# Disparities in Employment and Income in Rural Andhra Pradesh, India
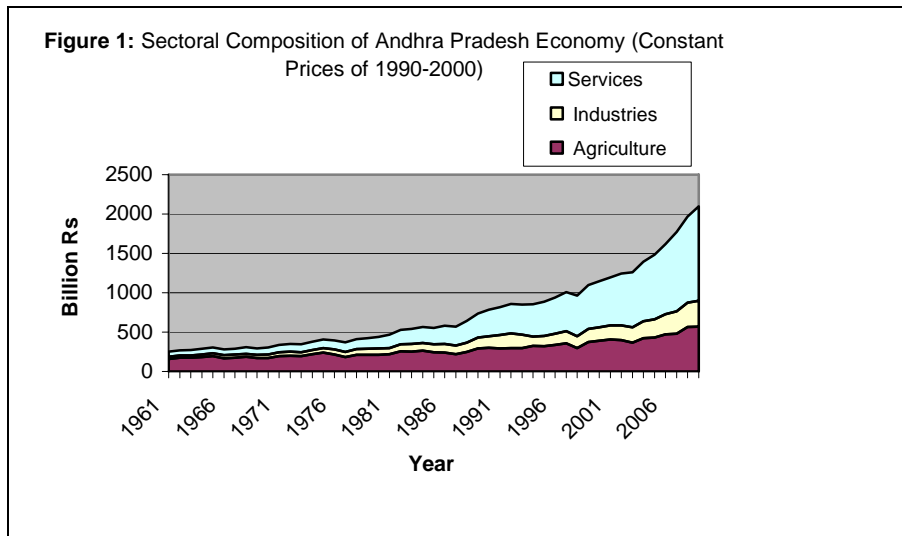
A AMARENDER REDDY[*]

Andhra Pradesh is one of the largest states of India with more than 60 percent of the population earning their livelihood in agriculture. The paper studies regional disparities in employment, unemployment and income in Andhra Pradesh. The empirical results are based on unit level data of rural households based on employment and unemployment surveys conducted by National Sample Survey Organisation. The analysis shows that the share of agricultural workers is less in the agriculturally developed Coastal region compared with the less developed Telangana region and drought prone Rayalaseema region. The work participation rate is low and unemployment and wage rates are high in Coastal compared with Telangana and Rayalaseema due to high reservation wage rate, high per capita income and capital intensive agricultural sector in Coastal region. With the development of agriculture, there has been a simultaneous increase in demand for non-agricultural goods and services resulting in increased share of non-agricultural workers in total work force in the Coastal region. The share of self-employed is higher in both Telangana and Rayalaseema regions. Weekly wage earnings are higher for males, higher educated, and upper caste workers.
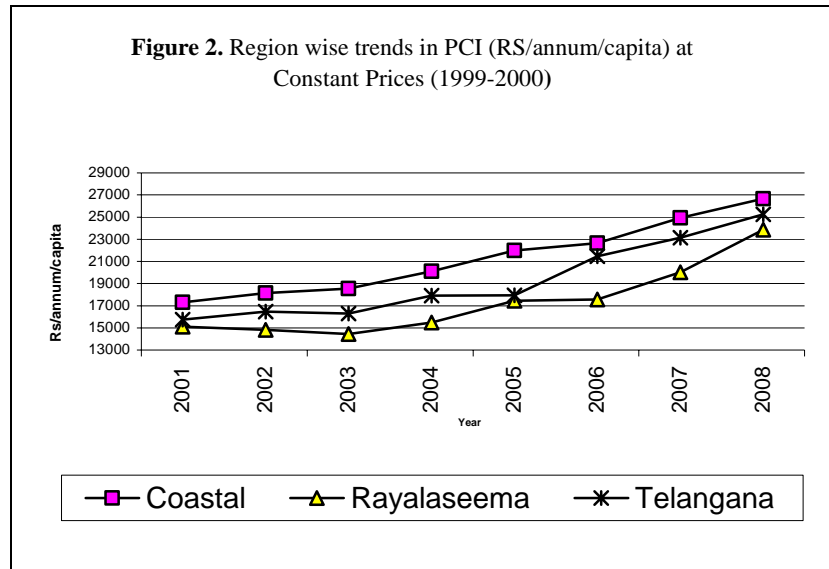
## I. INTRODUCTION

Andhra Pradesh is the fourth largest state of India in terms of area, with its projected population of 84 million in 2011; it is the fifth most populous State in India. The total geographical area of Andhra Pradesh is 27.5 million hectares; only 37.8 per cent of this is used for agricultural activities (Table I)**.** About 73 per cent of its population lives in rural areas. Even though about 62.2 per cent of workers are dependent on agriculture, forestry and fishing sector, its share in gross state domestic product (GSDP) decreased from about 56 per cent in 1970 to

[*]International Crops Research Institute for Semi-Arid Tropics (ICRISAT), Hyderabad, Patancheru, Andhra Pradesh, India.

