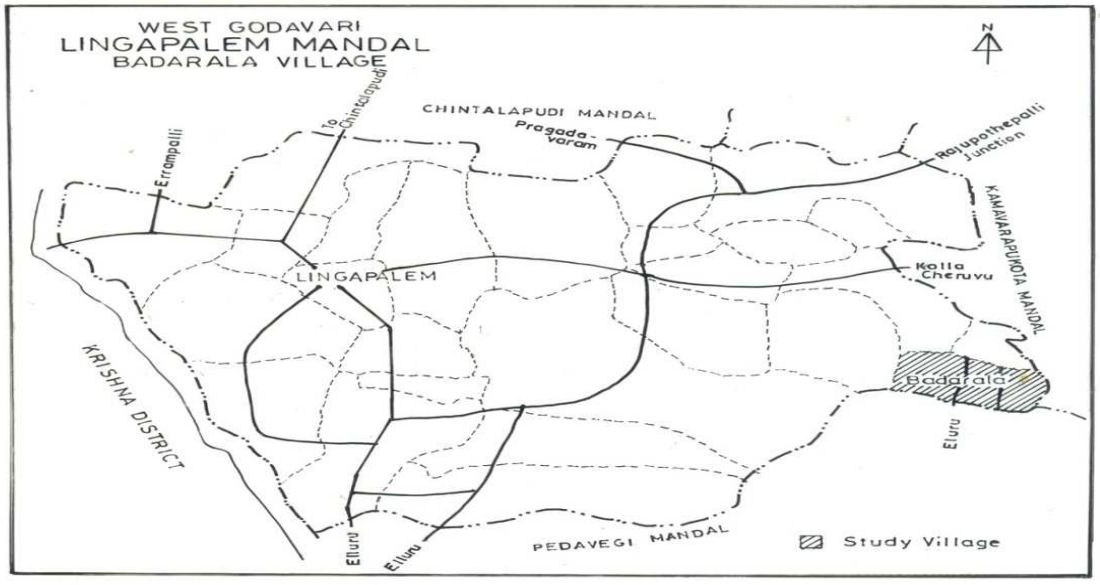
There two mandals differ even in terms of land structure due to the climatic conditions and irrigation facilities. Given that Ganapavaram is in the irrigation zone, the percentage of irrigated land is higher (76.8 per cent) than in Lingapalem (46.1 per cent). The same holds true even in the case of cultivable area and number of holding, where the proportion of small and marginal farmers is higher in Ganapavaram than in Lingapalem, given the higher irrigation facilities and greater fragmentation (see Table 3.14).

3.4. Profile of the Two Surveyed Villages

Badarala (Lingapalem Mandal)

Badarala is one of the surveyed villages in the Lingapalem *mandal* of West Godavari district in the state of Andhra Pradesh. It is situated at a distance of 10 km from the Lingapalem *mandal* headquarters, while the district headquarters Eluru is located 26.33 km away from this village. This village was carved out as a separate village from *Mudicharla* village during 1995. In the household survey the total number of households is 172 with a total population of 730.

Map 3.2: Badarala Village of Lingapalem Mandal in West Godavari District

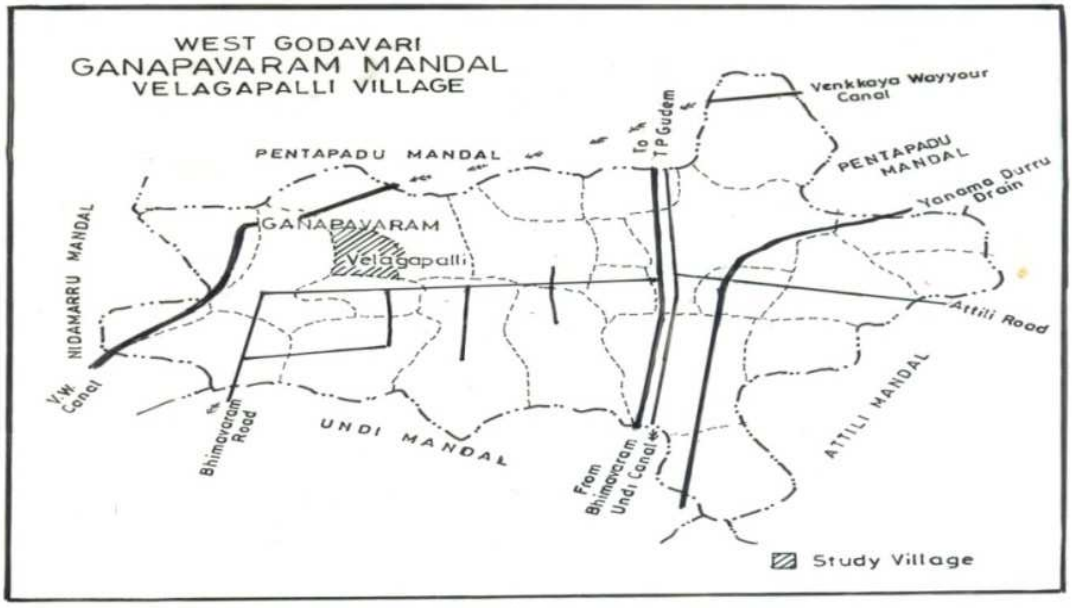


The total operated land in this village is 720.44 acres while the land-man ratio is 0.98 acres per individual. This is a dry village with bore-wells being the main source of cultivation. The village has two schools, including a primary school and an *anganwadi* school. The village also has a veterinary hospital.

Velagapalli (Ganapavaram Mandal)

Velagapalli village forms part of Ganapavaram mandal, in the West Godavari district. This village is at a distance of 4 km northwest of Ganapavaram town. The district headquarter, Eluru, is located to the west of the village at a distance of 78 km. In the household survey, the total number of households is 135 with a population is 581. The total land operated is 148.77 acres and a land man ratio of 0.26.

Map 3.3: Velagapalli Village of Ganapavaram Mandal in West Godavari District



The village gets water for cultivation through government canals and this water is used for the cultivation of two crops. This village has two schools, one, a primary school and another Anganwadi school. The village has two rice mills, and there is a thermocol and an Ice factory located near this village, which is source of provides employment for people staying in the village.

Table 3.15
Number of Households and Average Household Size in the Two Study Villages

	Badarala			Velagapalli		
Description	Number of Households	Total Population	Average Household Size	Number of Households	Total Population	Average Household Size
Field Survey	172	730	4.24	135	581	4.30
Census of India 2001	199	819	4.12	161	617	3.83

Source: Field Survey 2010, and Census of India 2001.

According to the Census survey, 2001, the number of households and population of Badarala village were reported as 199 and 819 respectively; with average size of household being 4.12 (Table 3.15). However, in the field survey only 172 households were enumerated and the population count of the village registered as 730. In Velagapalli village also, one finds a significant difference between the number of households and the population enumerated in the field survey and the Census operations. In the village, the Census operation reports 161 households while in the survey, there are only 135 reported households. The population also decreases from 617 (as per the Census) to 581 (as per field survey). There could be two possible explanations for these differences. One reason could be the emigration form the village between 2001 and 2009. The second possible explanation could be differences in the identification of households in the village by Census operations and by the present researchers. (see Table 3.15).

Table 3.16

Caste-wise Distribution of Households in the Two Surveyed Villages

Description of Caste	Badarala		Velagapalli	
	No.	Per cent	No.	Per cent
OC	79	45.93	53	39.26
BC	79	45.93	47	34.82
SC	14	8.14	35	25.92
Total	172	100	135	100

Note:

1. Other Caste (OC): Brahmin, Kamma, Kapu, Velama, Rajulu and Komiti
2. Backward Caste (BC): Thurpukapu, Koppu-velama, Gowda, Rajaka, Golla, Mangali, Vadrangi, and Muslim.
3. Scheduled Caste (SC): Mala and Madiga.

Source: Field Survey, 2010.

Though both these villages represent multi-caste structure, the other castes (OCs) people dominates in terms of number and size of holding of land. In Badarala village, even though both OC and BC communities are in equal number (45.9 per cent), OCs are holding around 85 per cent of the land, with BCs are holding just marginal size of land and SCs, who constitute around 8.1 per cent, are holding insignificant land. The same holds true to Velagapalli village also, as OCs who constitutes around 39.2 per cent of the total households own around 93 per cent of the cultivable land. BC and SC, those who constitute around 34.8 and 25.9 per cent of households hold marginal and insignificant land in this village. Even though both the villages have a multi caste society, land concentration is predominantly in the hands of the upper caste households (see Table 3.16).

A detailed caste wise classification of the two study villages is presented in the above table. The proportion of household in Badarala village under other caste (OC) is 46.1per cent, of which Kamma caste is the majority (43.2 per cent), followed by Kapu, Brahmin and Komati (Vaishya). With reference to backward caste who constitutes 45.8 per cent of total households, 36.0 per cent belong to Gowda, followed by Mangali (Barber 2.9 per cent), Rajaka (Washer-man) and Golla (Sheppard) at 2.3 per cent, Vadrangi (Carpenter) and the Muslims. The proportion of scheduled caste population in this village is 8.1 per cent and most of them belong to the Madiga caste.

Table 3.17

Detailed Sub-caste-wise Proportion of Households in the Two Surveyed Villages

Description	Badarala		Velagapalli	
Caste	No.	Per cent	No.	Per cent
Brahmin	1	0.6	0	0
Kamma	74	43.2	0	0
Kapu	3	1.7	33	24.4
Velama	0	0	18	13.4
Rajulu	0	0	2	1.5
Komiti	1	0.6	0	0
Total Other Caste (OC)	**79**	**46.1**	**53**	**39.3**
T.kapu/K.Velama*	0	0	37	27.4
Gowda	62	36	0	0
Rajaka/Golla	4	2.3	9	6.7
Mangali	5	2.9	1	0.7
Vaddies	2	1.2	0	0
Vadrangi	3	1.7	0	0
Muslim	3	1.7	0	0
Total Backward Caste (BC)	**79**	**45.8**	**47**	**34.8**
Mala	0	0	35	25.9
Madiga	14	8.1	0	0
Total Schedule Caste (SC)	**14**	**8.1**	**35**	**25.9**
Grand Total	**172**	**100**	**135**	**100**

Note: * T.Kapu = Thurpu-kapu and K.Velama = Koppu Velama.

Source: Field Survey, 2010.

In the case of Velagapalli village, the proportion of other caste (OC) households to that of total households is 39.3 per cent, of which Kapu (24.4 per cent) and Velama (13.4 per cent) constitute the major share. However, in comparison to Badarala village, the proportion of upper caste households to that of total households is less in Velagapalli. Also there is a substantial number of scheduled caste (SC) households (25.9 per cent) in this village all of which belongs to Mala caste in quite contrast to Badarala village. With reference to

backward caste, who constitute around 34.8 per cent of total households, the majority of them belong to Thurpu-kapu (27.4 per cent), followed by Rajaka (Washer-man) (see Table 3.17).

Table 3.18
Caste and Sex-wise Distribution of Population in the Two Surveyed Villages

	Badarala				Velagapalli			
Caste	Male	Female	Total	Per cent	Male	Female	Total	Per cent
OC	159	151	310	42.5	113	111	224	38.8
BC	196	159	355	48.6	110	105	215	37
SC	35	30	65	8.9	78	64	142	24.5
Total	390	340	730	100	301	280	581	100

Source: Field Survey, 2010.

The percentage of total other caste (OC) population in Badarala villages is 42.5 per cent, while that of BCs is 48.6 per cent. It is interesting to note that while in this village, the proportion of OCs and BCs to the total households in the village is the highest. Scheduled caste population constitutes around 8.9 per cent of the total population in this village. With reference to Velagapalli village, the percentage of upper caste and backward caste population is more or less same at 38.8 per cent and 37.0 per cent respectively. However, this village also has a substantial number of scheduled caste population who constitute about 25 per cent of the total population (see Table 3.18).

Table 3.19
Operated Land and Different Irrigation Sources in the Two Surveyed Villages

(Land in acres)

Village	Operated land		Land under different sources of Irrigation		Double cropped land	Mixed Crop
	No of HH's operating land	Area (acres)	Canal	Bore well	Area (Acres)	Area (acres)
Badarala	116 (67.44)	720.44 (78.73)	0 (0)	720.44 (100)	165 (52.56)	212 (100)
Velagapalli	56 (32.55)	148.77 (21.28)	148.77 (100)	0 (0)	148.77 (47.43)	0 (0)
Total	172 (100)	869.21 (100)	148.77 (100)	720.44 (100)	313.77 (100)	212 (100)

Note: Figures in brackets are percentages to the total.
Source: Field Survey, 2010.

In Badarala village, the total number of households holding cultivable land is 116 who operate a total of 720.44 acres in the village. In this village, dependence on bore well for irrigation is highest. With reference to the cropping pattern, around 165 acres which

constitute around (52.56 per cent) of total area is under double cropping, while 212 acres constituting around (100 per cent) is under mixed cropping.

With reference to Velagapalli, the total number of households operating land (56) and the total area under cultivation (148.7 acres) is relatively smaller when compared to Badarala. However, all the households in this village have access to canal irrigation, which has resulted in a greater area of 148.77 acres under double cropping constituting around (100 per cent) of the total cultivable area (see Table 3.19).

Table 3.20
Caste-wise Distribution of Owned and Operate Land in the Two Surveyed Villages

(Land in acres)

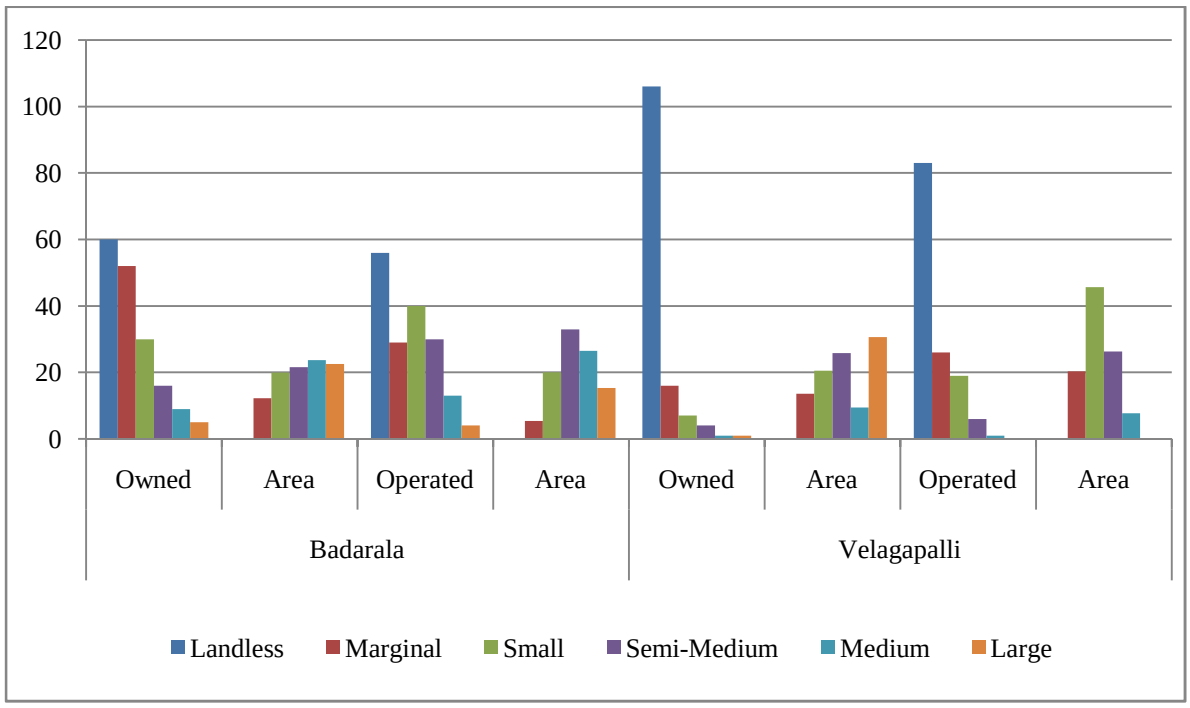
	Badarala			Vellagapalli		
Caste	No. Households	Owned Area	Operated Area	No. Households	Owned Area	Operated Area
Brahmin	1	0	0	0	0	0
Kamma	74	508.24 (85.6)	542.44 (75.29)	0	0	0
Kapu	3	0	0	33	7.52 (6.15)	22.52 (15.13)
Velama	0	0	0	18	106.8 (87.47)	71.45 (48.02)
Rajulu	0	0	0	2	0	1.3 (0.87)
Komiti	1	1 (0.2)	1 (0.14)	0	0	0
Thurpukapu/ Koppuvelama	0	0	0	37	0.5 (0.40)	22.4 (15.05)
Gouda	62	77.5 (13.1)	157 (21.79)	0	0	0
Rajaka/Golla	4	0	0	9	1.9 (1.55)	11.4 (7.66)
Mangali	5	1.5 (0.3)	1.5 (0.21)	1	0	0
Vaddy	2	0	0	0	0	0
Vadrangi	3	0	0	0	0	0
Muslim	3	1 (0.2)	1 (0.14)	0	0	0
Mala	0	0	0	35	5.37 (4.39)	19.7 (13.24)
Madiga	14	4.5 (0.8)	17.5 (2.43)	0	0	0
Total	172	593.74 (100)	720.44 (100)	135	122.09 (100)	148.77 (100)

Note: Figures in brackets are percentages to the total.
Source: Field Survey, 2010.

The above table shows the caste-wise classification of land ownership and operation patterns in the two study villages. In Badarala, more than 85 per cent of the total land is being owned by Kamma caste, followed by Gowda caste (13.1 per cent), however, when it comes to operated land, the proportion of Kammas has declined to 75 per cent, while that of Gowdas has increased to 21.7 per cent, showing that the upper caste Kamma are preferring to lease out land, while the backward caste households are leasing in land. In this village other than Madiga (0.8 per cent), Mangali (0.3 per cent), Muslim (0.2 per cent) and Komati (0.2 per cent), no other caste own land.

With reference to Velagapalli village the same trend is also observed. However, the intensity of leasing out by upper caste households is more in this village. Here, more than 87 per cent of the land is owned by Velama caste, followed by Kapu (6.1 per cent) and Mala (4.3 per cent). However, when it comes to the operated land, the percentage of Velama population has fallen drastically to 48.0 per cent, while that of Kapus and Malas' has doubled to 15 per cent and 13 per cent respectively, indicating clearly that there is more leasing out by the upper caste population in this irrigated village (see Table 3.20).

Figure 3.4: Class-wise Distribution Owned and Operated Land in Two Villages



Source: Field Survey, 2010.

In Badarala village, the number of landless households is the highest when compared to other the categories. While with reference to the land owned category marginal land holders are the highest, followed by small and medium and large farmers. However, in the case of area under owned land, the largest chunk was owned by medium and large farmers. In case of the operated land, the largest number of households is from small farmers, followed by marginal and semi medium farmers. However, in case of area under the operated land, the largest is under semi medium, followed by medium and small farmers.

In Velagapalli village, the dominance of the marginal farmer households is the highest, followed by small and semi medium households. However, the large farmers own maximum area under cultivation, followed by semi medium households. In case of the operated land, the largest number of households is from marginal farmers, followed by small farmers. However, when it comes to area under the operated land it is more under small farmers, followed by semi medium farmers. This shows that there is more leasing out activity among the large and semi-medium farmers, while there is a lot of leasing in by small and marginal farmers.

Table 3.21
Cropping Pattern in the Two Surveyed Villages **(**Land in Acres**)**

	Badarala				**Velagapalli**			
Crops	Kharif		Rabi		Kharif		Rabi	
	No. of HHs	Area	No. of HHs	Area	No. of HHs	Area	No. of HHs	Area
Paddy	56	158 (23.88)	0	0	52	148.8 (100)	52	148.8 (100)
Maize	0	0	103	395.4 (44.43)	0	0	0	0
Banana	2	3 (0.45)	0	0	0	0	0	0
Sunflower	1	2 (0.30)	0	0	0	0	0	0
Sugarcane*	0	0	5	10.5 (1.18)	0	0	0	0
Tobacco	1	6 (0.90)	0	0	0	0	0	0
Coconut**	25	212 (32.04)	25	212 (23.88)	0	0	0	0
Cocoa**	25	198 (29.93)	25	198 (22.29)	0	0	0	0
Palm Oil**	12	72 (10.88)	12	72 (8.11)	0	0	0	0
Total	127	661.5 (100)	170	887.9 (100)	52	148.8 (100)	52	148.8 (100)

Note: *refers to long duration crops, ** refers to mixed crops, and the figures in brackets are percentages to the total.
Source: Field Survey, 2010.

The above table describes the cropping pattern in the two study villages. In Badarala village during kharif season, the area under coconut (212 acres) is the highest followed by cocoa (198 acres) and paddy (158 acres). However, the number of households practising paddy cultivation is the highest (56 acres), followed by coconut and cocoa (25), implying a greater labour force under paddy. Given the fact that the plantation crops are of longer duration, we can say that the area under paddy is the highest in this village, followed by tobacco, banana and sunflower. During the rabi season, there is a shift from paddy to maize as the area under cultivation (395.4 acres) and the number of households (103) who cultivate this crop is also higher, even the surpassing plantation crops. It has been found from the field study that the cultivation of long gestation crops in this village is mainly due to the scarcity of labour in the village and most of the commercial cropping is under taken by medium and large scale farmers. While the total owned and operated land are in this village 593 acres and 720.4 acres respectively, during the cultivable season the operated land increases to 880.9 due to double counting of long gestation crops like coconut and cocoa.

In the case of Velagapalli village, the agricultural practice is mainly mono crop in nature. During both kharif and rabi seasons only paddy is cultivated in 100 per cent of the area and by 100 per cent of the total households. There is an absence of any other crop in this area given the fact that there is ample availability of water and labour in this village (see Table 3.21).

Table 3.22
Agriculture Related Instruments in the Two Surveyed Villages

Description	Badarala	Per cent	Velagapalli	Per cent
Sprayers	6	31.57	4	57.14
Plough	4	21.05	0	0
Tiller	0	0	1	14.29
Tractor	9	47.36	2	28.57
Total	19	100	7	100

Source: Field Survey, 2010.

Badarala village has more agricultural related instruments than in Velagapalli, but this is due to the fact that Badarala village is demographically and geographically bigger than Velagapalli. However, it has been observed that given that there is no usage of plough in Velagapalli we can conclude that there is greater mechanization in this village rather than in Badarala (see Table 3.22).

Table 3.23
Sources of Credit in the Two Surveyed Villages

Channel	Badarala	Per cent	Velagapalli	Per cent
HH without any present loans	25	14.53	65	48.14
Banks	51	29.65	17	12.59
Co-operatives	1	0.58	7	5.18
Moneylenders	42	24.41	38	28.15
Relatives/Friends	1	0.58	3	2.22
Self Help Group	3	1.74	3	2.22
Banks/Co-operatives/ Moneylenders	49	28.48	0	0
Moneylenders/Relative/Friends	0	0	2	1.48
Total	172	100	135	100

Note: HH-indicates Households
Source: Field Survey, 2010.

The above table can infer the sources of credit in the study villages. According to the field survey data, the main source of credit in Badarala village is banks which constitute around 29 per cent of the total credit, followed by dependence on multiple sources like banks/co-operatives, money lenders (28.4 per cent) and money lenders (24.4 per cent). However, in the case of Velagapalli, more than half of the households do not depend on any credit facilities, compared to just 14.3 per cent in Badarala village. In Velagapalli the high source of credit is from money lenders (28.1 per cent) followed by banks at 12.5 per cent (see Table 3.23).

Table 3.24
Occupation Patterns in the Two Surveyed Villages

	Badarala		Velagapalli	
Occupation	No.	Per cent	No.	Per cent
Cultivation	149	21.07	66	11.00
Other allied	2	0.28	8	1.33
Agricultural Labour	180	25.14	125	20.83
Non-Farm	39	5.48	96	16.00
Govt Employ	1	0.14	12	2.00
Private employ	20	2.81	36	6.00
Service	321	45.08	257	42.83
Total	712	100	600	100

Source: Field Survey, 2010

The above table shows the occupation wise distribution of population in the two study villages. In Badarala village, out of the total 712 people, the majority (45.0 per cent) of the population are under service sector, followed by agriculture labourer (25.1 per cent), cultivators (21.0 per cent) and non-farm activities (5.4 per cent). In Velagapalli, employment in service sectors is considered as the main occupation (42.8 per cent), followed by agriculture labourers (20.8 per cent) and rural non-farm activities (16.0 per cent). In this village the proportion of cultivators in the total population is comparatively lesser (11 per cent) than that of the Badarala village (see Table 3.24).

Table 3.25

Education Level Attainment of Two Surveyed Villages

Description	Badarala		Velagapalli	
Education level	No.	Per cent	No.	Per cent
Illiterate	182	25.74	94	16.88
Literate below Primary	48	6.79	60	10.77
Primary	174	24.61	137	24.60
Secondary	210	29.70	188	33.75
Higher Secondary	32	4.53	32	5.75
Technical	26	3.68	21	3.77
Graduation	27	3.82	24	4.31
P.G	6	0.85	0	0.00
Ph.D	2	0.28	1	0.18
Total	707	100	557	100

Source: Field Survey, 2010.

The percentage of illiterate population in Badarala is relatively higher at 25 per cent, while the percentage of population of semi literate group of secondary education is 29.7 per cent and primary education is 24.6 per cent. However, this village has a good number of people who have completed post-graduation (6) and doctoral degrees (Ph.D) (2). With reference to Velagapalli village, the percentage of illiterate persons is relatively lesser at 16 per cent, while people who are educated till primary is 24.6 per cent and secondary level is 33.7 per cent, which also relatively higher than that of the Badarala village. However, when it comes to post graduation and doctoral education this village fares poorer than Badarala village (see Table 3.25).

Table 3.26
Agricultural Output in the Two Surveyed Villages

(in average/bags per acre)

	Badarala		Velagapalli	
Crops	Kharif	Rabi	Kharif	Rabi
Paddy (75 Kg)	26.34	0	29.36	39.99
Maize (100 Kg)	0	25.98	0	0

Source: Field Survey, 2010.

With reference to output, the average output level of Velagapalli village is higher than Badarala village in both the seasons. In Badarala, the average output of paddy during kharif is 26.34 bags per acre, while the average output of maize which is predominantly cultivated during rabi is 25.98 bags per acre. With reference to Velagapalli village, the average output of paddy, which is the only crop cultivated throughout the year, is 29.39 and 39.99 during kharif and rabi seasons respectively (see Table 3.26).

3.5 Conclusion

Andhra Pradesh is predominantly dominated by the agriculture sector in terms of employment. But then if we look into the level of development it is not uniformly distributed. The south costal districts, having natural advantages, are developing rapidly in agriculture sector with help of two anicuts (dams), viz, Godavari and Krishna. In the post-anicut period agricultural expansion has taken place and as a result of that cropping pattern has changed labour demand is also high and henceforth wages also increased steadily. West Godavari district with its long history of irrigation and *ryotwari* settlement is identified as a developed district with paddy being the major crop. The occupational structure shows the importance of rural section and also of the farm sector.

Cultivators constitute nearly 16 per cent of the population and agricultural labourers constitute 30 per cent of the population. But if one looks at the size wise distribution of holding and area owned, one gets the impression of increasing importance of marginal farmers without any indication of land concentration. So it seen that the growth of the district is due to the introduction of ‘new technology’ but not due to reallocation of land resource. This inference may be applicable all over India as well.

Given that the country is not uniform, the district is also not uniform. There are canal irrigated areas and bore well irrigated areas. Two selected mandals are from a delta/canal irrigated and bore well irrigated area. The cropping pattern, as expected, is very different in these two areas. The occupation structure, in terms of relative importance of farm sector is also different. The mandal with irrigation has higher relative share of non-farm sector compared to the dry village. A peculiar feature is that share of agricultural labour is higher in the dry village when compared to Wet village. In the process of transaction, one would have expected the share of agricultural labour to be higher in the developed pocket. Two selected villages also follow the same trend as that of the district.

CHAPTER - IV

CHAPTER – IV

STURUCTURE OF RURAL LABOUR MARKET: AN INVESTIGATION IN TWO VILLAGES

4.0 Introduction

A complete (or formed) labour market implies the separation of households in the farm sector into labour-demanding and labour-supplying households. This would imply a case wherein labour-supplying households have only their labour power to sell and the labour-demanding households have the other primary means of production, namely land. An incompletely formed market is visualised as one wherein this separation is not complete or the labour-supplying households also own/operate some land. One of the indicators for identifying non-separated households is the sizable presence of small and marginal farmers; these households are potentially suppliers of labour but actually internalise the demand for labour within their production unit (Bhaduri, 1984; Bharadwaj, 1994; Unni, 1997). Another indicator could be when labour-supplying households can also lease in land and convert themselves into land operators. In both these processes, potentially labour-supplying households do not actually get converted into labour-supplying households. Both the indicators of incompletely formed labour markets are from the supply side of the labour market. However, the sustenance of the supply side constraints to the labour market also needs a specification of the demand side in the labour market. The nature of demand for labour can be identified in terms of the distribution of land among different classes/groups and their options to cultivate the land. In this chapter, the constraints with regard to the formation of the labour market are seen in terms of structures in the rural economy. The structure of the village economy is identified in terms of the classification of rural households into labour-demanding and labour-supplying households based on their labour exchanges.

The Chapter investigates the structure of labour market in two villages of West Godavari district in Andhra Pradesh. The selection of the villages were purposive in the sense that one village was selected in the canal irrigated area and the another village in a dry area. These villages might not be representative of the villages in the areas but this chapter assumes that one can find some trends of the changes in the labour market which might lead to some generalisations. A second limitation is that households are classified into classes/groups in

terms of single year data, but there could be year-to-year fluctuations in labour exchanges and so the criteria for classification maybe the same but composition in each class/group may change. A third limitation arises since this is an attempt to derive dynamic consequences based on one-year data.

This chapter is divided into five sections. The first section analyses the methodology of classifying households based on the nature of the work (labour). Section two describes the distribution of rural households over farm and non-farm sectors in the two villages. The third section emphasises on the distribution of households in terms of labour-supplying and labour-demanding households in the two villages. Section four deals with the characteristics of classification of the labour-supplying and labour-demanding households. The last section presents the summary and the conclusion of the chapter.

4.1. Methodology of Classification of Rural Households

Rural households are classified into groups/classes based either on the extent of the land owned/operated by households (Vyas, 2003), or labour criteria (Patnaik, 2000; Rao and Bharathi, 2010; Ramachandran, *et al.*, 2010) or access to credit (Eswaran and Kotwal, 1989). The classification is based on two assumptions. One, there is a homogeneity in the behavioural pattern within a group/class and heterogeneity over groups/classes in terms of economic exchanges. Two, the resource that is used for the classification of households is incompletely formed or the resource introduces rigidity in the adjustment process. The rigidity in the resource adjustment process makes the resource a central constraining resource, with the other resources adjusting to this rigidity. The land-based classification assumes rigidity in the land market and because of the fact that adjustment takes places either in the lease or the labour market (Vyas, 2003). The credit-based classification assumes an active land and labour market but introduces rigidity in the credit market leading to credit-based classification of rural households (Eswaran and Kotwal, 1989). The labour-based classification assumes that the labour market is not well-formed (Bharadwaj 1994; Bhaduri, 1984). This might imply either that the rural households are not separated into labour-supplying and labour-demanding households or that in a Marxian framework, the peasantry is not differentiated. This chapter uses labour exchanges to classify households in the rural sector and also use land ownership is the basis for classification of households.

A census type survey was conducted from August to November 2010 with a household being identified as the basic unit of analysis. In the survey, detailed information on the households was collected on the basis of three variables: one, the characteristics of the households like caste, sex-composition, educational attainment of their members, and occupations; two, the resource position of the households like the extent of land owned and operated, tenancy relations, and instruments owned; and three, the nature of labour exchanges entered into by the households in the village economy. The first stage of classification of households is to identify labour-supplying and labour-demanding households based on whether the household is supplying or demanding labour on the basis of the primary occupation. In the second stage, the labour-supplying households are, in turn, classified into two groups. The first group includes households that only supply labour for agricultural operations and do not operate any land. These households are identified as pure labour-supplying households. They earn an income by selling their labour time in the labour market and do not have any other source of income. These households are classified as C_1 type households (pure labour-supplying households). The second group includes households that supply labour for agricultural operations but more importantly also operate land. These households do not demand land but use their own family labour. They have two sources of income: income from selling labour time in the labour market and income from the organisation of production. These households are classified as C_2 type households (mixed labour-supplying households). Labour demanding households, in turn, consist of two groups. The first of these groups includes households that operate land and demands labour in the market but do not supply labour in the market. These households are classified as C_4 type of households (pure labour-demanding households). A second source of demand for labour is one wherein households own land but may not operate land (provide land on lease) or do not take part in the production process but are only supervisors. These households are classified as C_5 type of households (mixed labour-demanding households). In addition to labour-demanding and labour-supplying households in the rural areas, there are also households earning income in the non-farm sector. These households are classified as C_3 type of households (diversified households). The criteria of classification of various types of households are depicted in Table 4. 1.

Table 4.1
Classification of Households

Group/Class	Criteria of Classification
C_1	$D_i = 0$, $S_i \geq 0$, land is not operated by the household, some member of the household engaged in the non-farm sector
C_2	$D_i = 0$, $S_i \geq 0$, land is operated by the household and some member is engaged in the non-farm sector
C_3	$D_i = 0$, $S_i \geq 0$, employed in the non-farm sector
C_4	$D_i \geq 0$, $S_i = 0$, land is operated by the households
C_5	$D_i \geq 0$, $S_i = 0$, land is owned but partly or wholly not operated by the households

Note: D_i refers to the ith individual in a household demanding labour for agricultural operations, while by, S_i is the ith household supplying labour for agricultural operations. .

The classification used here has some similarities to other labour-based classification of households. The C_1 and C_2 types of households are similar to the agricultural labour households and poor peasantry, while the C_3 types of households are generally not presented when one is studying the agrarian economy. The major difference with regard to the labour-based classification comes in with regard to the C_4 type of households in which the classification is that of a labour-demanding household but which might have different groups/classes like the middle peasantry, rich peasantry etc. The C_5 type of households again is similar to those of the landlords or non-cultivating peasantry.

C_1 Group/Class

The first group includes households that only supply labour for agricultural operations and do not operate any land. These households are identified as pure labour-supplying households. They earn an income by selling their labour time in the labour market and do not have any other source of income. These households are classified as C_1 type households (pure labour-supplying households). The agricultural labour households are those who work as agricultural labour in agricultural fields. 'Casual labourers' who work (a) on daily basis and receive the payment at the end of a day's job, or (b) at the completion of particular task either in cash or kind. Those who receive the payment at the end of a day's job are daily-rated casual labourers. Those who receive the payment at the completion of the particular task are the piece-rated casual labourers.

In agriculture except for a brief period involving a few operations it is the daily wage system that is widely prevalent. As the piece-rated system, especially, the contract system is task-specific, it may take one or two days to complete it, where daily-rated system is limited to the particular day the labour is contracted for. In the casual labour system which consist of daily-rated and piece-rated labour systems, the work contracts are limited either to a day or one or two days more. But once this contract is over, he/she is free to enter into a fresh contract with another employer.

The Attached labourers (AL) are the one who work with a particular employer for longer duration, often ranging 2-10 years, (mostly 2-5 years, but few members work for 5-10 years). Regular Farm Labourers (RFL) also work for long duration with a particular employer but duration period is less compared to the Attached labourers, i.e. ranging 4-12 months (most of them work for 12 months) and 2-5 years. These Attached labour (AL) and Regular Farm Labour (RFL) do not have this flexibility. The attached labourers (AL) and Regular Farm Labourers (RFL) may further be classified into two categories. These are (1) The herdsmen and (2) the Ploughmen. Any male person in the age group of 15 to 60 years may work as Attached Labour and Regular Farm Labour. The children i.e. those below 14 years of age , works as herdsmen whose duties include work related to cattle stock, the grazing and feeding of the cattle and cleaning of the cattle-shed etc. Those above 14 years of age work as Ploughmen whose duties encompass all the activities outside the employer's domestic work. These are ploughing, irrigating the fields from the electrified bore wells, all the agricultural operations, work related to cattle stock etc. They work throughout the day right from sunrise to sunset with a break for meals two times during the day.

A casual labourer is free to change employers almost on daily basis. But an AL and RFL do not have this flexibility. He can change his employer only after the expiry of the term which may be anywhere between 2-10 years for Attached labourers and for Regular Farm Labourers 2-5 years. Hence the casual labourers pay is negotiable almost on daily basis whereas an AL and RFL can negotiate on his pay only with the next employer after the expiry of his term with present employer. Hence the probability of accommodating rise in food prices in wages is better in the case of casual labourers than in the case of AL and RFL. A casual labourer is free to abstain from work on any day he chooses. An Attached Labourers (AL) and Regular Farm Labourers (RFL) do not have this choice.

C_2 Group/Class

The second group includes households that supply labour for agricultural operations but more importantly also operate land. These households do not demand labour but use their own family labour. They have two sources of income: income from selling labour time in the labour market and income from the organisation of production. These households are classified as C_2 type households (mixed labour-supplying households).

C_4 group/Class

Landed (pure labour demanding) households are those who might own and operate land, but also work on their land. The peasant households are those whose members work on all or some of the major manual operations on the land and constitute the sector of petty producers that lies between landlords and big capitalist farmers on the one hand, and manual workers on the other hand. In the Peasantry group are those who cultivate land in the range of 4 to 10 hectares. They mostly cultivate land, utilising the Attached labourers, Regular Farm Servants and casual labourers.

C_5 group/class

Which households are classified as C_5 type of households (mixed labour-demanding households). In addition to labour-demanding and labour-supplying households in the rural areas, there are also households earning from income in the non-farm sector. Landlord households own the most of the or the share of the land and generally the best land in the villages, those the members of landlord households do not participate in the major agricultural operation in the land. Their land is cultivated either by tenants, to whom land is leased out on fixed rent or share, or by means of the labour power (Attached Labour (AL), Regular Farm Labourers (RFL)) of hired workers. This landlord group runs monopoly in the village and they not only dominate economic but also traditional social and modern political hierarchies in the village. These landlord households are having land ranging from less than 10 hectares to more than that and above.

C_3 Group/Class

Which households are classified as C_3 type of households (diversified households). The rural non-farm households (RNFS) are those "whose work encompasses all non-agricultural activities: mining and quarrying, household and non-household manufacturing, processing, repair, construction, trade and commerce, transport and other services in villages and rural towns undertaken by enterprises varying in size from household own-account enterprises to factories" (Brajesh Jha 2006).

The Rural Non-Farm households are classified into two types (1) Traditional and (2) Modern. Prasad M (2006) also used this classification where traditional work means whose works come from hereditary perspective in the traditional RNFS sector comes from the following activities like priest-hood, toddy toper, goat rearing, dhobi, barber carpentry and broomstick making. While the modern RNFS activities encompass mason, construction worker, tailoring, painter, petty-business, private-employee, local-bureaucrats' rickshaw-puller/auto-driver, pensioner/retire pensioner and Govt. employers. The criteria of classification of various types of households are depicted in Table 4.1.

Table 4.2
Classification of Households on Land Owned

Group/class	Criteria of classification
Landless	Those who are landless households
Marginal	< 1.00 Hectare
Small	1.01 to 2.00 Hectares
Semi-Medium	2.01 to 4.00 Hectares
Medium	4.01 to 10.00 Hectares
Large	>10.00 Hectares

Source: Department of Agriculture and cooperation, Agriculture Census Division of India.

Here we also use the method of classifying households based on land based classification. We adopt five broad size classes along the lines adopted in the Agricultural Census of India (see Table 4.2). The land based classification criteria is standard in India. The size of land is classified or measure into five broad categories as follows. The first size of classification occupies or land measuring is marginal farmers they are in < 1.00 hectares (in 2.5 acres), the second size of classification is small farmers who are in the 1.01 to 2.00 hectares (in 2.5 to 5

acres), and the third size classification is semi-medium farmers, who own in the range of 2.01 to 4.00 Hectares (in 5 to 10 acres). The fourth size of classification is of the medium farmers, who are in the 4.01 to 10.00 Hectares (in 10 to 25 acres) and finally the fifth size of classification farmers are large scale farmers, who are in the scale of >10.00 Hectares (25 acres above).