27 per cent in 2009 (Figure 1). The growth rate of GSDP of Andhra Pradesh was 5.27 per cent in 1970, while agricultural sector growth was only 2.88 per cent. During 1990 to 2010, the growth rate of GSDP increased to 6.17 per cent, with a slight increase in agricultural sector growth to 3.63 per cent. It indicates the growing importance of non-agricultural sector in the Andhra Pradesh economy. Slow growth of agricultural sector coupled with higher dependence for livelihoods on it by small farmers and agricultural labourers reduced per capita income of households dependent on the farm sector compared with households dependent on the non-farm sector and raised the need for occupational diversification from farm sector to non-farm sector. Approximately 84 per cent of the land holdings are of less than 2 hectares (ha), with a mean holding size of 0.7 ha. Evidence suggests that occupational diversification, from lower- to higher-value activities, possesses substantial potential to increase opportunities of income and employment in rural areas (Reddy 2006, 2010b). Rural households have a larger endowment of labour in relation to land, and therefore, diversification towards non-farm activities can be an important opportunity to utilize their surplus labour. On the demand side, there are significant opportunities to diversify towards non-farm activities. Demand for non-farm activities is witnessing an exponential growth due to rising per capita incomes and a fast-growing urban population. And, in the recent past, the factors underlying demand for non-farm activities had been quite robust and are unlikely to subside in the near future, resulting in a further increase in their demand.



**Figure 1:** Sectoral Composition of Andhra Pradesh Economy (Constant Prices of 1990-2000)

**Figure 2.** Region wise trends in PCI (RS/annum/capita) at Constant Prices (1999-2000**)**



Andhra Pradesh is distinctly divided into three regions, namely Coastal Andhra, Telangana and Rayalaseema due to the considerable heterogeneity in socio-cultural, economic and agro-climatic conditions, which is also likely to have influenced the nature, extent and speed of occupational diversification across regions. Visual observation of per capita income (PCI) in three regions shows that per capita income is higher in Coastal region followed by Telangana and the least is in Rayalaseema (Figure 2). And recent agitation for separate Telangana state on the ground of growing regional disparities based on low per capita income, less development of agriculture and irrigation sectors in Telangana region needs to be examined empirically whether occupational and income diversification played any role in the growing regional disparities and vice versa. Therefore, the dynamics of occupational diversification and its outcomes are investigated in this paper at regional level with the following specific objectives:

- i). To examine the occupational structure of households in different regions of rural Andhra Pradesh;
- ii). To assess the level of unemployment, underemployment and poverty in different categories of households;
- iii). To find out various socio-economic factors affecting employment pattern in different regions and among households; and
- iv). To suggest policy measures to reduce unemployment and underemployment across regions.

**II. DATA AND METHODOLOGY**

The study used unit level data based on quinquennial survey of employment and unemployment conducted by the National Sample Survey Organisation, (NSSO) in its 61st round survey covering 432 villages and 5,550 households for the period 2004-05 (NSSO, 2007). The state was divided into four NSSO regions by grouping contiguous districts which are similar with respect to population density and cropping pattern. They are Coastal consisting of 9 agriculturally prosperous districts, inland northern consisting of 10 districts of Telangana region, which is relatively backward, but rich in natural resources, South Western region comprising only two districts of Rayalaseema region and Inland Southern comprising the remaining two districts of Rayalaseema. But for all analytical purposes, the last two regions of Rayalaseema are pooled together to overcome obstacles in interpreting small sample size and also due to historical, socio-economic and geopolitical reasons. So our final list of regions comprises Coastal (9 districts), Telangana (10 districts) and Rayalaseema (4 districts). For easy interpretation, landholding and monthly per capita expenditure groups were delineated as follows. Monthly per capita income groups are divided into five equal quintiles on the basis of expenditure; For convenience of grouping we call bottom 20 per cent as 1st quintile group (lowest expenditure group), next 20 per cent as 2nd quintile group, middle 20 per cent as 3rd quintile, next 20 per cent as 4th quintile group and top 20 per cent as 5th quintile group. Total land holding was given by (land owned including) + (land leased-in) - (land leased out) + (any land possessed by the household which is neither owned nor leased-in). Landholdings were grouped into landless (0 ha), marginal cultivated class (0.01 to 0.4 ha), small (0.41 to 1 ha), medium (1.01 to 2 ha), semi-large cultivated class (2.01 to 4 ha) and large land holding (> 4 ha). Age groups are classified according to standard grouping i.e., children (<15 years), young (15-29), "aged" (30-59) and "old aged" (> 59 years). Education level of persons was grouped into six categories: (1) illiterate, (2) below primary, (3) primary educated, (4) middle and secondary educated, (5) higher secondary educated, and (6) graduate and above.