4.2. Describes the Distribution of Rural Households over Farm and Non-farm sectors in the Two Villages

The structure of the village economy can be visualised to be made up of two parts based on the nature of labour allocations: the first pertaining to households involved in the farm sector, and the second to households in the non-farm sector. Individuals in the farm sector organise agricultural production while the individuals in the non-farm sector facilitate either production or the distribution of products produced by the farm sector, and from and to the external economy. This consists of artisan households or transporters of the produce or the providers of services for organising production. The farm sector, in turn, can be conceptualised to have two parts: households that are organising production and would potentially be demanding labour, and households that are the suppliers of labour. Two different structures of the farm sector can be identified on the basis of labour allocations. The first of these is based on the initial allocation of resources (labour and land) at the start of the production period, while the second is based on the allocation of land and labour resources post the re-allocation of resources. The first is identified as the initial structure while the second is the evolving structure. The parts of the farm sector in the initial structure are in terms of distribution of owned land over households with the households being separated into landed households (owned) and landless households. One part consists of the households that own land and can potentially organise production and form the demand side in the labour market. The second part consists of the landless labour households that form the supply side in the labour market. Given an initial allocation of land and labour resources, households might enter into re-allocation of land resources changing the initial structure. One of the dominant forms of re-allocation of land resources comprises tenancy arrangements. This changes the internal composition of the initial farm sector. There might be some households that own land but lease out all the land and become labour-supplying households, or there might be some households that are labour-supplying households which

lease in land and become organisers of production. If there is a decrease in the number of households operating land as compared to the number of households owning land, it would imply an increase in the size of the land being operated, also implying that some households may want to reap scale advantages or reflecting the presence of the rich peasantry. This would imply a potential increase in the demand for labour. On the other hand, if there is an increase in the number of households operating land as compared to the number of households owning land, it would imply an increase in the number of pure tenants or the C_2 peasantry in the economy. This might lead to a decrease in the demand for labour as the labour-supplying households would be converting themselves into part producers and internalising labour demand. Under a completely formed labour market, the households would be separated into the C_1 and C_4 classes. Under conditions when the market is not well-formed, there would be a dominant presence of the C_2 and C_5 households. An increasing presence of C_2 household would imply that labour-supplying households are internalising their demand for labour, if not completely, at least partly. A higher presence of households in the C_2 category implies that a larger number of households are operating land. The operation of land by households implies that the households either own land and/or are leasing in land. If the households are leasing in land, one would expect the presence of C_5 households in the village.

Table 4.3

Classification of Households in the Farm Sector and Non-farm Sectors in the two villages

Initial Distribution	Badarala	Velagapalli
(A) Farm Sector (Owned Land)	No.	No.
Landed Households	112	29
Landless Households	40	36
Non-Farm Sector Households	20	70
Total	172	135
(B) Evolving Distribution *(Farm Sector Operated Land)*		
Cultivators	116	52
Landless Households	36	13
Non-Farm Sector Households	20	70
Total	172	135

Source: Field Survey, 2010.

As regards to the initial structure in Badarala village, 88.37 per cent of all rural households are in the farm sector while 11.63 per cent are in the non-farm sector. While in Velagapalli village, the farm sector has a smaller share and accounts for 48.14 per cent of the households. The non-farm sector is dominant, comprising of 51.85 per cent of the households. As regards to the farm sector in Badarala village, the landed households form 73.68 per cent of all farm households while landless labour households form 26.31 per cent of the farm households. In the case of Velagapalli village, on the other hand, the landed households form 44.61 per cent of the farm households and the landless households form 55.38 per cent of the total farm households. The initial allocation of households in the two villages in terms of the farm and non-farm sectors shows significant differences. The wet village has a higher share of non-farm sector households as compared to the dry village. In addition, the landed households in Badarala village form a higher share of farm households as compared to Velagapalli village.

If one looks at the evolving rural structure, Badarala village witnessed a marginal increase in the proportion of land-operating households (an increase by four households) while Velagapalli village witnessed a significant increase in the proportion of land-operating households, from 29 to 52 households. In Badarala village, there was decrease in the number of landless labour households by four households and a simultaneous decline by four households and an increase of four households that are operating land. However, in Velagapalli village, there was a significant decrease in the number of households in the farm sector but not operating land, from 36 to 13. While the internal composition of the farm sector did not witness a major change after re-allocation in Badarala village, that in Velagapalli village did exhibit a major change, with an increase in the proportion of cultivators in the economy (see Table 3).

4.3 Distribution of Households in terms of Labour-supplying and Labour-demanding Households in the two villages

Households in the farm sector are distributed between labour-supplying and labour-demanding households. The present section presents the allocation in terms of two classifications namely labour based and land based classification. In case of labour based classification one is clearly able to differentiate labour-demanding and labour-supplying households in terms of their allocation of labour time. While from land based classification a

straight method of classification into labour-demanding and labour-supplying households is not possible as was raised in the last chapter. Let us first consider labour based classification of households.

Table 4.4
Distribution of Households Over Classes and Land Owned and Operated in the Surveyed Villages

(Land in Acres)

Classification	Badarala			Velagapalli		
	No.	Owned Land	Operated Land	No.	Owned Land	Operated Land
C_1	29 (16.86)	0	0	9 (6.66)	0	0
C_2	51 (29.65)	84.44 (14.22)	152.44 (21.16)	31 (22.96)	6.02 (4.93)	60.32 (40.55)
C_3	20 (11.62)	0	0	70 (51.85)	0	0
C_4	60 (34.88)	346.5 (58.36)	444 (61.63)	18 (13.33)	51.55 (42.22)	69.95 (47.02)
C_5	12 (6.97)	162.8 (27.42)	124 (17.21)	7 (5.18)	64.52 (52.85)	18.5 (12.44)
Total	172 (100)	593.74 (100)	720.44 (100)	135 (100)	122.09 (100)	148.77 (100)

Note: Figures in brackets are percentages to the total.
Source: Field Survey, 2010.

The two villages have different structures in terms of households in the farm and non-farm sector as also the distribution of households in the farm sector. The proportion of pure labour-supplying households (C_1) is different in the two villages. Badarala village has 16.86 per cent of pure labour-supplying households while the corresponding figure in Velagapalli village is 6.66 per cent. The percentage of households that supply labour and organise production (C_2) is 29.65 per cent in Badarala and 22.96 per cent in Velagapalli. These households own nearly 14.22 per cent of the land and operate 21.16 per cent of the land in Badarala, while they own only 4.93 per cent of the land but operate 40.55 per cent of the land in Velagapalli. The main labour-demanding households are those that demand labour and do not supply labour but may use their family labour (C_4). These households comprise 34.88 per cent of the total number of households and own 58.36 per cent of the total land in Badarala. The C_4 category households have increased the extent of land under cultivation to 61.63 per cent. In Velagapalli, the C_4 category households form only 13.33 per cent of the total number of households and own 42.22 per cent of the total land. These households have increased their landholdings to 47.02 per cent. Another class/group of labour-demanding households include those which land but either do not cultivate it themselves or cultivate it

but only in a supervisory role (C_5). In Badarala village, such households account for 6.97 per cent of the total number of households and own 27.42 per cent of the land. However, the land operated by this group has decreased to 17.21 per cent over time. Velagapalli village has also witnessed the same trend, with the proportion of land being operated by this group decreasing to 12.44 per cent from 52.84 per cent (share of land owned by these households) by these households (see Table 4.4).

Table 4.5
Rural Non-farm Employment sector in two villages (C_3 Category)

Traditional RNF	Badarala	Velagapalli	Modern RNF	Badarala	Velagapalli
Toddy Topper/ Goat Rearing	4	0	Mason	0	2
Dhobi/Barber	0	2	Tailoring	0	3
Carpentry/Broom stick making	7	1	Rickshaw Puller/Auto	0	32
Priest	1	0	Construction worker	0	6
Total	12	3	painter	0	4
			Migrate workers	0	8
			Hotel worker	0	1
			Petty Business	3	1
			Private Employ	10	30
			Govt Employ	0	9
			Total	13	96

Source: Field Survey, 2010.

The C_3 category households are non-farm sector households. Rural non-form labour households in the two villages are as follows Badarala (dry village) 20 (11 per cent) and Velagapalli (wet village) 70 (52 per cent). But it has been noticed that in Badarala village households are mostly engaged in traditional RNFS works like tapping toddy which is a caste based work for Gowda (BC) community, goat rearing, dhobi, barber, carpentry, broomstick making and priest-hood. The Velagapalli villagers are more engaged in to modern RNFS. One can say that wet village households are mostly engaged in rural non-farm activities in intra village works like that of painters, hotel workers, private employ, petty business, mason and construction work and outside the village and mostly migrated to Singapore and Dubai also for non-farm activities. In Velagapalli village backward communities (BC) are working as rickshaw-pullers and auto drivers as well (see Table 4.5).

Table 4.6
Distribution of Households across Different Land Based Class and their Ownership and Operational Landholding in the Two Study villages (Land in Acres)

	Badarala				Velagapalli			
Size of land Holding	Owned land		Operated land		Owned land		Operated land	
	No. of HHs	Area	No. of HHs	Area	No. of HHs	Area	No. of HHs	Area
Landless	60	0	56	0	106	0	83	0
Marginal	52	72.44 (12.20)	29	38.94 (5.40)	16	16.57 (13.57)	26	30.27 (20.34)
Small	30	118.5 (19.95)	40	144 (19.98)	7	25.07 (20.53)	19	67.97 (45.64)
Semi-Medium	16	128 (21.55)	30	237 (32.89)	4	31.5 (25.80)	6	39.1 (26.28)
Medium	9	140.8 (23.71)	13	190.5 (26.44)	1	11.5 (9.41)	1	11.5 (7.73)
Large	5	134 (22.56)	4	110 (15.26)	1	37.45 (30.67)	0	0
Total	172	593.74 (100)	172	720.44 (100)	135	122.09 (100)	135	148.77 (100)

Note: No. of HHs implies the number of households, and the figures in brackets are percentages to the total.
Source: Field Survey, 2010.

The reported land owned in Badarala village and Velagapalli village is less than the reported land operated. The difference is significant in case of Badarala village being at 127 acres while the difference for Velagapalli is 26 acres. One possible explanation could be under-reporting of land owned but maybe actual reporting or over reporting of land operated. One possible explanation for this feature could be the land reforms legislations. Another possible explanation could be the reflection of the methodology of the survey. Here the census data was collected from all the households residing in the village and households owning land in the village but staying outside the village do not become part of the survey. If there are households who stay outside but lease out their land to households in the village then there will be a difference between the land owned and land operated. Both the villages have significant extent of land which is leased, but in case of Badarala village the differences between the extents of land leased out and leased in is significant while this is not true for Velagapalli. In case of Badarala, the extent of land leased-in is around 73 acres while the extent of land leased-out is 28 areas, implying the possibility that there is land owned by households who are located outside the village but leasing out the land. For Velagapalli, the extent of land leased out is 46 acres while the extent of land leased in 54. So in this village

the extent of land owned by outsiders who are leasing out to households in the village might be less than in the case of Badarala.

The two villages show stark differences in the land owned and operated over size groups. Both the villages show significant proportion of landless labour households. In Badarala village the share of landless labour households is 34 per cent while 78 per cent in Velagapalli village. The high proportion of landless labour arises due to the inclusion of households who are landless but have employment in the non farm sector. In case of Badarala the proportion of households depending only on non farm sector for employment is 20 while in case of Velagapalli they are nearly 70 households. So the effective landless labour household in Badarala is 23 per cent while for Velagapalli it is 26 per cent. But if one identifies landless in terms of operation of land, the proportion reduces to 20 per cent for Badarala and is 9 per cent for Velagapalli. The significant decline in the proportion of landless labour households for Velagapalli implies that land less households could be entering the tenancy market and accessing land. In other words, tenancy is a significant option for labour supplying households to earn income in Velagapalli. There is a decrease in land owned by marginal land holding in Badarala village and an increase in the land owned by this category of households in the Velagapalli village. So these sections of the households may be leasing out land in Badarala village but are leasing in land in Velagapalli village. In case of small farmers there is no difference between leasing in and out in Badarala village but in case of Velagapalli there is a significant increase in land operated implying the small farmers could be a major source of leasing-in, in the Velagapalli village. The semi-medium farmers have increased their land under operation in Badarala village but not in Velagapalli village. The large farmers witnessed a significant decline in their share of land operated in the two villages. The main gainers of land in Badarala village are the semi-medium farmers, while in Velagapalli village there is a significant decline in the number of small farmers (see Table 4.6).

Table 4.7
Land Gini-coefficient ratios from two villages

Distribution	Badarala	Velagapalli
Owned	0.52	0.58
Operated	0.44	0.36

Source: Field survey, 2010.

The Gini-coefficient ratios help to understand the land disparity among the land owners from two villages. In Badarala village, owned land disparity is low compared to the Velagapalli village. Whereas with regard to operated land, greater disparities/inequalities are observed in Badarala village than in Velagapalli. Rural land inequalities have been observed more in Velagapalli village than in Badarala among the owned landowners. However, among operated landowners inequalities are more in Badarala than in Velagapalli village (see Table 4.7).

Table 4.8
Distribution of Households mobility over Owned land and Operated land in the Surveyed Villages

	Operated Land Composition to Badarala						
Owned Land	Landless	Marginal	Small	Semi-Medium	Medium	Large	Total
Landless	49	3	6	1	1	0	60
Marginal	3	25	15	8	1	0	52
Small	2	0	18	6	4	0	30
Semi-Medium	1	1	1	12	1	0	16
Medium	1	0	0	3	5	0	9
Large	0	0	0	0	1	4	5
Total	56	29	40	30	13	4	172
	Operated Land composition to Velagapalli						
Landless	79	17	10	0	0	0	106
Marginal	3	9	3	1	0	0	16
Small	1	0	5	1	0	0	7
Semi-Medium	0	0	0	4	0	0	4
Medium	0	0	0	0	1	0	1
Large	0	0	1	0	0	0	1
Total	83	26	19	6	1	0	135

Source: Field Survey, 2010.

The mobility of peasants is presented based on land based classification. The Badarala farmers or peasants move from one size of land to another size of land. In Badarala village 49 households are landless. In the owned land category the total number of landless households are 60, whereas operated land category their number has declined to 56, which means 4 landless households are taking tenancy which belong to the small farmers.

In the size of classification, the marginal farming households are 52 in number in the owned land category and in the operated land households category the number is 29, which means 23 households are giving land to tenancy as leased out. One could say that in operated land category, small and semi-medium households are taking land from the marginal farmers.

The number of small farmers' household in the owned land category is 30, where in operated land category their number has increased to 40, which means small farmers are taking tenancy from the semi-medium and medium farmers. The number of Semi-medium farmers' households is 16 in the owned land category and in operated land category their number has increased to 30 households, which means 14 households are taking tenancy and cultivating the land. These groups are small and semi-medium size holding groups.

And even the number of medium scale farmers' households in the owned land category is 9, where in the operated land category their number has increased to 13, which implies that additional 4 households have entered the leased market. Those households are semi-medium and medium land size category. Large scale farmer's household's position is different compared to the marginal, small, semi-medium and medium farmers. The Large scale farmers owned land category 5. When it comes to the operated land category their position has declined to 4 in Badarala village. One can say that large scale farmers are leasing out land to the medium and other scale farmers.

In Velagapalli village the number of landless households is 106 (out of 135 households) in owned land category but in the operated land category 83 households are registered. This means 23 landless households are taking tenancy from the marginal and small farmers households. In marginal farmers category owned land households are 16 and it comes to the operated land category to 26 households are registered, which means the 10 households are taken as tenancy.

The number of small farmers' is 7 in the owned land category and in the operated land category 19, which means in the operated land category the number of households have increased. One can say that tenancy is taking place from the part of the semi-medium farmers.

In case of semi-medium farmers owned land category has 4 households registered, but when it comes to the operated land category 2 more households are registered compared to that of the owned land category. Those households are marginal and small households. There is one household registered in the owned land category which do not cultivate land but lease it out.

In Badarala and Velagapalli villages marginal, small, semi-medium farmers are taking the land for cultivation. Where in Badarala village the medium farmers' group is taking land for cultivation, in Velagapalli village they do not take the land by medium farmers group. One can say that in Velagapalli village landless households are taking the highest share of land for cultivation as tenancy (see Table 4.8).

Table 4.9
Distribution of Households over Classes and Size of holding in Operated land wise in the Surveyed villages

Classification	Landless	Marginal	Small	Semi-Medium	Medium	Large	Total
Badarala							
C_1	29	0	0	0	0	0	29
C_2	1	23	19	7	1	0	51
C_3	20	0	0	0	0	0	20
C_4	1	5	20	22	12	0	60
C_5	5	1	1	1	0	4	12
Total	56	29	40	30	13	4	172
Velagapalli							
C_1	9	0	0	0	0	0	9
C_2	0	20	11	0	0	0	31
C_3	70	0	0	0	0	0	70
C_4	0	6	7	4	1	0	18
C_5	4	0	1	2	0	0	7
Total	83	26	19	6	1	0	135

Source: Field Survey, 2010.

In Badarala village, out of the total 172 households, there is a total of 29 C_1 category households who are pure labour supplying households and hence their presence is absence in other operated land categories. Among C_2 category (mixed labour supplying households), there is a total of 51 households of which the majority of them are from marginal, small and semi-medium operated land households. This shows that the majority of the labour-supplying households in the operated land category are in the marginal, small and semi-

medium category, leasing in land in small amounts, while at the same time utilising the majority of their resources in the labour market as labour supplying households. C_2 category households utilise majority of their labour in the labour market as labour supplier than on their own operated land.

The C_3 category of households is non-farm sector households who are neither labour demanding nor supplying households. A total of 20 households are observed to be in this category in Badarala village. With reference to C_4 and C_5 category of households, who are labour demanding households, a majority of the labour-demanding households in the C_4 category are in the semi medium (22), small (20) and medium (12). However, in the C_5 category who are mixed labour demanding households and who in majority of cases lease out land, has a greater demand for labour than the large farmers. Hence, it can be inferred that labour demand is generated from the C_5 category of households. Another interesting point to be noted here is that leasing out of land is also more prevalent in the C_5 category as close to 45 per cent of the households in this category have leased out land in this village.

Similar trend of labour classification of households is observed in Velagapalli village with some minor modifications. In this village, there are 9 C_1 category of households who are pure labour-supplying households. With reference to $C_{2,}$ (mixed labour-supplying households) there are a total of 31 households of which majority of them are in the marginal and small operated land category. There is total of 70 C_3 category of households (diversified households) in this village, implying the predominance of non-farm sector in this village. This is primarily because of the fact that this village lies in the irrigated zone and hence, in the development zone. With reference to C_4 and C_5 category of households who are labour-demanding households it can be said that a majority of the labour-demanding households in the C_4 category are in the small, marginal and semi-medium categories suggesting a greater demand for labour emerging from them. However, in C_5 category in this village, the demand for labour is more from semi-medium and small farmers. An interesting observation made from this village is the absence of large farmers in the C_5 category and also the predominance of leasing out as close to 60 per cent of the households have leased out their land. From the above table it has been observed that in these two villages demand for labour is generated mainly from C_4 category of households rather than from C_5 category of households. Another interesting observation is that though there are more households

belonging to C_4 and C_5 category (labour-demanding households) in Badarala village (72 households) than in Velagapalli (25 households), demand for labour is more in Velagapalli due to its location in the irrigated zone and also due to the cultivation of paddy in two seasons (see Table 4.9).

4.4. Characteristics of Classification of the Labour-supplying and Labour-demanding Households

This section describes the socio-economic and demographic characteristics of the labour based classified households in the two villages. This section explains the caste wise distribution of households, level of literacy, occupational structures, cropping patterns and sources of credit in the two study villages namely Badarala and Velagapalli.

Table 4.10
Distribution of Households over Classes and Caste in the Surveyed Villages

	Badarala				Velagapalli			
Class/group	OC	BC	SC	**Total**	OC	BC	SC	**Total**
C_1	4 (13.79)	18 (62.07)	7 (24.14)	**29 (100)**	3 (33.33)	2 (22.22)	4 (44.44)	**9 (100)**
C_2	9 (17.65)	36 (70.59)	6 (11.76)	**51 (100)**	7 (22.58)	14 (45.16)	10 (32.26)	**31 (100)**
C_3	6 (30.00)	13 (65.00)	1 (5.00)	**20 (100)**	24 (34.29)	29 (41.43)	17 (24.29)	**70 (100)**
C_4	50 (83.33)	10 (16.67)	0	**60 (100)**	14 (77.78)	2 (11.11)	2 (11.11)	**18 (100)**
C_5	10 (83.33)	2 (16.67)	0	**12 (100)**	5 (71.43)	0	2 (28.57)	**7 (100)**
Total	79 (45.93)	79 (45.93)	14 (8.14)	**172 (100)**	53 (39.26)	47 (34.81)	35 (25.93)	**135 (100)**

Note: Figures in brackets are percentages to the total.
Source: Field Survey, 2010.

The above table provides information on the, caste-wise distribution of households in the two study villages. There is total of 172 and 135 households in Badarala and Velagapalli villages respectively. Both OC and BC category of households are in equal number (79) in Badarala village. Within the OC category in Badarala village Kammas are the predominant caste while among BC Gowdas are dominant. In case of Velagapalli, among OC community predominant castes are Kapu, Velama and Rajus, while within the BC community Thurpu Kapus followed by Koppu velama are more in number. Absence of scheduled tribes (ST) has been observed in these two villages. With reference to labour wise classification of different castes in the two villages, we can say that within C_1 category of households (pure

agricultural labour supplying households) in Badarala village majority of the households are from BC (18), followed by SC (7) and OC (4) while in Velagapalli majority of households are from SC (4), followed by OC (3) and BC (2). With regard to C_2 labour supplying households in Badarala village majority of households are from BC (36), followed by OC (9) and SC (6), while in Velagapalli majority are from BC (14), followed by SC (10) and OC (7). For C_3 category of households who are predominantly into rural non-farm activities, majority households are from BC followed by SC and OC in both the villages. This is because of the predominance of caste based occupations among BC's in both the villages. It is interesting to note that traditional non-farm activities like toddy tapping, goat rearing, dhobi, carpentry etc are the principal occupations in Badarala village, while in Velagapalli prevalence of modern rural non-farm activities like mason, construction workers, painter, hotel worker, rickshaw-puller, auto-driver, petty business, private and government employees have been observed.

With reference to labour demanding C_4, majority of the households are from OC and followed by BC in both the villages. Absence of SC household in this category has been observed in Badarala village. Among C_5 mixed labour demanding households in Badarala village majority are from OC followed by BC, while in Velagapalli majority are from OC followed by SC. From the above we can infer that the majority of the labour demanding households are from the OC and BC communities while major labour suppliers are from BC followed by SC in both the villages (see Table 4.10).

The structure of village economy is classified into three sectors (a) Primary (b) Secondary and the (c) Service Sector. Primary sector is further classified into cultivator and agricultural labourer. The proportion of cultivators in Badarala village (37.53 per cent) than in Velagapalli (18.59 per cent), implying that village with less or no irrigation facility (dry village) has more proportion of cultivators than village with irrigation. It can be noted here that in both the villages the absence of cultivators can be found among C_1 and C_3 who are pure agriculture labourer and pure non-farm sector persons.

It is interesting to note that the percentage of cultivators is highest among C_4 and C_2 category of persons who are pure labour demanding and landed labour household persons. The proportion of cultivators among C_5 group of persons who are capitalist farmers is lesser than

other cultivators in both the villages due to the prevalence of leasing out and absentee landlordism coupled with their shifting in to service sector (government and private sector employment).

Table 4.11
Distribution of Households over Classes and Occupation in the Surveyed villages

Class	Cultivators	Agricultural Labourers	Traditional RNF	Modern RNF	Service Sector	Total
Badarala						
C_1	0	70 (38.88)	0	0	0	70 (17.63)
C_2	61 (40.94)	85 (47.22)	17 (54.84)	4 (26.67)	2 (9.09)	169 (42.57)
C_3	0	15 (8.33)	11 (35.84)	5 (33.33)	11 (50.00)	42 (10.58)
C_4	76 (51.01)	9 (5.00)	1 (3.23)	4 (26.67)	3 (13.64)	93 (23.43)
C_5	12 (8.05)	1 (0.56)	2 (6.45)	2 (13.33)	6 (27.27)	23 (5.79)
Total	149 (100)	180 (100)	31 (100)	15 (100)	22 (100)	397 (100)
Velagapalli						
C_1	0	13 (10.40)	0	0	3 (3.45)	16 (4.51)
C_2	42 (63.64)	57 (45.60)	9 (75.00)	4 (6.15)	10 (11.49)	122 (34.37)
C_3	0	54 (43.20)	3 (25.00)	57 (87.69)	50 (57.47)	164 (46.20)
C_4	16 (24.24)	0	0	3 (4.62)	19 (21.84)	38 (10.70)
C_5	8 (12.12)	1 (0.80)	0	1 (1.54)	5 (5.75)	15 (4.23)
Total	66 (100)	125 (100)	12 (100)	65 (100)	87 (100)	355 (100)

Note: Figures in brackets are percentages to the total.
1. Traditional RNF: Toddy tapper/ Goat rearing, Dhobi/Barber, Carpentry/Broomstick making and Priest
2. Modern RNF: Mason, Tailoring, Rickshaw puller/Auto, Construction worker, Painter, Migrate worker Hotel worker
3. Service Sector: Private Employees, Pensioners and Government Employees.
Source: Field Survey, 2010.

Among agricultural labourers C_1 category of persons is the highest in Badarala village, followed by C_2 category. However, in Velagapalli the proportion of agriculture labourers is more among C_2 and C_3 category. It is interesting to note that in Velagapalli village a substantial number of persons from the pure non-farm sector labour persons i.e C_3 are engaged as agricultural labourers. This is due to the participation of female labourers from this category in agriculture activities.

With reference to traditional rural non-farm activities, C_2 category of persons are highest followed by C_3 in both the villages. This is due to the presence of traditional backward caste people like toddy tapper, barber etc who while following their traditional caste occupation also engage in agricultural activities as they hold land. However, for modern non-farm activities C_3 category persons are more followed by C_2 category in both the villages.

Even service sector employment is also dominated by C_3 category of persons in both the villages followed by C_4 and C_5. It has been observed that persons from C_3 category are now being engaged in both government and private employment opportunities and hence, their share in service sector is substantially higher in both the villages. There has been a greater shift of labour demanding household persons from cultivation to activities other than agriculture related in both the villages. In Badarala, it has been observed that out of the total 23 persons in the C_5 category only 12 are into cultivation, while the number of persons have shifted to service and modern non-farm activities are 6 and 2 respectively. This shift has been particularly observed in Velagapalli village as both the labour demanding C_4 and C_5 households have shifted to service and modern non-farm activities. This change has been noted more among the C_4 category where the highest proportions of persons are engaged in service sector than in cultivation (see Table 4.11).

Table 4.12
Distribution of households over Classes and Education attainment levels in the Surveyed villages

Class	Illiterate	Below Primary	Primary	Secondary	Higher Secondary	Technical	Graduation	P.G	Ph.D	Total
Badarala										
C_1	42	5	33	32	2	1	0	0	0	115
C_2	76	16	58	65	7	3	3	1	0	229
C_3	17	9	21	21	4	1	4	0	0	77
C_4	42	17	56	74	14	13	12	0	1	229
C_5	5	1	6	18	5	8	8	5	1	57
Total	182	48	174	210	32	26	27	6	2	707
Velagapalli										
C_1	7	5	7	10	0	1	0	0	0	30
C_2	26	14	33	41	6	7	3	0	0	130
C_3	54	33	78	94	15	8	10	0	1	293
C_4	7	7	10	34	8	5	6	0	0	77
C_5	0	1	9	9	3	0	5	0	0	27
Total	94	60	137	188	32	21	24	0	1	557

Source: Field Survey, 2010.

Education opportunities are very much limited in both the study villages, as there is presence of just one below primary school (Anganwadi School) and one primary school in both the villages. However, the structure of literacy levels in the two villages is different from each other. Literacy rate is high in Velagapalli village (83.1 per cent) than in Badarala (74.2 per cent) as the presence of irrigation facilities in Velagapalli has created more resources to pursue higher education. Also while people from Badarala have to travel 9 km for secondary school and further 40 km (to Eluru) or 25 km (Chintalapudi) in pursuance of secondary education, graduation or post graduation, Velagapalli has access to all of these facilities within 4 km at Ganapavaram mandal.

The above table describes about the attainment of education levels among different labour category of households in the two study villages. It can be observed that education levels among C_1 and C_2 category in Badarala village are predominantly limited to primary and secondary education. There has also high level of literacy among the categories of labour supplying households. However, C_2 category is better off between the two due to progression to technical education and graduation levels, which is absent in C_1 category. With reference to C_3 category of households who are primarily non-farm labour households, improved level of education attainment has been observed though the literacy rate has remained very low despite progression to higher secondary and graduation levels. The attainment of higher education levels is more among labour-demanding households C_1 and C_2 as we can find more number of graduates and less illiterates in these categories. Presence of post graduates and doctoral candidates (Ph.D) has also been observed in these two categories of households. Similar trend with reference to the different labour based household categories and education levels can be observed even in Velagapalli village; however, through the level of illiteracy is much lower than in Badarala village, at the same time the progression to higher technical and graduate studies is much higher than in Badarala. It is interesting to note that there is 100 per cent literacy among C_5 category of households in Velagapalli (see Table 4.12).

Table 4.13

Distribution of Households over Classes and Available Sources of Credit in the Surveyed villages

Class	No-Loans	Banks	Co-Operatives	Landlords/ Money-lenders	Relatives/ Friends	SHG	Multi group	Total
Badarala								
C_1	9 (31.83)	0	0	18 (62.06)	0	1 (3.44)	1 (3.44)	29 (100)
C_2	2 (3.92)	15 (29.41)	1 (1.96)	6 (11.76)	1 (1.96)	1 (1.96)	25 (49.01)	51 (100)
C_3	7 (35)	0	0	12 (60)	0	1 (5)	0	20 (100)
C_4	4 (6.66)	27 (45)	0	6 (10)	0	0	23 (38.33)	60 (100)
C_5	3 (25)	9 (75)	0	0	0	0	0	12 (100)
Total	25 (14.53)	51 (29.65)	1 (0.58)	42 (24.41)	1 (0.58)	3 (1.74)	49 (28.48)	172 (100)
Velagapalli								
C_1	8 (88.88)	0	0	1 (11.11)	0	0	0	9 (100)
C_2	9 (29.03)	3 (9.67)	5 (16.12)	12 (38.70)	2 (6.45)	0	0	31 (100)
C_3	44 (62.85)	0	1 (1.42)	20 (28.57)	1 (1.42)	3 (4.28)	1 (1.42)	70 (100)
C_4	1 (5.55)	12 (66.66)	0	4 (22.22)	0	0	1 (5.55)	18
C_5	3 (42.85)	2 (28.57)	1 (14.28)	1 (14.28)	0	0	0	7 (100)
Total	65 (48.14)	17 (12.59)	7 (5.18)	38 (28.14)	3 (2.22)	3 (2.22)	2 (1.48)	135 (100)

Note: (i) SHG- Self Help Group
(ii) Figures in brackets are percentages to the total.
Source: Field Survey, 2010.

The sources of credit are classified into (a) formal and (b) in-formal. Formal credit sources are banks, co-operative societies, while informal credit sources are landlords/money-lenders, relatives/friends and self-help-groups. Source of credit, nature of credit, purpose of credit and interest rate are different in both the villages. The dependency on credit is far lesser in Velagapalli than in Badarala village as only 70 households in Velagapalli have taken credit compared to 147 in Badarala. Dependency on landlords/money-lenders for credit is more among C_1 category of households in both the villages, also purpose of credit is more due to personal reasons like construction of house, social obligations like marriage, and for survival

purpose. Rate of interest for these types of loans for these category of households vary from ₹ 1-2. However, for the labour-demanding households of C_4 and C_5, purpose of credit is mainly for capital investment on agriculture and is more dependent on formal sources like banks.

Dependency on multi-groups and banks in more in among C_2 category of households in both the villages. Among this mixed labour-supplying households (C_2 category), people with own land are more dependent on banks while people who have leased in land for cultivation are more dependent on multi groups (SHGs, landlords/money-lenders, friends/relatives etc). Dependency of C_3 on landlords/money-lenders is almost absolute in both the villages as there is no other access to credit available for them. With reference to labour-demanding households of C_4 and C_5, dependency for credit is more on formal credit source such as banks as they all have land documents necessary for generating prime credit. With reference to interest rates in Badarala village, rates range between ₹ 0.75 to ₹ 1.50 for formal sources and to ₹ 2 to ₹ 6 charged by informal sources. Even though the nature of credit sources in Velagapalli is similar to Badarala, rate of interest differs between these villages as the formal interest rate ranges from ₹ 0.60 to ₹ 1.25, while for informal sources it ranges from ₹ 2 to ₹ 4.00 (see Table 4.13).

Table 4.14

Distribution of Households over Classes and Agriculture Related Instruments in the Surveyed villages

Classification	Badarala					Velagapalli				
	Sprayer	Plough	Tractor	sprayer & Tractor	Total	Sprayer	Tractor	Tiller	Sprayer & Tractor	Total
C_1	0	0	0	0	0	0	0	0	0	0
C_2	1 (33.33)	2 (66.66)	0	0	3 (100)	0	0	0	0	0
C_3	0	0	0	0	0	0	0	0	0	0
C_4	0	2 (20.00)	2 (20.00)	3+3 (60.00)	10 (100)	1 (20.00)	1 (20.00)	1 (20.00)	1+1 (40.00)	5 (100)
C_5	0	0	2 (40.00)	2+2 (60.00)	4 (100)	2 (100)	0	0	0	2 (100)
Total	1 (5.26)	4 (21.05)	4 (21.05)	10 (52.63)	19 (100)	3 (42.85)	1 (14.28)	1 (14.28)	2 (28.57)	7 (100)

Note: Figures in brackets are percentages to the total.
Source: Field Survey, 2010.

The above table explains how different agricultural instruments are being used for different type of labour household categories in the production purposes. From the ownership of different instruments the capital expenditure incurred by the farmers can be easily inferred. In both these villages it has been observed that both C_1 and C_3 category of households have not utilised any agricultural instruments as they have not entered in to the land market as cultivators of any sort. However, in Velagapalli even C_2 categories of households are also found to be not using any agricultural instrument. Also it has been found out that in Badarala village which is not irrigated, prevalence of traditional instruments is more compared to the Velagapalli village where mechanisation has given way to traditional instruments. In Badarala village, among C_2 category of households prevalence of traditional instruments is noticed. However, among C_4 and C_5 more mechanisation is found in both the villages (see Table 4.14).

The below table 4.15 explain cropping patterns in the two study villages differ from one another, while Badarala which is un-irrigated multiple cropping can be observed, but in Velagapalli which is under the irrigation zone, is a mono-crop village with paddy being the single crop. Badarala village is irrigated mainly through bore well and tank irrigation. Velagapalli is irrigated by *Undi,* government canal which has also resulted in predominance of paddy cultivation.

The total owned land in Badarala village is 593.74 acres, while the operated land is 720.44 acres, while in Velagapalli it is 122.09 acres and 148.77 acres respectively. During kharif season more than 95 per cent of the area under Badarala village is under paddy cultivation, with some minor cultivation of tobacco, banana and sunflower. During rabi season maize is cultivated as predominant crop followed by coconut, cocoa and palm oil. With reference to Velagapalli as discussed earlier paddy is the predominant crop in both the seasons.

Table 4.15
Classes over the Cropping Pattern in the Two Study Villages (Land in Acres)

	Badarala																		Velagapalli			
	Paddy		Banana		Sunflower		Sugarcane*		Tobacco		Maize		Coconut **		Cocoa **		Palm Oil **		Paddy			
Class	No.	Area	No.	Area	No.	Area	No.	Area	No.	Area	No.	Area	No.	Area	No.	Area	No.	Area	No.	Area	No.	Area
C_1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
C_2	28	55 (34.81)	1	1 (33.33)	1	2 (100)	0	0	0	0	50	134 (33.92)	3	6 (2.83)	2	5 (2.53)	1	2 (2.78)	31	60.3 (40.55)	31	60.3 (40.55)
C_3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
C_4	26	94 (59.49)	1	2 (66.67)	0	0	5	10.5 (100)	1	6 (100)	49	248 (62.78)	16	120 (56.60)	13	107 (54.04)	10	46 (63.89)	18	69.9 (47.01)	18	69.9 (47.01)
C_5	2	10 (6.33)	0	0	0	0	0	0	0	0	4	14 (3.54)	5	86 (40.57)	5	86 (43.43)	2	24 (33.33)	3	18.5 (12.44)	3	18.5 (12.44)
Total	56	158 (100)	2	3 (100)	1	2 (100)	5	10.5 (100)	1	6 (100)	103	395 (100)	25	212 (100)	20	198 (100)	13	72 (100)	52	148.7 (100)	52	148.7 (100)

Note: (i)*refers to long duration Crops, ** mixed crops.
(ii) Figures in brackets are percentages to the total.
Source: Field Survey, 2010.

The mixed labour supplying households (C_2 category) are predominantly into cultivation of food grains like paddy, followed by banana and maize in Badarala village. However C_4 category households are mainly into cultivation of maize, followed by long gestation crops like coconut, cocoa and palm oil. Maize is a major crop in Badarala village; maize companies provide the farmers with required seed and also collect the output from them at the time of harvest. Peasants (or farmers) often sell most of their output of their fields only in their own village. With reference C_5 category of households, cultivation of long gestation of crops like coconut, cocoa and palm oil is more predominant than any other households.

Velagapalli village is predominately dominated by paddy cultivation by all the labour household categories; however, the village has also seen shifting of small and marginal farmers to aqua culture (see Table 4.15).

Table 4.16
Average Output Produced by Different Classes in the Two villages

	Badarala		Velagapalli	
Classification	Kharif	Rabi	Kharif	Rabi
	Paddy	Maize	Paddy	Paddy
	(75 kg)	(100 Kg)	(75 kg)	(75 Kg)
C_1	0	0	0	0
C_2	26.69	25.46	28.97	39.45
C_3	0	0	0	0
C_4	27.56	27.64	29.17	39.18
C_5	26	24.85	31.35	41.35
Stdev	0.78	1.47	1.32	1.18

Note: Stdev-Standard Deviation.
Source: Field Survey, 2010.

The below table can infer the different average output produced in the two villages and their outputs with reference with different landed households. In Badarala village, paddy is cultivated in kharif season and maize in rabi; whereas in Velagapalli, paddy is predominant in both the seasons. However, Badarala village has multiple crops like paddy and also commercial crops like banana, sunflower, sugarcane, tobacco, maize, coconut, cocoa and Palm oil; while Velagapalli cultivates only single crop paddy. But for better analysis purpose we have considered only paddy and maize for Badarala and paddy for Velagapalli.

The average output of C_2 households (mixed labour-supplying households) is 26.69 per acre in Badarala village during kharif season, while the total acres under cultivation of this class are 54.5 acres. With reference to C_4 category of households the average output is 27.56, while the total land under this class is 93.5 acres. The C_4 category, that is labour-demanding households have a higher average per acre output than C_2 and C_5 category households during both kharif and rabi seasons.

With regard to Velagapalli village, the average output of C_5 (mixed labour-demanding household) category of household is 31.35, followed by C_4 and C_2 households. However during rabi season the output of C_5 category is the highest with 41.35, followed by C_2 at 39.45 and C_4 (39.18). The average output of all the landed categories of households is more in Velagapalli village compared to Badarala village during both the seasons (see Table 4.16).