**Regional Disparities in Socio-economic Conditions**

Telangana region, occupies the largest area of 11.5 million hectares, accounting for 41.8 per cent of total geographical area of the state, followed by Coastal region with 9.3 million hectares (33.7 per cent) (Table I). Rayalaseema covers the remaining 24.6 per cent of the total geographical area of Andhra Pradesh. Population density is higher in Coastal (309/sq.km), followed by Telangana (227/sq.km) and Rayalaseema (174/sq.km). Per cent of rural population is higher in Rayalaseema followed by Coastal and Telangana regions.

For historical reasons, the Telugu-speaking people had been divided into two separate entities, namely, Telangana of "Hyderabad state" and Andhra area (consisting of Coastal and Rayalaseema) of "composite Madras State." For centuries together, the former was under feudal (*Nizam* of Hyderabad) rule and the latter under the colonial (British) rule, which has had an effect on the development of these regions. The "Andhra" area, under the colonial rule for centuries and thereafter ruled by popularly elected governments, had  better socio-economic features at the time of state formation in 1956. On the other hand, 10 districts of Telangana, under the rule of feudal *Nizams* for centuries, had very low base on all socio-economic indicators. Within 11 districts of "Andhra" there were two distinct regions on the basis of agro-economic grounds, *i.e.,* Coastal, which was more prosperous agriculturally and called as granary of south India, and Rayalaseema, which was the driest region in South India (Reddy 2010b). Average normal rainfall in the state is 925 mm. per year. Average rainfalls received by different regions vary significantly *i.e.,* highest recorded in Coastal (1,100 mm), followed by Telangana (900 mm) and Rayalaseema (750 mm). Per cent of cropped area to total geographical area is 37.8 per cent in Andhra Pradesh. The share of cropped area is the highest in Rayalaseema (41.4 per cent), followed by Coastal (40.3 per cent) and Telangana (32.6 per cent). Cropping intensity is highest in Coastal (134 per cent), followed by Telangana (117 per cent) and Rayalaseema (110 per cent). Per cent of irrigated area to total cropped area is also highest in Coastal (56.3 per cent), followed by Telangana (31.4 per cent) and Rayalaseema (20.7 per cent). Irrigated area more than once is also highest in Coastal, followed by Telangana and Rayalaseema. Fertilizer consumption per hectare and mechanization (number of tractors/1,000 ha) is also higher in Coastal, followed by Telangana and Rayalaseema. The dominant crops are paddy followed by cotton and groundnut in the state. Coastal region dominated by high-input high output crops like paddy, fruits and vegetables, while Telangana and Rayalaseema regions are dominated by low-input low output rain fed crops like pulses, oilseeds and rain fed cotton (Reddy 2004, Reddy 2009a, 2009b). As a result, land productivity is higher in Coastal, followed by Telangana and Rayalaseema.

Per capita income is also higher in Coastal region, followed by Telangana and Rayalaseema regions. Irrigation through private sources (well irrigation) is higher in Telangana (as surface water resources are limited there), followed by Rayalaseema and Coastal, while canal irrigation (through public investment) is high in Coastal region. Average yield of most of the crops is high in Coastal compared with Telangana and Rayalaseema. Overall, the above figures indicate that Coastal region is prosperous agriculturally followed by Telangana and Rayalaseema regions (Reddy 2010a, 2010b). In literacy rate, Coastal region has

the highest rate followed by Rayalaseema and Telangana, which has bearings on employment and unemployment situation. The region wise growth rates from 1966 to 2005 for important socio-economic indicators are given Table I, which indicates, in most of the development indicators growth in Telangana is the highest, followed by Coastal and Rayalaseema. However, still per capita income and other socio-economic indicators of Coastal region are much higher than Telangana region (Figure 2, Table I). It means Telangana region is catching up with Coastal region since the 1960s, but in Rayalasema region growth rates are slower and still far behind the Coastal region.