4.5. Conclusion:

The two villages have different structures in terms of households in the farm and non-farm sector and also in terms of the distribution of households in the farm sector. The proportion of pure labour-supplying households (C_1) is different in the two villages. Badarala village has 16.86 per cent of pure labour-supplying households while the corresponding figure in Velagapalli village is 6.66 per cent. The number of households supply labour and organise production (C_2) is 29.65 per cent in Badarala and 22.96 per cent in Velagapalli. These households own nearly 14.22 per cent of the land and operate 21.16 per cent of the land in Badarala, while they own only 4.93 per cent of the land but operate 40.55 per cent of the land in Velagapalli. The main labour-demanding households are those that demand labour and do not supply labour but may use their family labour (C_4 type of households). These households comprise 34.88 per cent of the total number of households and own 58.36 per cent of the total land in Badarala. These households have increased the extent of land under cultivation to 61.63 per cent. In Velagapalli, these households form only 13.33 per cent of the total number of households and own 42.22 per cent of the total land. These households have increased their landholdings to 47.02 per cent. Another class/group of labour-demanding households include those which land but either do not cultivate it themselves or cultivate it but only in a supervisory role (C_5 type of households). In Badarala village such households account for 6.97 per cent of the total number of households and own 27.42 per

cent of the land. However, the land operated by this group has decreased to 17.21 per cent over time. Velagapalli village has also witnessed the same trend, with the proportion of land being operated by this group decreasing to 12.44 per cent from 52.84 per cent. If one considers C_3 households, Badarala village has a smaller share of households in the non-farm sector when compared to Velagapalli village. In addition, the dry Badarala village has traditional non-farm sector while Velagapalli village has modern rural non-farm activities.

The characteristics of households are also differentiated in to different groups/classes. In Badarala village the education attainment level is low compared to Velagapalli. But in terms of groups/classes wise segregation, the education attainment for primary and secondary level for C_1 and C_2 households' education is more or less same in two villages. However, the C_4 and C_5 category households are having higher level of education in the two study villages.

But in terms of credit sources, households from the Badarala village have taken high credit loans, compared to Velagapalli. The dependency of C_1 and C_3 category of households on landlords/ money-lenders is high in both the villages, however, C_2, C_4 and C_5 households are more dependent on banks and landlords/ money-lenders for credit in these two villages.

With regards cropping pattern, multi cropping pattern is predominant in Badarala village, while Velagapalli is predominantly mono crop. In terms of category/class wise classification, in Badarala village, majority of the C_2 category households majorly cultivate paddy and maize, but households belonging to C_4 and C_5 majorly cultivate commercial crops (long gestation crops) like coconut, cocoa and palm oil. In Velagapalli the mono crop which is being cultivated by all the category of households is paddy. With reference to output wise comparison, per acre output in Velagapalli village is high in comparison to Badarala village. With reference to class/group wise classification, output per acre of C_4 and C_5 category households is high when compared to C_2 category of households in both the villages.

CHAPTER - V

CHAPTER - V

CHOICES MADE BY LABOUR SUPPLY AND DEMAND HOUSEHOLDS: AN INVESTIGATION IN TWO VILLAGES

5.0 Introduction

In this chapter an attempt is made to presents the choices made by the labour demand and labour supply households in the labour market and provide a possible explanation for the choices made by the households. Given that the two villages have differences in their structure (allocation of households into labour demand and supply households), interactions in the different markets, in the natural conditions as well as the crops cultivated, here one is analysing the basis of choices made by the households. The choices that individuals make depend not only on the context in which they exist but also on the performance of the labour market. In addition, one would like to reflect if there is a tendency for the labour supply households to move to the labour market or do they search for alternate institutional arrangements to meet their subsistence. A movement to alternate institutional arrangements will constrain the formation of the labour market.

This chapter has been divided in to five sections. The first section presents the choices that are exercised by the labour-demand and labour-supply households. The second section presents the performance of the labour market in terms of wages and employment by different class/groups. Section three describes an explanation of the choices made by the households in the villages. The section four is a regression analysis trying to explain allocation of labour households over class. And final section consists of concluding remarks.

5.1 Options Available and Choice Exercised by Labour-Supplying and Labour-Demanding Households

As was presented in the earlier chapter, all households in the village were classified into pure labour supply households (C_1) partly or mixed labour supply household (C_2), and pure labour demand households (C_4) and partly or mixed labour demand household (C_5) and households who have partly diversified out of agriculture (C_3). The present analysis will be restricted to pure and partly labour supply households and pure and partly labour demand households as they form the main components of the rural labour market. Firstly, the choices

made by the labour-supply households are presented which is followed by the choices made by the labour-demand households.

5.1.1 Labour-supplying Households

A labour-supplying household is considered to have five different options to ensure its subsistence. One option could be to enter the labour market or what is also called the casual labour market and to sell their labour services to the labour-demanding households. In a market-oriented economy, the predominant option available to the individuals is to enter the casual labour market. A second option could be for the labour-supplying households to enter into a long-term labour contract with those demanding the use of the land. The long-term contract could be an attached labour contract or a contract for a permanent farm servant. The third option for labour-supplying households is to switch from labour supply to labour demand by leasing in land. Here, the labour demand could also be for family labour. A fourth option could entail the migration of labour outside the village economy. These migrations may be temporary, triggered as responses to the differences in the condition of demand and supply in different villages. A last option for the labour-supplying households may be to enter the rural non-farm sector. The choices that exist for a labour-supplying household to meet its livelihood needs are provided by the institutional context in which the individual operates. The actual option that the individual takes to meet the livelihood needs of his household depends on the resource position of the households and the constraints faced by the individuals. Thus, at the individual level, the option taken by the individual may not be a voluntary choice but may be distress-induced, whereas at the economy level, the impression is that labour-supplying households enjoy a voluntary choice. A well developed labour market is one wherein the labour-supplying households enter into the casual labour market if it provides a higher income than the other options or if in terms of choice, the dominant choice entails the entry of households into the casual labour market.

There are 80 households in the farm sector that are potential suppliers of labour and can enter the casual labour market to sell labour in Badarala village. These households are categorised in the class group of C_1 (29 households) and C_2 (51 households). In these households, only 29 households have entered the labour market, including 21 households from the C_1 group and eight households from the C_2 group. In the C_1 group, there are eight households that have a long-term contract with the labour-demanding households in the

village; while in the C_2 group, the households have no long-term contracts. The village has not witnessed any temporary migration of labour-supplying households. Labour-supplying households have the option of entering the land lease market and becoming land operator. This village has witnessed 23 lease market contracts, of which eight contracts involve pure tenants. In a different sense, 10 per cent of the labour-supplying households have leased in land and have partly internalised the demand for labour. In addition, a major share of the labour-supplying households own land 53.75 per cent or have leased in land 10 per cent and use their labour time in their own lands (see Table 5.1). In this village, 63.75 per cent of the households either own land or have leased in land, and in the process, they have partly internalised the demand for labour.

Table 5.1
Choice Exercised by Labour-supplying Households to Earn Livelihood in Two Surveyed Villages (Land in Acres)

Class	HHs	C L HHs	A L HHs	Owned Land		Tenancy		Pure Tenancy		Leased out		Pure Leased out		Mig.
				No.	Area	No.	Area	No.	Area	No.	Area	No.	Area	
Badarala														
C_1	29	21	8	0	0	0	0	0	0	0	0	0	0	0
C_2	51	8	0	43	84.44	23	73	8	24.5	3	5	2	4	0
Total	80	29	8	43	84.44	23	73	8	24.5	3	5	2	4	0
Velagapalli														
C_1	9	9	0	0	0	0	0	0	0	0	0	0	0	0
C_2	31	23	0	8	6.02	27	54.3	23	46.1	0	0	0	0	1
Total	40	32	0	8	6.02	27	54.3	23	46.1	0	0	0	0	1

Note: 'CL HH' refers to households participating in the casual labour market, 'AL HHs' refers to households with attached labour contracts, 'Mig.' refer to households witnessing migrations.
Source: Field Survey, 2010.

Velagapalli village has a smaller number (40) of labour-supplying households in the farm sector. All the nine households in the C_1 group have entered the casual labour market. There are no long-term contracts in the village. The dominant resource adjustment mechanism for the labour-supplying households is the entry into the land lease market. The village has 23 pure tenants or 57.5 per cent of the labour supplying households have leased in land and partly internalised the demand for labour in the households. In this village, only 20 per cent of the labour-supplying households own land while 57.5 per cent of the households have leased in land. Thus, in this village 77.5 per cent of the labour-supplying households are

operators of the land, while only one household has temporarily migrated to another village in search of employment.

The composition of labour-supplying households and the choices made by them are different in the two villages. The share of C_1 households in the labour-supplying households is higher in Badarala village (36.3 per cent) as compared to that in Velagapalli (22.5 per cent). The proportion of households owning land among the labour-supplying households is very high in the case of Badarala (53.7 per cent) as compared to Velagapalli (20 per cent). The share of households entering the casual labour market is 26.2 per cent in Badarala and 22.5 per cent in Velagapalli. In Badarala village, there are an equal number of households that have long-term contracts and that are pure tenants. While in Velagapalli village, there are no long-term contracts and a major share of the labour-supplying households is pure tenants. Thus, in one village, a higher share of labour-supplying households own land while in the other village, a large share of labour-supplying households have leased in land (see Table 5.1).

5.1.2. Labour-demanding Households

Labour-demanding households can be conceived to have three options to cultivate the land. One is to use casual labour contracts, the second is to use long-term contracts and the third option is to lease out their land. In Badarala village there are 72 households that are directly labour-demanding (in terms of casual labour or long-term contracts) or indirectly labour-demanding by leasing out the land. Of these 72 households, 69 own land while 3 are pure tenants that is, potential suppliers of labour which have got converted into labour-demanding households. All the land operators use casual labour, and that which is why one is presenting data on other forms accessed by the labour-demanding households to access labour. One of the important institutions used by the labour-demanding households to organise production is that of long-term contracts. There are 63 households comprised of either attached labours (43) or regular farm servants (20). As can be seen from Table 5.1, the number of labour-supplying households having long-term contracts in the village are 8, implying that 55 households from outside the village have long-term contracts with labour-demanding households in this village. Households in the C_4 category own 346.5 acres of land and have leased in 127.5 acres of land but have also leased out 28 acres, implying a net leasing in of 99.5 acres. These households use long-term contracts with labour-supplying households to

cultivate the land. The C_4 group of households use long-term contracts and casual labour market contracts for cultivation. These households are engaged in the net leasing in of land. The C_5 households total 12 in number and own 162.8 acres. Among these households, five are pure leasing out households, and the extent of land leased out by them is 27.8 acres. In addition, three more households are partly leasing out the land. The method of adjustments entails either using attached labour and/or casual labour in the cultivation process, or more importantly, using the tenancy market for adjustment.

In Velagapalli village, 25 labour-demanding households own 116.1 acres of land but operate only 88.5 acres of this land. Unlike Badarala village, where the land operated by the demand side households has increased, the land operated in Velagapalli has decreased. Other things remaining constant, a decrease in the land operated as compared to land owned implies a decrease in the demand for labour. Of these households, 21 own land and four are pure tenants.

Table 5.2
Options Taken up by Labour-demanding Households for Organising Production in the Two Surveyed Villages (Land in Acres)

Class	HHs	Owned Land		A L	RFL	Tenancy		Pure Tenancy		Leased Out		Pure Leased Out	
	No.	No.	Area	No.	No.	No.	Area	No.	Area	No.	Area	No.	Area
Badarala													
C_4	60	57	346.5	33	19	25	127.5	3	30	7	28	0	0
C_5	12	12	162.8	10	1	0	0	0	0	8	38.8	5	27.8
Total	72	69	509.3	43	20	25	127.5	3	30	15	66.8	5	27.8
Velagapalli													
C_4	18	14	51.55	3	0	6	18.4	4	9.80	0	0	0	0
C_5	7	7	64.52	2	0	0	0	0	0	6	46.02	4	7.57
Total	25	21	116.07	5	0	6	18.4	4	9.80	6	46.02	4	7.57

Note: 'AL' refers to attached labour, 'RFL' refers to regular farm servant.
Source: Field Survey, 2010.

As all the demand side households who are operating land use casual labour, here one is presenting information on other mechanisms used by the labour-demanding households to access labour. In the village, there are 18 households in the C_4 group, with 14 of them owning land and the rest being pure tenants. The C_4 households do not lease out but lease in land and consequently, the land operated by these households increases. The households in

this group use attached labour (three attached labour households) and depend on casual labour for the organisation of production. There are seven households in the C_5 group. For this set of households, leasing out of land looks to be the main option, and 71.3 per cent of the land owned by this group is leased out. These households generate not a direct demand for labour but an indirect demand for labour by leasing out the land.

The structure of the labour market and the institutions used by the households to re-allocate resources are different in the two villages. On the supply side of the labour market, the number of pure labour-supplying households (C_1) as well as the share of households owning land on the supply side is different in the two villages. Badarala village has a higher share of pure labour-supplying households and also a higher share of households owning land on the supply side of the labour market as compared to Velagapalli village. On the demand side of the labour market, Badarala village again has a higher share of pure labour-demanding households (C_4) as compared to Velagapalli village, which has a higher share of mixed labour-demanding households (C_5). The methods of re-allocation of resources depend not only on the structure of the labour market but also on the land–man ratio and the selection of crops to be cultivated. Badarala, with its importance of pure labour-demanding and pure labour-supplying households on the two sides of the market, and its casual labour market and long-term contracts, pre-dominates the labour market exchanges. However, in Velagapalli, the importance of pure tenants on the supply side of the labour market and importance of mixed labour demand households on the demand side generates tenancy as the most important mechanism for re-allocation (see Table 5.2).

5.2 Performance of the Labour Market in Two Surveyed Villages:

Performance of labour market can be seen in terms of two variables, namely the wages that exist and the employment to the labour supply households. As the work is a cross sectional work, nominal wages are provided for the aggregate as well as nominal wages for different operations. Employment data shows the number of days of employment generated in the villages as well as employment provided in the labour market for the pure and indirect labour supplying households.

5.2.1 Remunerations of Casual Labour Market:

Wages can be described, as remuneration paid for the services of labour in the process of production. Economists have different opinions regarding the nature of wages and their determination. There is significant difference between wages and earnings because wages exclude over-time payments and perquisites. Generally, certain costs like cost of supervisory labour are not regarded as wages. Another criterion to determine the nature of wages is the periodicity of payment. *"If a worker is paid by the hour or a day, he is stated to him in receipt of wages. If he is paid by the month, he is usually looked upon as being a salaried employee rather than as a wage earner"* (Bhagoliwal.T.N, 1976, p.357) Subject to these limitations, wages may be defined as the remuneration paid by the employer for the services of a worker who is engaged by the hour, days week or fortnight.

The agricultural wage variations exist significantly and not only across the regions and seasons but also among male, female and child labour (Rohini Nayyar (1987). Another study by Chandayya (2004) who examined two villages viz., Kumudavalli and Tetali from West Godavari district found that agricultural wages are differential for male and female. Bharathi and R S Rao, (2010, p.356) who studied nine villages, in West Godavari district in the South coastal Andhra region, found differential wages among male and female in Kothapalli and Seethampet villages. A three villages survey in Andhra Pradesh done by Ramachandran *et al*., (2010) found that wages differentiated between male to female across three villages of Anathavaram, Bukkacherla and Kothapalli. Reddy D.N (2010 p. 88), who has studied Kotha Armur village from Nizamabad district for a period of four decades from 1961- 62, also emphasises the differential wage among male and female wages in that region. Another study by Chandayya (2011) using *Agricultural Wages in India* as secondary source done for the time period of 1980-81 to 1999-2000, found that agricultural wages are different for male and female labourers over 15 districts spread across different zones of Andhra Pradesh.

Table: 5.3
Average Daily Wages (in ₹) Received by Field Labourers in State wise, West Godavari District and Surveyed Villages 2009-2010

Andhra Pradesh		West Godavari		Surveyed Villages			
				Badarala		Velagapalli	
Male	Female	Male	Female	Male	Female	Male	Female
119.64	90.11	137.78	100	139.25	77.74	174.3	136.89

Source: Prices, Wages & Index Numbers 2009-10, pp. 121-122. & field Survey, 2010.

The average daily wages in the surveyed villages during 2009-10 is relatively higher compared to West Godavari (district) and Andhra Pradesh. While the average wage of male stands at ₹ 119.64 and ₹ 137.78 respectively for the Andhra Pradesh and West Godavari district, it is relatively higher at 139.25 and 174.3 respectively in Badarala and Velagapalli villages. On the other hand daily average wage for female labourers is low at ₹ 77.74 in Badarala village, in comparison to ₹ 90.11 and ₹ 100 recorded for Andhra Pradesh and West Godavari districts respectively. It is however interesting to note that female wage is relatively highest among all the three regions in Velagapalli village at ₹ 136.89. Hence it can be inferred that female labour wage is low in un-irrigated area. This shows that male and female wages are relatively higher irrespective of the availability of irrigation facilities (see Table 5.3).

In agriculture sector these wages vary from operation to operation. The table below provides the average nominal wages for different operations in the two study villages.

Table 5.4
Average Nominal Wages for Different Operations in the Two Study Villages (in ₹

	Badarala				Velagapalli			
	Kharif		Rabi		Kharif		Rabi	
Operation	Male	Female	Male	Female	Male	Female	Male	Female
Preparation of land	130	0	130	0	178	0	177.5	0
Sowing	130	75	130	77.5	152.5	127.5	145	130.25
Weeding	0	75	70	75	110	100.4	110	100
Harvesting	120	77.5	140	86.5	177.5	130	172.5	136
Threshing	166	0	182	0	247.5	208.5	272.5	162.5
Cane crushing	0	0	200	0	0	0	0	0
Average wage	136.5	75.83	142	79.66	173.1	141.6	175.5	132.18
Stdev	72.21	41.55	45.69	43.80	83.61	81.54	89.79	71.09

Note: Stdev- Standard Deviation
Source: Field Survey, 2010.

There are seven types of agricultural operations which are classified based on the physical performance. Male dominated activities include activities which require higher physical performance like preparation of land, threshing and cane crushing, while female dominated activities are sowing, weeding and harvesting.

In Badarala village for sowing operations the average male wage rate stood at ₹ 130 for both kharif and rabi season, while female labourers average wage is at ₹ 75 and ₹ 77.5 for kharif and rabi seasons respectively. With regards to preparation of land, which is entirely male dominated activity, the prevalent wage rate is ₹ 130 during both kharif and rabi season. For Cane crushing, which is another male dominated activity, average wage stood at ₹ 200 during rabi season, and for threshing it stood at ₹ 166 and ₹ 182 for kharif and rabi seasons respectively. Average wage for male labourers for harvesting is at ₹ 120 and ₹ 140 during kharif and rabi seasons, while for females it is ₹ 77.5 and ₹ 86.5 during the same seasons. With regards to weeding, which is entirely female dominated activity, average wage stood at ₹ 75 for both the seasons. With regard to Velagapalli, which is in the irrigation zone, average wage for male labours for the preparation of land stood relatively same at ₹ 178 for both kharif and rabi seasons. Average wage for weeding activity stood at ₹ 152.5 and ₹ 145 for male labourers while for female labourers it is ₹ 127.5 and ₹ 130.25 during kharif and rabi seasons respectively. Average wage for male labours for sowing activity stood at ₹ 110 in both kharif and rabi seasons while for female labourers it is a tad lower at ₹ 100.4 and ₹ 100 during the said periods. With regard to harvesting average wage stood at ₹ 175.5 and ₹ 172.5 for male labourers in kharif and rabi season, while for female labourers it is ₹ 130 and ₹ 136 during the same period. It is interesting to note that in this village female labourers take part in threshing activity which is usually male dominated activity and their wages were on par with male labourers during kharif season at ₹ 247.5 and ₹ 208.5 respectively.

From the above table 5.4, we can conclude that average wage for Velagapalli village is relatively higher than Badarala village across all the activities and across both the seasons. The difference is quite stark during peak agricultural activities like harvesting, sowing and harvesting. Hence, we can infer that in villages with irrigation facilities there is high demand for labour and hence, higher labour wages. For instance, in Velagapalli, there is high incidence of tenancy which is restricting free flow of labour supply in to the agricultural labour market and hence, driving higher wage rate (see Table 5.4).

5.2.2 Remunerations of Attached Labour Households

Though the rural labour market studies have neglected attached labour and studied the wage determination mainly with reference to casual labour, some of the studies have attempted to highlight the interactions between the casual and attached labour through the comparison of their wage rates. "An interesting feature regarding annual farm servants in this connection is that, no standard wage is paid to them" (Rudra Ashok, 1982, p.349). In other words, a great deal of variation is noticed among the wages paid to different farm servants even within the same village. Generally they were paid in kind and small amounts of cash, but after 1980 cash wages were paid to them to casual labourers. One might nevertheless expect "*casual labour wage rates relative to the wage rates for annual farm servants to be higher"* (Rakesh Basant, 1984, p.393), for at least three reasons since casual labour is used mostly in peak seasons, and as labour is scare, wage rates for casual labour will tend to be higher than the average. The unemployment casual labour, in general, is more uncertain than that of annual workers. The casual labour wage rates, therefore, may include some sort of an "uncertainty-premium", making these wage rates higher than those of annual workers.

Table 5.5
Nature of Attachment, Years of Attachment and Remuneration Paid to Attached Labourers in Badarala

Sl. no.	Caste	Nature of attachment credit (in ₹)	No of years with cultivator	Perquisites	Income per year (in ₹)
1	Kamma	22000	2	B M C	24000
2	Kapu	20000	10	Do	30000
3	Kapu	15000	10	Do	18000
4	Muslim	10000	1	Do	36000
5	Rajaka/Golla	20000	2	Do	36000
6	Rajaka/Golla	18000	2	Do	30000
7	Vaddy	25000	2	Do	36000
8	Madiga	25000	3	Do	25000
9	Madiga	20000	3	Do	36000
10	Madiga	35000	5	Do	30000
11	Madiga	25000	1	Do	30000

Note: perquisites, BMC =breakfast + Meals and once in a year cloths for festival.
Source: Field Survey, (2010).

The Badarala village is a traditional village where we found the prevalence of attached labourers and regular farm servants. While segregating the attached labourers on a caste wise basis it is noticed that most of the labourers are from Madiga caste (4) then followed by Kapu (2) and Golla (2) community in Badarala village. Their nature of attachment to cultivator is primarily due to taking of credit from the cultivator and thus agreeing to work as attached labourer in the ryot's field. These agreements often stretch between 1 to 10 years. It is interesting to note that the nature of work, income and terms of work are dependent on the age of the attached labourer.

Those attached labourers work as Ploughmen whose duties encompass all the activities outside the employer's domestic work. These are ploughing, irrigating the fields from the electricified bore wells, all the agricultural operations work related to cattle stock etc. They work throughout the day right from sunrise to sunset with a break for meals two times during the day. In Badarala village attached labourers are 11 persons are there, but outside the village attached labourers are also found in Badarala village. Those attached labourers are from Polacigudem, Vemulapalli, Asannagudem, Mudicharla and Rangapuram labourers (see Table 5.5).

5.2.3 Employment Provided to the Labour-supplying Households

The main need for labourers is to find employment in the labour market; it also implies that they are totally dependent on the cultivators or farmers. We have taken two villages viz Badarala and Velagapalli which have two different agro-climatic conditions for the purpose of our study. Number of working days in Badarala village depends on the agriculture and rural non-farm traditional activities along with the reliance on employment from MGNREGS programme which is functioning effectively. Another observation is that Lingapalem mandal, under which Badarala village comes, is declared as drought prone mandal and hence, our study village has also been covered under the drought employment opportunities. Badarala village gets employment even during the slack or lean season due to the better functioning of the MGNREGS programme. Whereas in Velagapalli village households employment opportunities are mainly from farm sector both in kharif and rabi seasons and also additionally dependent on rural non-farm activities. In this village there is less dependency on MGNREGS as compared to Badarala village. Another important observation is that in Badarala village the nominal agricultural wages are relatively low compared to

wages from MGNREGS programme, leading to utmost reliance on this programme. On the contrary this programme is less efficient in the counterpart Velagapalli village due to the availability of work from agriculture and development of modern rural non-farm activities.

The table 5.5 explains different types of employment, number of employment days and the performance of labour market in the two villages. The employment of labourers is mostly dependent on the type of operations they are engaged in.

Table 5.6
Distribution of Total Employment Days in Two Villages (C_1 to C_3)

Name of the Operation	Badarala							
	Kharif				Rabi			
	Male		Female		Male		Female	
	Number of persons in operation	Total No. of Days	Number of persons in operation	Total No. of Days	Number of persons in operation	Total No. of Days	Number of persons in operation	Total No. of Days
Preparation of Land	83 (38.24)	651 (35.63)	0	0	71 (34.13)	685 (31.14)	0	0
Sowing	47 (21.65)	476 (26.05)	95 (35.05)	1280 (35.35)	6 (2.88)	48 (2.12)	92 (34.71)	1440 (37.47)
Weeding	0	0	81 (29.88)	883 (24.39)	1 (0.48)	10 (0.44)	78 (29.43)	690 (18.03)
Harvesting	5 (2.30)	65 (3.55)	95 (35.05)	1457 (40.24)	50 (24.03)	625 (28.93)	95 (35.84)	1710 (44.50)
Threshing	82 (37.78)	635 (34.75)	0	0 (0)	32 (15.38)	296 (13.07)	0	0
Cane Crushing	0	0	0	0 (0)	48 (23.07)	530 (24.29)	0	0
Total	217 (100)	1827 (100)	271 (100)	3620 (100)	208 (100)	2194 (100)	265 (100)	3840 (100)
Velagapalli								
Preparation of Land	94 (23.55)	569 (20.60)	0	0	92 (23.65)	553 (20.66)	0	0
Sowing	89 (22.30)	712 (25.78)	149 (35.05)	1364 (40.01)	88 (22.62)	692 (25.85)	149 (37.43)	1376 (41.87)
Weeding	44 (11.02)	158 (5.72)	116 (27.29)	520 (15.25)	35 (8.99)	122 (4.56)	93 (23.36)	420 (12.78)
Harvesting	86 (21.55)	743 (26.90)	148 (34.82)	1447 (42.45)	85 (21.85)	713 (26.63)	147 (36.93)	1424 43.34)
Threshing	86 (21.55)	580 (21.00)	12 (2.82)	78 (2.29)	89 (22.87)	597 (22.30)	9 (2.26)	66 (2.01)
Total	399 (100)	2762 (100)	425 (100)	3409 (100)	389 (100)	2677 (100)	398 (100)	3286 (100)

Source: Field Survey, 2010.

Looking at the employment scenario in Badarala village, we can see that in case of preparation of land a total of 83 male labourers are involved adding up to a total of 651 employment days of employment during kharif season, while for rabi it is 71 labourers

totalling to about 685 employment days. With reference to threshing, total of 82 male labourers are involved contributing to 635 employment days during kharif season, while during rabi it is 32 labourers contributing to 296 working days. For sowing operation, total of 47 and 6 male labourers participated contributing to 476 and 48 employment days during kharif and rabi seasons respectively. However, the participation of female labourers is very high for this activity as 95 and 92 persons are involved during kharif and rabi seasons contributing to 1280 and 1440 employment days respectively. With reference to harvesting operation, which is also dominated by female labourers, a total of 95 persons each are engaged during kharif and rabi season contributing to 1457 and 1710 employment days respectively, while only 5 and 50 male labourer are engaged in this activity contributing to 65 and 625 working days during the two periods. One of the significant features in this village is the presence of 48 male labourers engaged in cane crushing operation contributing to 530 working days during the rabi season.

In Velagapalli, the irrigated village, for preparation of land, there are 94 male labourers contributing to 569 working days in kharif season and 92 labourers contributing to 553 working days in rabi season. In terms of sowing operation, the total male labourers involved is 89 persons accounting for 712 employment days in kharif, while during rabi it is 88 workers and 692 employment days. In the case of female workers a total of 149 workers are involved during both kharif and rabi seasons, contributing to 1364 and 1376 employment days respectively during the same period. The same scenario holds true for weeding operations where female participation is more than male participation. In this village a total of 116 female labourers accounting to 520 employment days are involved in this activity during kharif season while during rabi it is 93 labourers accounting to 420 working days. Regarding harvesting operation, male participation is more or less same at 86 and 85 persons during kharif and rabi seasons respectively, contributing to 743 and 713 employment days. The same scenario holds true for female workers who are 148 and 147 in number and contributing to 1447 and 1424 employment days.

From the above table analysis, we can infer that the work participation in Velagapalli village is higher compared to Badarala village both in terms of number of persons employed and the total number of employment days. This has been generally attributed to the fact that Velagapalli is in an irrigated area with labour intensive paddy being the predominant crop.

On the contrary, Badarala village is in a un-irrigated geographical terrain necessitating lesser need for labour (see Table 5.6).

5.2.4 Class/Group wise Employment

About 58.14 percent of households belonging to C_1, C_2 and C_3 category are present in Badarala village, where as in its counterpart Velagapalli village their presence shot up to 81.48 percent. This implies that labour supplying households are very high in Velagapalli village.

The distribution of total number of workers and employment days among C_1, C_2 and C_3 is presented in table 5.7. While the C_1 and C_2 categories of labourer households are engaged with farm sector, while the C_3 category of households are primarily involved in non-farm activities as they stay apart from participating in farm labour activities on a temporary basis. Among C_1, C_2 and C_3 categories of labour households, involvement of C_2 category of labour is more in preparation of land which is accounted 383 days ,followed by C_1 (265) and C_3 (3) during kharif season, while during rabi C_1 farm households are engaged in 332 employment days, followed by C_2 (293) and C_3 (60). Under sowing operation, among all categories of male labour households C_1 farm or labour households participation is slightly higher than C_2 and C_3 households during both kharif and rabi season, while with regard to female labour households, C_2 participation is slightly higher followed by C_1 and C_3 for both kharif and rabi season. In terms of harvesting and threshing operations, out of all categories of labour households, male labour participation is slightly higher in C_1 followed by C_2 and C_3 in both kharif and rabi season, while for female labourers C_2 participation is slightly higher followed by C_1 and C_3 for both kharif and rabi season. With regard to weeding activity, which is female dominated, labour participation is highest in C_2 followed by C_1 and C_3 in kharif season, while during rabi season it is C_1 category followed by C_2 and C_3. However, labour participation for weeding activities with reference to male labour households is completely dominated by C_2 category during rabi season in this village. In Velagapalli, involvement of C_2 category of labour is more in preparation of land accounting to 340 working days, followed by C_3 (116) and C_1 (113) during both kharif and rabi season. Under sowing operation, among all categories of male labour households C_2 farm or labour

households participation is slightly higher than C_1 and C_3 households during both kharif and rabi seasons.

Table 5.7
Distribution of Total Employment Days among C_1, C_2, and C_3 Labour Households (Supply Side)

Class	Preparation of land	Sowing		Weeding		Harvesting		Threshing		Cane Crushing
Badarala Kharif										
	Male	Male	Female	Male	Female	Male	Female	Male	Female	Male
C_1	265 (40.71)	230 (48.32)	565 (44.14)	0	320 (38.88)	35 (53.84)	632 (43.37)	195 (30.70)	0	0
C_2	383 (58.83)	176 (36.97)	655 (51.17)	0	368 (44.71)	30 (46.15)	737 (50.58)	275 (43.31)	0	0
C_3	3 (0.46)	70 (14.71)	60 (4.69)	0	135 (16.40)	0 (0)	88 (6.03)	165 (25.98)	0	0
Total	651 (100)	476 (100)	1280 (100)	0 (0)	823 (100)	65 (100)	1457 (100)	635 (100)	0	0
Badarala Rabi										
C_1	332 (48.47)	30 (62.5)	620 (43.06)	0	335 (48.55)	285 (45.6)	700 (40.94)	118 (39.86)	0	195 (36.79)
C_2	293 (42.77)	18 (37.5)	680 (47.22)	10 (100)	287 (41.59)	260 (41.6)	815 (47.66)	168 (56.76)	0	275 (51.89)
C_3	60 (8.76)	0 (0)	140 (9.72)	0	68 (9.86)	80 (12.8)	195 (11.40)	10 (3.38)	0	60 (11.32)
Total	685 (100)	48 (100)	1440 (100)	10 (100)	690 (100)	625 (100)	1710 (100)	296 (100)	0	530 (100)
Velagapalli Kharif										
Class	Preparation of land	Sowing		Weeding		Harvesting		Threshing		Cane Crushing
	Male	Male	Female	Male	Female	Male	Female	Male	Female	Male
C_1	113 (19.86)	165 (23.17)	127 (9.31)	47 (29.75)	49 (9.42)	173 (23.28)	145 (10.02)	110 (18.97)	0 (0)	0 (0)
C_2	340 (59.75)	384 (53.93)	425 (31.16)	69 (43.67)	182 (35.00)	428 (57.60)	424 (29.30)	357 (61.55)	9 (11.54)	0 (0)
C_3	116 (20.39)	163 (22.89)	812 (59.53)	42 (26.58)	289 (55.58)	142 (19.11)	878 (60.68)	113 (19.48)	69 (88.46)	0 (0)
Total	569 (100)	712 (100)	1364 (100)	158 (100)	520 (100)	743 (100)	1447 (100)	580 (100)	78 (100)	0 (0)
Velagapalli Rabi										
C_1	106 (19.17)	148 (21.39)	126 (9.16)	41 (33.61)	47 (11.19)	160 (22.44)	137 (9.62)	100 (16.75)	10 (15.15)	0 (0)
C_2	329 (59.49)	389 (56.21)	427 (31.03)	64 (52.46)	170 (40.48)	406 (56.94)	433 (30.41)	392 (65.66)	0 (0)	0 (0)
C_3	118 (21.34)	155 (22.40)	823 (59.01)	17 (13.93)	203 (48.33)	147 20.62)	854 (59.97)	105 (17.59)	56 (84.85)	0 (0)
Total	553 (100)	692 (100)	1376 (100)	122 (100)	420 (100)	713 (100)	1424 (100)	597 (100)	66 (100)	0 (0)

Source: Field Survey, 2010.

However with regard to female labour households, C_3 participation is substantially higher followed by C_2 and C_1. The same trend has been observed with reference to other activities like weeding and harvesting. With respect to threshing operation among male labour households, C_2 labour household participation is the highest followed by C_3 and C_1 in both the seasons; while for female households during kharif participation is pre-dominantly by C_3 followed by C_2 while during rabi it is dominated by C_3 followed by C_1. From the above analysis it is found that under all operation activities, female participation is less in Badarala compared with Velagapalli. Another feature is that the work participation under preparation of land is higher in Badarala compared to Velagapalli village due to the reason that Badarala is in un-irrigated area and also the fact that it follows multiple cropping pattern necessitating the need for more preparation of land. Another significant feature is the absence of female labour participation among all categories of labour households under threshing operation in Badarala while Velagapalli has a fairly good number of female labourers in this male dominated activity. The reason for this is that in Velagapalli paddy is the pre-dominant crop which necessitated the need for additional labour in the form of female labourers (see Table 5.7).

Table 5.8
Total Number of Employment Days in Badarala among C_1 to C_3 Categories of Households (Excluding Attached Labour Households)

Badarala Kharif										
Class	Preparation of land	Sowing		Weeding		Harvesting		Threshing		Cane Crushing
	Male	Male	Female	Male	Female	Male	Female	Male	Female	Male
C_1	240 (38.34)	200 (38.34)	440 (38.10)	0	255 (33.64)	20 (40.00)	492 (37.36)	165 (27.27)	0 (0)	0 (0)
C_2	383 (61.18)	176 (39.46)	655 (56.71)	0	368 (48.55)	30 (60.00)	737 (55.96)	275 (45.45)	0 (0)	0 (0)
C_3	3 (0.48)	70 (15.69)	60 (5.19)	0 (0)	135 (17.81)	0 (0)	88 (6.68)	165 (27.27)	0 (0)	0 (0)
Total	626 (100)	446 (100)	1155 (100)	0 (0)	758 (100)	50 (100)	1317 (100)	605 (100)	0 (0)	0 (0)
Badarala Rabi										
C_1	297 (45.69)	20 (52.63)	480 (36.92)	0	265 (42.74)	250 (42.37)	610 (37.65)	106 (37.32)	0 (0)	180 (34.95)
C_2	293 (45.08)	18 (47.32)	680 (52.31)	10 (100)	287 (46.29)	260 (44.07)	815 (50.31)	168 (59.15)	0 (0)	275 (53.40)
C_3	60 (9.23)	0	140 (10.77)	0	68 (10.97)	80 (13.56)	195 (12.04)	10 (3.52)	0 (0)	60 (11.65)
Total	650 (100)	38 (100)	1300 (100)	10 (100)	620 (100)	590 (100)	1620 (100)	284 (100)	0 (0)	515 (100)

Source: Field Survey, 2010.

In table 5.8 an inference is drawn on the distribution of total number of employment days in Badarala among all categories of labour households excluding attached labour households. The attached labourers are the ones who have made pre-contract with the land owner for long period and hence have a lesser share in the casual agricultural labour market. Among C_1, C2 and C_3 categories of labour households, total number of employment days are highest for C_2 category (382), in preparation of land, followed by C_1 (240) and C_3 (3) during kharif season; while during Rabi C_1 farm households has the highest employment days (297), followed by C_2 (293) and C_3 (60). Number of employment days during rabi season is more than kharif due to the multiple cropping and better availability of irrigation during this season.

Under sowing operation, among all categories of male labour households C_1 farm or labour households' participation is slightly higher than C_2 and C_3 households during both kharif and rabi season; while with regard to female labour households, C_2 participation is slightly higher followed by C_1 and C_3 for both kharif and rabi season. In terms of sowing operation female work participation is more than male during both the seasons. It is interesting to note that among all the categories of labour households, female work participation is more in C_2 category (655) followed by C_1 (440) and C_3 (60) in kharif season. The same trend is followed even in rabi season with C_2, C_1 and C_3 contributing to 680, 480 and 140 employment days respectively. On the other hand, the male labour force participation in sowing activity during kharif is similar to that of female labour force; while during rabi season participation of C_1 is higher compared to C_2. Due to the fact that pure tenancy households are involved in their field, the participation in the sowing work is less compared to the kharif season. As pure tenancy households are involved in their own fields, labour participation in sowing activity is less during rabi when compared to kharif season.

With regard to harvesting, the total number of employment days among all categories of labour households, C_2 is the highest, followed by C_1 and C_3 across both male and female labour households and also during both kharif and rabi seasons. Under this activity, male participation is less in kharif season compared to rabi season. With regard to threshing activity, participation of C_2 category of households is the highest (275) followed by both C_3 and C_1 (165 each) in kharif season, while during rabi season it is C_2 followed by C_1 and C_3.

It has to be mentioned here that there is absence of attached labourers in Velagapalli village due to the availability of irrigation facilities which has in turn generated greater demand for labour and also of the predominance of Paddy cultivation which is labour intensive crop. Another interesting observation which has contributed to the absence of attached labourers in this village is the migration of traditional land owing households to urban centres (in order to pursue other activities like business, or government/private employment or for the purpose of their children's education) and leasing of land to households who were hitherto been casual or attached labourers (see Table 5.8).

5.2.5 Average Households Employment for the Two Surveyed Villages

As an extension of the above presentation which is class-wise and operation-wise, the following section provides average number of days of employment that a person avails in the village economy. In addition to employment in the rural labour market, households also get employment in MGNREGS. In each group/class there are households which might have different avenue to earn income so here average employment is presented in terms of different groups within each class. In case of Badarala village, C_1 households are attached labour and casual labour. In Velagapalli village C_1 households only enter the casual labour market. While C_2 households can enter the labour market or self cultivate.

Table 5.9
Frequency of Distribution of Attached Family Persons, Casual Labour and MGNREGS Employment Days among Two Villages

	Badarala Attached family persons					
Sex	Number of Persons	RLM days	Per Person	Number of Persons	MGNREGS	Per person
Male	3	207	69	6	237	39.5
Female	5	657	131.4	8	474	59.25
	Badarala Casual Labour					
Male	24	1478	61.58	26	1428	54.92
Female	23	2502	108.78	25	1497	59.88
	Velagapalli Casual Labour					
Male	8	1163	145.38	4	84	21
Female	5	641	128.20	2	45	22.5

Source: Field Survey, 2010.