TABLE I
**DEMOGRAPHIC AND PRODUCTIVITY INDICES OF DIFFERENT REGIONS (TRIENNIUM ENDING 2004-05)**

|  | Region | | | |
|---|---|---|---|---|
|  | Coastal | Telangana | Rayalaseema | A.P. |
| **Demographic indicators** |  |  |  |  |
| Area (Million ha) | 9.3 | 11.5 | 6.7 | 27.5 |
| Per cent of cropped area to total area | 40.3 | 33.6 | 41.4 | 37.8 |
| Average size of operational holdings (ha) | 1.2 | 2.7 | 2.1 | 1.56 |
| Per cent to total state area | 33.7 | 41.8 | 24.6 | 100 |
| Normal rain fall (mm) | 1100 | 900 | 772 | 925 |
| Population (million ) | 28.7 | 26.1 | 11.7 | 66.5 |
| Per cent to total state rural population | 43.1 | 38.1 | 18.7 | 100 |
| Share in MG-NREGA employment | 33.8 | 46.4 | 19.8 | 100 |
| Population density/Km $^2$ | 309 | 227 | 174 | 242 |
| Rural population (%) | 74.6 | 69.8 | 76.8 | 73.0 |
| Total number of towns | 124 | 88 | 52 | 264 |
| Literacy rate (%) | 46.2 | 41.3 | 44.9 | 44.1 |
| **Productivity indicators** |  |  |  |  |
| Cropping intensity (%) | 134 | 117 | 110 | 124 |
| % irrigated area to total cultivated area | 56.3 | 31.4 | 20.7 | 37.5 |
| Area irrigated more than once (% of total) | 56.8 | 30.0 | 13.0 | 100 |
| % of canal irrigated area (public investment) | 75.0 | 27.8 | 32.3 | 51.4 |
| % of well irrigated area (private investment) | 25.0 | 72.2 | 67.7 | 48.6 |
| Fertilizer consumption (kg/ha) | 294 | 211 | 119 | 217 |
| Farm mechanisation (number of tractor/1000 ha) | 9.20 | 7.21 | 5.19 | 7.40 |
| Average productivity of Paddy (kg/ha) | 2952 | 2381 | 2622 | 2759 |
| Average productivity of Groundnut (kg/ha) | 1106 | 918 | 1119 | 1082 |
| Average productivity of cotton (kg/ha) | 3045 | 2057 | 1234 | 2112 |

*(Cont. Table I )*

| | Region | | | |
|---|---|---|---|---|
| | Coastal | Telangana | Rayalaseema | A.P. |
| Land productivity (Rs/ha) at 1999-2000 constant prices | 18481 | 14176 | 8823 | 13827 |
| Per capita income (rural population) from agriculture/livestock (Rs/annum/capita) | 10963 | 8890 | 8620 | 9766 |
| Per capita income (total population) | 18929 | 16884 | 14918 | 17791 |
| Average wage rate (Rs/day) | 224.5 | 181.6 | 172.5 | 192 |
| Credit uptake per hectare (Rs/ha) | 38351 | 30704 | 14905 | 29441 |
| **Growth Rates (% per annum from 1966-2005)** | **Annual Compound Growth rate (%)** | | | |
| Per capita income (PCI) from Crops (Rs/annum) | 1.6 | 1.7 | 0.9 | 1.3 |
| PCI from livestock (Rs/annum) | 4.4 | 2.5 | 3.8 | 3.2 |
| PCI from agriculture and allied sector (Rs/annum) | 2.2 | 1.9 | 1.3 | 1.8 |
| Credit (Million Rupees) | 9.8 | 10.2 | 10.4 | 10.2 |
| Fertiliser (1000 tons) | 7.1 | 8.4 | 7.1 | 7.4 |
| Private investment (irrigated area by wells) | 4.8 | 5.1 | 2.1 | 3.1 |
| Literacy % | 2.8 | 3.8 | 2.8 | 3.1 |
| Farm mechanisation (Tractor equivalent ) | 2.1 | 2.3 | 2.8 | 2.3 |
| Urbanisation (%) | 0.7 | 2.0 | 0.6 | 1.5 |
| Number of market Yards (100 number) | 1.7 | 1.4 | 2.4 | 1.3 |
| Gross irrigated area (1000 ha) | 1.2 | 1.3 | 1.2 | 1.1 |
| Labour (1000 number) | 0.7 | 1.2 | 0.9 | 1.0 |
| Livestock (1000 number) | -0.1 | 0.6 | 0.0 | 0.3 |