Two different types of labour markets are functioning in these two villages. In Badarala village labour supply households are either attached or casual labourer. There are about 8

households in Badarala village who are attached labour households, but this type of labour households are absent in the other village. It has to be mentioned here that some members of the attached labour households engage themselves in the casual labour market also. In this village 3 male and 5 female members from the attached labour households have entered the casual labour market, while 6 male and 8 female members from the same attached labour households have engaged themselves in MGNREGS programme. The number of employment days for male stood at 69 and female at 131 for attached labour household who have entered in to casual labour market. While the employment days stood at 39 for male and 60 for female for attached labour households who have earned employment through MGNREGS scheme. With reference to pure land less households or C_1 category/group there are 21 households in Badarala village and 9 from Velagapalli village. In Badarala village we can find that the number of employment days generated from casual labour and MGNREGS is of the same proportion. Other important observation is that in Badarala village dependency on MGNREGS is more compared to Velagapalli village. Employment generated per person in Badarala village stood at 61 days for male labourers and 108 days for female labourer, while for Velagapalli village per person employment stood at 145 days for male and 128 days for female respectively. With reference to MGNREGS, the number of male workers is less in Badarala village in comparison to Velagapalli village. From the above table we can infer that dependency on MGNREGS is high in Badarala village than in Velagapalli village. The per person dependency on MGNREGS is 55 days for male and 60 days for female in Badarala village as compared to 21 days for male and 22 days for female in Velagapalli (see Table 5.9).

If one considers employment entered by the C_1 households in Badarala, attached labour gets more employment per person in the labour market when compared to pure labour supply households. However, employment in MGNREGS is relatively more in pure labour supply households. One reason could be that when there is employment in the farm where he works, the attached labourer has preference to bring in their own family labourers. Another interesting feature is the increased feminisation of labour i.e., higher amount of employed individual women workers. But if one sees over village employment, both for male and females employment days is nearly double in Velagapalli village when compared to Badarala village. This could be due to high proportion of attached labour working with land owners who come from outside the villages.

Labour allocations in C_2 households have more options. One, to use family labour in self cultivation, two entering the rural labour market and third to find employment in MGNREGS.

Table 5.10

Distribution of Number of Employment Days among C_2 Labour Households

Sex	Badarala C_2 Households							
	Number of persons	S E	RLM	Total	per person	Number of Persons	MGNREGA	Per person
Male	53	778	1888	2666	50.30	61	2446	40.10
Female	51	262	3542	3804	74.59	52	2118	40.73
Pure Tenancy Households								
Male	9	145	323	468	52.00	9	391	43.44
Female	8	77	556	633	79.13	10	489	48.90
Non pure tenant remaining Households								
Male	44	633	1565	2198	49.95	52	2837	54.55
Female	43	185	2986	3171	73.74	52	2607	50.13
Velagapalli C_2 Households								
Male	38	936	3158	4094	107.73	27	454	16.81
Female	25	394	2070	2464	98.56	6	131	21.83
Pure Tenancy Households								
Male	30	735	2114	2849	94.96	20	332	16.6
Female	22	343	2086	2429	110.40	5	101	20.2
Non pure tenant remaining Households								
Male	9	201	1044	1245	138.33	7	122	17.42
Female	3	51	237	288	106	1	30	30

Note: SE - Self employment, RLM – Rural Labour Market

Source: Field Survey, 2010.

The above table shows how the landed labour households (i.e C_2 households) are entering into the casual market and also how many days of employment they have generated from working in their own farm and from working at other labour demanding households. The number of mixed labour supplying or landed labour households (C_2 category group/class) in Badarala stood at 51 while for Velagapalli it is 31 households. However, among Badarala village households, 8 households are of pure tenancy households, while in Velagapalli 23 households belong to this category. Pure tenancy households in the C_2 category have high employment days in Badarala village than in Velagapalli village. In two villages mixed labour supplying households in the C_2 category/class have two sources of employment vis-a-vis rural labour market and MGNREGS programme. It has been found out that casual labourers are in less number when compared to MGNREGS in Badarala village, while in the

counterpart Velagapalli village persons working in the MGNREGS are less than those who are in rural labour market. In Badarala village those who are not engaged in agricultural casual work, are engaged in the MGNREGS programme work, which has increased the work participation in MGNREGS programme. This programme is functioning effectively in Badarala which is a dry village, while in the irrigated village the functioning of MGNREGS is less efficient. The reason identified for this is that in Velagapalli village paddy is being cultivated in both the seasons. Paddy being a labour intensive crop requires more labour which has created more demand and hence, more wages than the MGNREGS programme in that village. Even per person employment days in Velagapalli village is high in comparison to Badarala village (see Table 5.10).

The employment that C_2 households get both in their self employment as well as in the casual labour market is lower than compared to the C_1 households. This is true for male and female workers but also if one is a pure tenant or self cultivators.

Table 5.11
Distribution of Number of Employment days among in Rural Non-farm Persons

Description	Badarala RNFM					
	Number of Persons	RLM days	Per Person	MGNREGS of Person	Days	Per Person
Male	6	448	74.66	13	384	29.54
Female	10	686	68.6	14	549	39.21
	Velagapalli RNFM					
Male	10	1118	111.80	17	259	15.24
Female	45	3984	88.53	15	210	14.00

Source: Field Survey, 2010.

Rural non-farm or diversified households come under the category of the C_3 class/group of people and in this category there are 20 households from Badarala village and 70 from Velagapalli village. However, in Badarala village traditional non-farm employment is prevalent while in the Velagapalli we can identify the dominance of modern non-farm activities. It has been identified in these two villages that while the head of the family is involved in rural non-farm activities, the rest of the family has entered in to casual labour market for employment. With reference to rural non-farm households under C_3 category, in Badarala village only 6 male and 10 female from this category have entered in to casual labour market, while in the irrigated village of Velagapalli, 10 male and 45 females have

entered in to the casual labour market. Among the rural non-farm households of the C_3 category, it has been identified that persons employed in MGNREGS is high than person employed through casual labour market in both the villages.

This may be, perhaps, due to the fact that persons from rural non-farm households are not well efficient in agricultural operations and hence, find it easy to shift to MGNREGS as it requires less skill than agricultural activities. Added to this, they have the twin advantage of higher wages for the same amount or in some case lesser amount of physical strain. Coming to per person employment days, in Badarala village casual labour market contributes 74 days of employment, while other sources contribute to 29 days of employment with reference to male labourers, while for female labourers it is 68 and 39 days respectively. However, in Velagapalli village casual labour market contributes to 111 days while other sources contribute to 15 days of employment for male labourers, while for females it is 88 days and 14 days respectively from the above two sources (see Table 5.11).

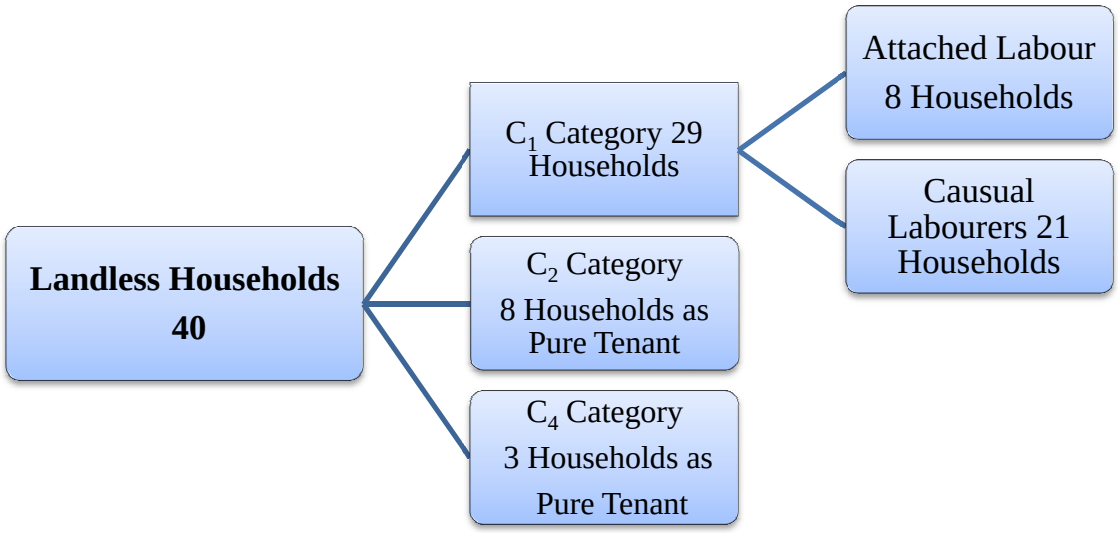
5.3 Explaining Choices Made in the Rural Labour Households

Badarala village

The village has 40 landless labour households. One would have expected all these households to enter the labour market. But 29 (72 per cent) of landless labour households form pure labour supply households and the rest 11 (28 per cent) of the landless labour households move to become temporary land owners. Out of the 29 pure labour supply households or C_1 households 21 (52 per cent) enter the casual labour market while the rest have long term labour market contracts.

So let us consider the C_1 households first and analyse the basis of their choice. As was specified earlier there are 29 households and 8 have long term contracts. One of the important reasons for long term contract is the availability of credit to C_1 households. Out of the 29 C_1 households in the village, there are 20 households who have taken loans and 8 households have not taken any loans.

Figure: 5.1: Choices made by Landless Labour Households



All these households without any loans, supply labour in the casual labour market. All the households with long term contracts also have loan commitments. In addition, all the households having long term contracts have taken loan only from the farmers implying an inter linkage of credit and labour market. There are 10 households also from casual labour households who have taken loans from farmers though they do not have any long term contract. One possible reason could be the size of the loan. The average amount of loan taken by households with long term contracts is much higher when compared to the size of loan taken by the C_1 households who only enter the casual labour market.

Table 5.12
Access to Credit sources of Two Surveyed Villages in C_1 Category Households

Casual Labour								Attached Labour			
				Sources of credit					Sources of credit		Average amount of loan
Villages	No. HHs	No. of HHs in this group	No. of HHs taken loans	Landlord/ Farmers	SHG	Multi Source	Average Amount of loan	No. HHs	No. of loans	Landlord/ Farmers	
Badarala	29	21	12	10	1	1	31,584	8	8	8	39,625
Velagapalli	9	9	1	1	0	0	100,000	0	0	0	0

Note: SHG-Self Help Group.
Source: Field Survey, 2010.

If one considers C_2 households, there are 51 households in this group. The choices in this group are self cultivation and supplying 'surplus' labour in the labour market or self cultivation and expand their share of operation and use their labour for organisation of

production or to lease out land and become C_1 households. There are 2 households who have completely leased out land and became casual labour households. The dominant strategy of households in this group is to expand their scale of land operation and internalise their demand for labour. Out of the 51 households 45 per cent of the households have leased in land and internalised their demand. Among these there are 8 households who should have been C_1 households have taken land on lease (pure tenant) and shifted their position from C_1 to C_2. Only 8 households or 15 per cent of the C_2 households enter the labour market (see Table 5.12).

Table 5.13
Distribution in Rent and Output of Two Surveyed Villages in C_2 and C_4 Category Households

	Rent				Out put	
	Mixed Tenant		Pure Tenant		Mixed Tenant (Avg Per acre in 75 kg bags)	Pure Tenant (Avg Per acre in 75 kg bags)
	Rs.(₹)	Fixed Kind	Rs.(₹)	Fixed Kind		
Badarala						
C2	13,869.57	0	13,142.80	0	25.43	21.45
Stdev	62251.79		22116.57		70.03	40.13
C4	13,392.86	0	13,800	0	27.16	21.67
Stdev	73611.27		17892.54		146.01	56.06
Velagapalli						
C2	0	14.31	0	14.31	33.40	32.45
Stdev		51.52		50.48	75.90	67.47
C4	0	12.57	0	12	33.80	36.12
Stdev		17.35		9.67	71.22	46.89

Note: Stdev- Standard Deviation
Source: Field Survey, 2010.

If C_2 households have to lease in land, they have to compete with the other major demanders of land who are the C_4 households. If these households are able to provide an average higher rent compared to C_4 households they can lease in land and internalise their demand. So the table 5.13 provides information on the average rent and output produced by C_2 and C_4 households when they are pure and mixed tenants. The pure tenants in C_2 and C_4 group produce a significantly lower level of output when compared to mixed tenants but the rental paid is not significantly different with the mixed tenants paying a marginally higher rent. So the pure tenants are self exploiting themselves to provide competitive rent to the landowners.

If one sees the mixed tenants, the C_2 mixed tenants produce a lower level of output when compared to C_4 but the rent is not significantly different.

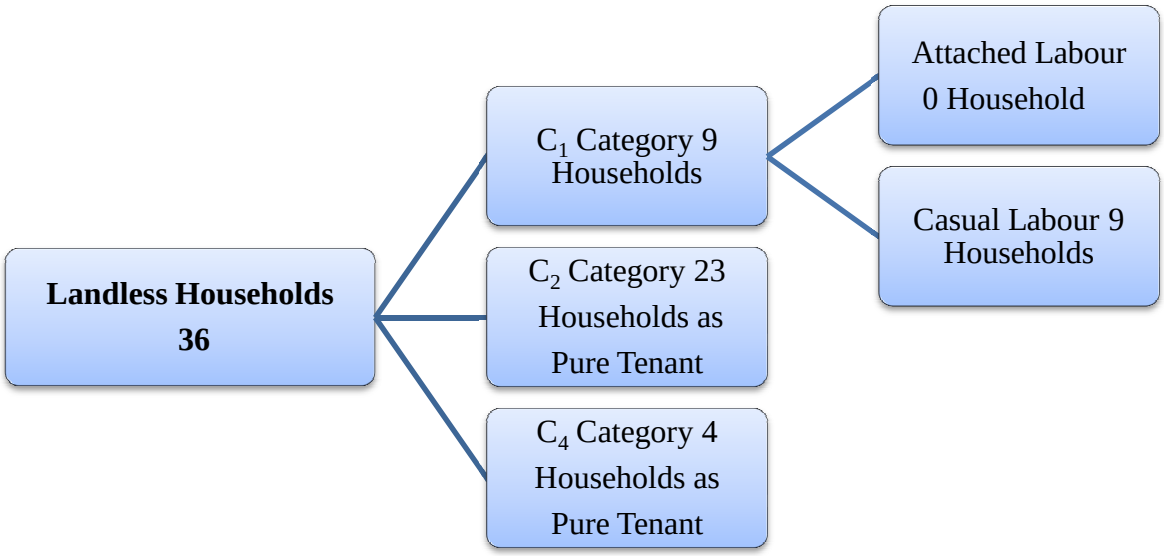
The labour-supplying households are self exploiting themselves and entering the land lease market implying a situation where the individuals prefer to be land operators rather than labour suppliers. This result should be seen in the context where the average employment available to C_1 households is greater than the employment C_2 households get when they enter the labour market as well as the number of days spent in self cultivation. If one assumes a rational peasantry (in bounded since) the individuals in C_2 group are ready to self exploit themselves and not enter the labour market even though they might get the average higher employment. This implies that these households prefer to be land operator maybe as it provides food security of the individuals and do not prefer the uncertainties with respect to labour market when compared to uncertainties with respect to agricultural production.

An individual may prefer to enter the land lease market when compared to labour market but that necessitates the existence of households leasing out land. The village has 12 households of C_5 type and 27.8 acres of these households are pure leasing out households. In addition, out of the 72 households, who are labour demanders owning 509.3 acres (C_4 and C_5), 20 per cent lease out land and the extent of land leased out is 13 per cent of the total.

Velagapalli

In this village there are 36 landless labour households. Among these households only 9 households are pure labour supplying households. 27 households, who are landless, have shifted and become land operators or are pure tenants. Out of the 27 pure tenants, 23 households continue to be part suppliers in the labour market (C_2) while 4 households have shifted from labour supply to labour demand households. Unlike Badarala village, where 73 per cent of the landless labour households are pure labour supply households, here only 25 per cent of the landless labour households are pure labour supply households.

Figure: 5.2: Choices made by Landless Labour Households:



If one sees the choices taken by C_1 households, there are 9 households and all these households enter the casual labour market. There are no long term contracts in the village. As was seen in Badarala village, all the attached labour households had taken loan from farmers and they are attached to these farmers. However, it has to be mentioned here that even though only 1 household has taken credit out of the total 9 households, in Velagapalli, the amount of credit taken is substantially high at 100,000 rupees. This amount is taken by a widow from the backward caste (mangali/barber community) named P. Venkata Satyavathi, for the purpose of construction of house. At present the amount is being repaid by her son working in Tadepalligudem in the postal department. This should be seen in the context where, the number of households taking loans in C_1 is very low when compared to Badarala village. It may be because of the high wages and the average number of days of employment available to C_1 households in this village, their need for credit is low and so credit-labour linkages are also low.

If one sees the C_2 households, there are 31 households in which 23 households or 74 per cent of the households are landless labour household. In this group, there are 8 households who own land and have also leased in land (mixed tenants) but do not enter the casual labour market. There are 23 households who are pure tenants and all these households also enter the casual labour market. So unlike Badarala village, where there is a sizable number of C_2

households with land, these households leased in land to internalise their demand. In this village, there is a shift of landless labour households into C_2 group by leasing in land. In the case of Velagapalli, where rent is paid in kind, the average rent for C_2 category of households stood at 14.31 bags per acre for both mixed and pure tenants, while for C_4 category it is a tad lower at 12.57 and 12.0 bags per acre respectively. With reference to output, among C_2 category, the average output per acre stood at 33.40 and 32.45 for mixed and pure tenants respectively, while for C_4 category, it stood at 33.80 and 36.12 bags per acre respectively. It has been noted here the average output per acre is relatively higher in Velagapalli village both category of tenancy cultivations. Just like the Badarala village households who are entering the pure tenants are self exploiting themselves to get access to land in the market.

5.4 Factor Determining of Labour Households and Cultivator Households: A Logit Analysis

The last section attempts to explain the choices open to households in the supply side of the market. Given that in both the villages, labour-supplying households prefer some access to land as pure tenants or a long term contract. An attempt is made to analyse to see the important characteristics of the labour demand and supply households. If there are no structural factors which influence the choices, one can say the system is fluid and households can be demander or supplier in a period but if there are significant structural factors influencing the choice then there are rigidities determining who can be a supplier and who can be a demander.

$$Y_i = \beta_1 + \beta_2 X_i + u_i \ldots\ldots. (1)$$

$$Y_i = \beta_1 + \sum_{j=3}^{7} \beta_j X_{ji} + \sum_{j=1}^{2} d_j D_{ji} + u_i \quad \ldots\ldots.. (2)$$

Where, Y_i= dependent variable which is a dummy variable taking the value of 1 if the labour supply household (C_1 and C_2) and 0 if it is a labour demand household (C_4 and C_5).

X_j= (Leasing the land (LEASE), Owned land (OWL), Leasing out (OUT), Family Size (FS), Literacy status (LITERACY))

D_j = (Caste (OC), (SC))

i = time period.

Here we use a simple logit analysis to explain the differences between labour-demand and labour-supply households. The variable takes a value of 1 if the household is a labour-supply household and 0 if it is a labour-demand household.

The independent Variables are:

a. Leasing in land (LEASE): Households leasing in land is taking actual numbers. This is not a structural factor but given a structure the incremental changes introduced by households adjustment.
b. Caste (CASTE): There exists some relation between the employment choice of the workers and their social status (as captured by the caste of the workers). The workers belonging to the scheduled caste families often suffer from social backwardness, which makes them a late starter to enjoy the benefits of development. They are also generally weak in terms of human capital. Therefore, we have classified the labour households into three categories namely SC, BC and OC. For this I have taken two dummies, in one dummy variable if the caste is OC the value is 1 and 0 otherwise, and for another dummy variable where the value is 1 for SC caste and 0 otherwise. This could be seen as a structural factor.
c. Owned land (OWL): Land is an important asset not only for agricultural activities but also for employment generation in rural economy. This can be considered as a structural variable used actual numbers.
d. Leased Out (OUT): The land is given on lease in two surveyed villages, which emphasises that tenancy has taken place. For this incremental variable the actual numbers.
e. Family Size (FS): The family size is crucial for agricultural labour activities, as those people with a bigger family size get more involved in agricultural activities. The Structural variable family size is actual numbers for every household.
f. Literacy status (LITERACY): 'The most important human capital of the workers' is their educational achievement. The incremental variable for literacy status takes the value 1 if literate and 0 otherwise.

Table 5.14
(Households C_1, C_2=1, C_4, C_5=0)
Binary-Logit Regression Analysis of Factors Determining Choice of Occupation between Agricultural Labour Households and Cultivators

	Estimated coefficients	
Explanatory variable	Badarala	Velagapalli
Leasing the Land (LEASE)	-0.440	-0.267
	(-2.859**)	(0.953)
Caste (Dummy) (OC)	-2.009	-0.563
	(-3.466*)	(-0.522)
Owned Land (OWL)	-0.555	-1.945
	(-3.453*)	(-2.442**)
Leasing out (OUT)	-1.074	-36.889
	(-2.162**)	(-9.63E)
Family Size (FS)	0.577	-0.354
	(-2.321**)	(-1.301)
Literacy Status (LITERACY)	-0.487	0.034
	(-0.874**)	(-0.035)
Caste (Dummy)(SC)	40.413	-0.171
	(9.33E**)	(-0.150)
Constant	1.062	4.346
	(1.007)	(2.855**)
Mc Fadden R^2	0.592	0.561
Log likelihood ratio	-42.87	-19.01
Sample Size	152	65

Note: i. Figures in brackets are computed Z-values; and
ii. * =1 per cent, **= 5 per cent levels significant respectively has taken.

Logit Regression Results:

The results of estimated Logit regression are presented in table 5.14. In Badarala village, the structural and incremental variables are all significant in influencing the choices between labour demanding and labour supplying households. This would imply that there exists strong rigidities in the characteristics of labour demanding and labour supplying households. If one analyses Velagapalli village, the only structural variable which is strongly related to choice is land owned at 1 per cent level of significance. This would imply that households can shift from labour demand to labour supply in the village. But in Badarala there is rigidity in terms of movement over labour demand and labour supply (see Table 5.14).

5.5 Conclusion

The two villages under investigation have different structures in terms of their allocation between labour-demand and labour-supply classes/groups. The choices made by the households in each class/group are also quite different in the two villages. This chapter made an attempt to present the choices and also explain the choices of the labour-supply households in terms of performance of the labour market, the functioning of other related markets (credit and lease and lastly, attempted to see if there is any existence movement over groups. In one village, Badarala village, pure labour supply households have made choice for long term contracts or casual labour market. While C_2 households internalise their demand by leasing in land. In the other village, landless labour households have moved to land lease market in a big way. In Badarala village, the long term contracts is due to access to credit which was provided by the landowner while potential labour-supplying households internalise their demand by leasing in land. On the other hand, in the other village landless labour households lease in land and become cultivators and supply some part of their labour also in the labour market. The labour-supplying households self exploit themselves and enter the land lease market even when employment days are low. In addition, Badarala village has rigidities in their structure i.e., households in supply side are structurally bound there while in Velagapalli, there is possibility to become cultivators. Both the village just illustrate a point that labour-supplying households have an unmet demand for land and would like to be land operators when compared to pure labour suppliers.

Appendix: Tables

Table: 5.1

Number of employment days for $C_1 + C_2 + C_3$ labour supply households in Badarala

Class	Preparation of Land		Sowing				Weeding				Harvesting				Threshing				Cane Crushing	
	Male		Male		Female		Male		Female		Male		Female		Male		Female		Male	
	No	Days	No	Days	No	Days	No	Days	No	Days	No	Days	No	Days	No	Days	No	Days	No	Days
Badarala Kharif																				
C_1	27 (32.53)	265 (40.70)	20 (42.55)	230 (48.31)	32 (33.68)	565 (44.14)	0 (0)	0 (0)	29 (35.80)	320 (38.88)	3 (60)	35 (53.84)	32 (33.68)	632 (43.37)	27 (32.92)	195 (30.70)	0 (0)	0 (0)	0 (0)	0 (0)
C_2	50 (60.24)	383 (58.83)	24 (51.06)	176 (36.97)	53 (55.78)	655 (51.17)	0 (0)	0 (0)	42 (51.85)	368 (44.71)	2 (40)	30 (46.15)	53 (55.78)	737 (50.58)	49 (59.75)	275 (43.30)	0 (0)	0 (0)	0 (0)	0 (0)
C_3	6 (7.22)	3 (0.46)	3 (6.38)	70 (14.70)	10 (10.52)	60 (4.68)	0 (0)	0 (0)	10 (12.34)	135 (16.40)	0 (0)	0 (0)	10 (10.52)	88 (6.03)	6 (7.31)	165 (25.98)	0 (0)	0 (0)	0 (0)	0 (0)
Total	83 (100)	651 (100)	47 (100)	476 (100)	95 (100)	1280 (100)	0 (0)	0 (0)	81 (100)	823 (100)	5 (100)	65 (100)	95 (100)	1457 (100)	82 (100)	635 (100)	0 (0)	0 (0)	0 (0)	0 (0)
Badarala Rabi																				
C_1	27 (38.02)	332 (48.46)	3 (50)	30 (62.5)	31 (33.69)	620 (43.05)	0 (0)	0 (0)	32 (41.02)	335 (48.55)	21 (42)	285 (45.6)	31 (32.63)	700 (40.93)	10 (31.25)	118 (39.86)	0 (0)	0 (0)	17 (35.41)	195 (36.79)
C_2	38 (53.52)	293 (42.77)	3 (50)	18 (37.5)	51 (55.43)	680 (47.22)	1 (100)	10 (100)	37 (47.43)	287 (41.59)	25 (50)	260 (41.6)	54 (56.84)	815 (47.66)	20 (62.5)	168 (56.75)	0 (0)	0 (0)	27 (56.25)	275 (51.88)
C_3	6 (8.45)	60 (8.75)	0 (0)	0 (0)	10 (10.86)	140 (9.72)	0 (0)	0 (0)	9 (11.53)	68 (9.85)	4 (8)	80 (12.8)	10 (10.52)	195 (11.40)	2 (6.25)	10 (3.378)	0 (0)	0 (0)	4 (8.33)	60 (11.32)
Total	71 (100)	685 (100)	6 (100)	48 (100)	92 (100)	1440 (100)	1 (100)	10 (100)	78 (100)	690 (100)	50 (100)	625 (100)	95 (100)	1710 (100)	32 (100)	296 (100)	0 (0)	0 (0)	48 (100)	530 (100)

Source: Field survey, 2010

Table: 5. 2

Number of employment days for $C_1 + C_2 + C_3$ labour supply households in Velagapalli

Velagapalli Kharif																			
Class	Preparation of Land		Sowing				Weeding				Harvesting				Threshing				
	Male		Male		Female		Male		Female		Male		Female		Male		Female		
	No	Days	No	Days	No	Days	No	Days	No	Days	No	Days	No	Days	No	Days	No	Days	
C_1	15 (15.96)	113 (19.86)	16 (17.98)	165 (23.17)	10 (6.71)	127 (9.31)	10 (22.73)	47 (29.75)	8 (6.90)	49 (9.42)	16 (18.60)	173 (23.28)	10 (6.76)	145 (10.02)	13 (15.12)	110 (18.97)	0 (0.00)	0 (0.00)	
C_2	62 (65.96)	340 (59.75)	54 (60.67)	384 (53.93)	49 (32.89)	425 (31.16)	24 (54.55)	69 (43.67)	42 (36.21)	182 (35.00)	51 (59.30)	428 (57.60)	49 (33.11)	424 (29.30)	56 (65.12)	357 (61.55)	2 (16.67)	9 (11.54)	
C_3	17 (18.09)	116 (20.39)	*19* (21.35)	163 (22.89)	90 (60.40)	812 (59.53)	10 (22.73)	42 (26.58)	66 (56.90)	289 (55.58)	19 (22.09)	142 (19.11)	89 (60.14)	878 (60.68)	17 (19.77)	113 (19.48)	10 (83.33)	69 (88.46)	
Total	94 (100.00)	569 (100.00)	89 (100.00)	712 (100.00)	149 (100.00)	1364 (100.00)	44 (100.00)	158 (100.00)	116 (100.00)	520 (100.00)	86 (100.00)	743 (100.00)	148 (100.00)	1447 (100.00)	86 (100.00)	580 (100.00)	12 (100.00)	78 (100.00)	
Velagapalli Rabi																			
Class	Preparation of Land		Sowing				Weeding				Harvesting				Threshing				
	Male		Male		Female		Male		Female		Male		Female		Male		Female		
	No	Days	No	Days	No	Days	No	Days	No	Days	No	Days	No	Days	No	Days	No	Days	
C_1	14 (15.22)	106 (19.17)	16 (18.18)	148 (21.39)	10 (6.71)	126 (9.16)	8 (22.86)	41 (33.61)	8 (8.60)	47 (11.19)	16 (18.82)	160 (22.44)	10 (6.80)	137 (9.62)	12 (13.48)	100 (16.75)	2 (22.22)	10 (15.15)	
C_2	61 (66.30)	329 (59.49)	54 (61.36)	389 (56.21)	50 (33.56)	427 (31.03)	23 (65.71)	64 (52.46)	37 (39.78)	170 (40.48)	51 (60.00)	406 (56.94)	48 (32.65)	433 (30.41)	60 (67.42)	392 (65.66)	0 (0.00)	0 (0.00)	
C_3	17 (18.48)	118 (21.34)	18 (20.45)	155 (22.40)	89 (59.73)	823 (59.81)	4 (11.43)	17 (13.93)	48 (51.61)	203 (48.33)	18 (21.18)	147 (20.62)	89 (60.54)	854 (59.97)	17 (19.10)	105 (17.59)	7 (77.78)	56 (84.85)	
Total	92 (100.00)	553 (100.00)	88 (100.00)	692 (100.00)	149 (100.00)	1376 (100.00)	35 (100.00)	122 (100.00)	93 (100.00)	420 (100.00)	85 (100.00)	713 (100.00)	147 (100.00)	1424 (100.00)	89 (100.00)	597 (100.00)	9 (100.00)	66 (100.00)	

Source: Field survey, 2010.

CHAPTER - VI

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CONCLUSIONS

This work started with a normative proposition that the existence of a well developed labour market is a necessary condition for the development of a less developed economy. A well-formed labour market implies that the separation of agricultural households into labour-demanding and labour-supplying households. This separation facilitates self-correction of the labour market through adjustment in wages. In the context of incompletely formed labour markets, the self-corrective mechanism in the labour market is also realised through non-labour market institutions like the land lease market. In such situations, where there is no well-formed labour market, there is a need to understand the choices made by the labour-demanding and labour-supplying households and to see if the adjustment mechanism is within the labour market or over labour markets. In these choices, some may facilitate the formation of the labour market, while the others may hinder the formation of the labour market. An increase in employment available to labour-supplying households in non-farm sector or in migration to urban areas will be an inward shift in the short run supply function of labour increasing wages and decrease in employment. But an increase in lease would imply that the labour supplying households are converting themselves into land operators and in the process, are internalising their demand for labour. So an increase in land lease, in the pure tenant form, has the potential for an inward shift in supply function and also for a simultaneous inward shift in demand for labour which may decrease the wages as well as employment available in the labour market. So this study attempts to analyse choices that exist for labour-demanding and labour-supplying households will lead to the formation of the labour market or imply that households have a latent demand for land, thereby increasing the land lease arrangements. The analysis was conducted at two levels: one, at the state level and the second, at the village level.

In a vastly heterogeneous and complex country like India there are wide regional differences in the performance of agricultural sector. There are some states which are witnessing higher rates of growth in the agriculture sector compared to other states. For example, states like Punjab and Haryana are witnessing higher levels of growth in output when compared to states like Bihar, Orissa, and Madhya Pradesh. Given that the labour market is a derived

market from the output market, the demand for labour could also be different in different states. On the supply side, the proportions of agricultural labour households are varied and the choices open to these households are also different and they perform differently in the labour market. Empirical studies have shown that the functioning of the labour market also diverse.

At the state level, the rural economic structure is classified into two parts: the farm sector and the non-farm sector. The farm sector consists of individuals who take part in agricultural production process and the non-farm sector consists of individuals who might facilitate production. The farm sector or agricultural population in turn has two parts: cultivators and agricultural labour households (AGL). Agricultural labour household form the main component of the supply side in the labour market. The other segment is the cultivators who form the demand side of the labour market, labour-demanding households are cultivating the landed households. When it comes to the labour-supplying households, they are classified into three types: (i) agricultural labour households (ii) effective landless households (iii) small and marginal farmers. Agricultural labour households are pure labour supplying households who does not own or operate the land. Effective labour supply households (<1 acre landed households) and even small and marginal farmers are identified as a part of labour supplying households. The share of cultivators has declined over the period from 1981 to 2001 (Census data NSS 1981-82 to 2002-03). According to the NSS data, the share of medium and large farmers are also declining. One might assume that the decline in the share of cultivators imply their withdrawal from agriculture and entry into non-farm sector. A decline in the share of 'major' demander of labour in the market would imply a corresponding decline in the aggregate demand for labour. On the labour market, the proportion of agricultural labour households are marginally increasing while the proportion of effective landless and small and marginal farmers are also increasing. An increase in the small and marginal farmers only indicates an internalisation of labour-supplying within the households. The choices open to agricultural labour households are only two: they may enter tenancy market or rural non-farm sector. Based on NSS data, the extent of land under tenancy has declined over a period from 1981 to 2002-03 at the all India level and some at the level of states wise or/and also. While in the case of rural non-farm sector, their share has increased at the all India level. Among the north Indian states like Gujarat, Haryana Rajasthan, there is a decreasing trend during the period from 1993 to 2004 while in the South

Indian states, Karnataka and Tamil Nadu, the share of non-farm sector has declined during the same period.

The performance of rural labour market depends on wages rates and employment in particular. The real wages have increased in all the states over the period from 1980-81 to 2004-05. During the pre-reform period, growth rate of real wages increased compared to the post-reform period. However, from the employment point-of-view, there are three types of employment: (i) self-employment (ii) regular and (iii) casual labourers. During the period from 1983 to 1999-2000, self-employment regular-salaried and casual labourers increased, while the salaried employees has declined during the period 2004-05 at all states and the even at the all India level.

An attempt is made to analyse whether the performance of the agricultural sector in terms of real wages are related to structural factors and the choices that individuals make in rural sector. One has used panel regression estimates, using panel (GLS) and FEM fixed effect model. In addition to the standard variables like crop intensity (CI) and irrigation, structural variables like share of land owned by medium and large farmers and small and marginal farmers and choice variables like share of households in RNFS and share of land leased in were also used. In terms of structural variables, the expected signs of small and marginal land operated area (SMLOP) and medium and large farmers operated Area (MLLOP) are all having positive impact on real wages. The choice variables also have the expected sign i.e., as the share of land leased in increases, wages decreases, while the share of non-farm sector increases, wages increases.

However, the variables, SHGCA (Gross Cropped Area (GCA) and Gross Cropped Area derived from agricultural labour households have a positive impact, but the impact is insignificant.

The performance of the labour market depends on the structure of the labour market as well as the choices open to households in the rural areas. The performance of individuals in labour market depends on the historical conditions like the nature of land settlement in the area, public interventions into the area like public provision of irrigation, introduction of new crops and nature and extends of non-agricultural sector in the region etc. In addition, the nature of the labour market at the state level assumes the market to be homogeneous within

the state. But the labour market could itself be non-homogeneous within the state. There could be regions with well-developed labour market and also regions without well-developed labour market. The results might be a reflection of the aggregation over non-homogeneous regions. So an attempt was made to study the nature of adjustment processes in two villages in a developed district of Andhra Pradesh, namely West Godavari district.

The district of West Godavari was named so after being carved out of the old Godavari district in which the Western delta of the river Godavari lies. West Godavari district with its long history of irrigation and *ryotwari* (1859-60) settlement is identified as a developed district with paddy being the major crop. The occupational structure has importance of rural section and also importance of the farm sector. Cultivators form nearly 16 per cent of the population and agricultural labourers from 30 per cent of the population. But if one looks at the size wise distribution of holding and area owned, one gets the impression of increasing importance of marginal farmers giving no indication of land concentration. So it looks the growth of the district is the introduction of 'new technology' but not due to reallocation of land resource. An inference which may be true for all over India too. One could say that agricultural real wages has increased during the period from 1980-81 to 2004-05 in district wise for male as well as female.

Given that the country is not uniform, the district is also not uniform. There are canal irrigated areas and tube-well irrigated areas. Two mandals were selected from a delta/canal irrigated and tube well irrigated area. The cropping pattern, as expected, is very different in the two areas. The occupation structure in terms of relative importance of farm sector is also different. The mandal with irrigation has higher relative share of non-farm sector compared to the dry village. A peculiar feature is that the share of agricultural labour is higher in the dry village when compared to the wet village. With regards to cropping pattern, Badarala multi-cropping pattern and Velagapalli mono-crop is cultivated. Cropping patterns in the two study villages differ from one another; while Badarala, which is un-irrigated has multiple cropping, in Velagapalli, which is under the irrigation zone, is a mono-crop village with paddy as the only crop. Badarala village is irrigated mainly through bore-well and tank irrigation, Velagapalli is irrigated by *Undi*, a government canal which has also resulted in the predominance of paddy cultivation.

The two villages under this study have different structures in terms of their allocation between labour-demanding and labour-supplying classes/groups. The two villages have different structures in terms of households in the farm and non-farm sector and also with the distribution of households in the farm sector. The proportion of pure labour-supplying households (C_1) is different in the two villages. Badarala village has 16.86 per cent of pure labour-supplying households while the corresponding figure in Velagapalli village is 6.66 per cent. The number of households that supply labour and organise production (C_2) is 29.65 per cent in Badarala and 22.96 per cent in Velagapalli. In Badarala, households own nearly 14.22 per cent of the land and operate 21.16 per cent of the land, while the households in Velagapalli own only 4.93 per cent of the land but operate 40.55 per cent of the land. The main labour-demanding households are those that demand labour and do not supply labour but may use their family labour (C_4 type of households). These households comprise 34.88 per cent of the total number of households and own 58.36 per cent of the total land in Badarala. These households have increased the extent of land under cultivation to 61.63 per cent. In Velagapalli, these households form only 13.33 per cent of the total number of households and own 42.22 per cent of the total land. These households have increased their landholdings to 47.02 per cent. Another class/group of labour-demanding households include those which have land but either do not cultivate it themselves or cultivate it but only in a supervisory role (C_5 type of households). In Badarala village, such households account for 6.97 per cent of the total number of households and own 27.42 per cent of the land. However, the land operated by this group has decreased to 17.21 per cent over time. Velagapalli village has also witnessed the same trend, with the proportion of land being operated by this group decreasing to 12.44 per cent from 52.84 per cent.

The choices made by the households in each class/group are also quite different in the two villages. An attempt has been made to present the choices and also explain the choices of the labour-supplying households in terms of performance of the labour market, the functioning of other related markets credit and lease and lastly to see if there exists any movement over groups. In one village, Badarala village, pure labour-supplying households have made the choice of long term contracts or casual labour market while C_2 households internalise their demand by leasing in land. In the other villages, landless labour households have moved to land lease market in a big way. In Badarala village, the long term contracts are due to access to credit which was provided by the landowner while potential labour-supplying households

internalise their demand by lease in land. In the other village, landless labour households lease in land and become cultivators and supply some part of their labour also in the labour market. The labour-supplying households self exploit themselves and enter the land lease market even when employment days are low. In addition, Badarala village has rigidity in its structure i.e., households in supply side are structurally bound while in Velagapalli there is a possibility to become cultivators. Both the villages illustrate the point that labour-supplying households have a unmet demand for land and would like to be land operators when compared to pure labour suppliers.

The West Godavari district in Andhra Pradesh has witnessed a significant growth in output during the post-green revolution period. This growth has been the result of intervention by the state to facilitate increased production or of intervention by the industry for assured output. However, in the labour market in both the villages, there is a demand for land among the labour-supplying households. In one village, it takes the form of land owned by the labour-supplying households (Badarala), while in the other village, the labour-supplying households have entered the tenancy market (Velagapalli). In the process, the labour-supplying households became organisers of production, leading to an internalisation of their demand for labour. As more and more labour-supplying households become organisers of production, they are likely to completely or partially withdraw from the supply side of the labour market. Further, being owner-operated households, they are also expected to withdraw from the demand side of the market. A combined effect of this could be a possible reduction in employment and the effect of wages being not clear in the market. This might provide more incentives to labour-supplying households to withdraw from the labour market, thereby reinforcing the incompletely formed market. This result is also seen during the analysis of performance of the labour market at the state level. In the post independence period, the different interventions by the state to increase agricultural productivity has been able to generate growth, but the labour market continues to be incompletely formed with labour supply households preferring to either own land or lease in land and become land operators. This could have major implications for long term growth processes in the economy.

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