**Source:** Statistical Abstracts of Andhra Pradesh: various issues.

### III. STATUS OF OCCUPATION AND INCOME OF HOUSEHOLDS

There was a significant difference in share of different occupational groups among different regions. Share of agricultural labour and self-employed in non-agriculture and other-households in total households are high in Coastal compared with other two regions, while share of self-employed in agriculture households is high in Telangana. In Rayalaseema, share of non-agricultural labour households is high compared with other two regions (Table II). The above figures indicate that the proportion of agricultural labour, self-employed in non-agriculture and service sector households is high in agriculturally developed region (Coastal) compared with agriculturally less developed regions (Telangana and Rayalaseema) (land productivity in Coastal region is Rs.18,481/ha as against Rs.14,176/ha in Telangana and Rs.8,823/ha in Rayalaseema region, Table I). The share of agricultural labour households is also high in Coastal due to high

demand for labour from labour intensive agriculture (mainly paddy, horticultural crops), which is further reinforced by high proportion of irrigated area (56 per cent of area under irrigation as against only 31 per cent in Telangana and 20.7 per cent in Rayalaseema) and high cropping intensity (134 per cent as against 117 per cent in Telangana and 110 per cent in Rayalaseema regions, Table 1) coupled with higher input use per hectare (fertilizer use/hectare) and mechanization (number of tractors/1,000 ha) in agriculture. It may also be due to the fact that developed agricultural sector in the Coastal region simultaneously increased the demand for tiny and small-scale agro-based self-employment opportunities (both input and output based) to supply inputs for highly mechanised agricultural sector as indicated from higher share of self-employed in non-agriculture households in total households. On the other hand, low-input and low-output and subsistence agriculture in Telangana and Rayalaseema regions did not raise the demand for agricultural labour; hence, most of the households are working on their own farm as self-employed in agriculture, and most of the times this results in disguised unemployment (Reddy 2006, Reddy *et al.* 2011 ).

TABLE II
**PER CENT DISTRIBUTION OF HOUSEHOLDS BY HOUSEHOLD OCCUPATION**

| Household Occupation | Region | | | |
|---|---|---|---|---|
| | Coastal | Telangana | *Rayalaseema* | A.P. |
| Self-employed in non-agriculture | 18.2 | 15.1 | 15.4 | 16.6 |
| Self-employed in agriculture | 25.4 | 36.3 | 28.6 | 29.9 |
| Agricultural labourer | 39.3 | 32.8 | 34.4 | 36.1 |
| Non-agricultural labourer | 4.0 | 5.8 | 10.3 | 5.8 |
| Others | 13.1 | 9.9 | 11.3 | 11.6 |
| All | 100.0 | 100.0 | 100.0 | 100.0 |
| Number of sample H/Hs | 2,598 | 1,976 | 976 | 5,550 |

The support services like availability of banking facilities, credit uptake, quality of extension services are not good in underdeveloped regions like Telangana and Coastal regions compared with Coastal regions due to lack of effective demand (Reddy, 2005, Reddy,2006). Further, due to non-availability of employment in farm sector, most of them are also involved as labourers in non-agricultural sector, mostly as manual labourers in construction activities under government programmes like Mahatma Gandhi National Rural Employee Guarantee Programme (MG-NREGA), which guarantees to provide employment for every unemployed for a minimum of 100 days per year at minimum guaranteed wage rates in the villages. The share of both Telangana and

Rayalaseema is higher in employment through MG-NREGA compared with their share in state rural population (Table I). This indicates that both agriculture and non-agricultural sectors are not able to generate adequate productive employment in both Telangana and Rayalaseema regions.

Broad occupational groups by educational standard (above 10+2 and up to 10+2 standard) is presented in Table III. From the table it is observed that higher educated (10+2 and above standard) are mostly engaged as "professional" and "trade and others" categories, whereas lower educated (up to 10+2 standard) are mostly engaged in farming, agricultural labour, and non-agricultural (manual) labourers. It indicates that non-farm sector comprises heterogeneous occupations with professionals and trade and others at higher end of the labour market having higher education and wage rates, whereas non-agriculture (manual) labourers, crafts/artisans at lower end with lower education and lower wage rates. It is interesting to note that, about 23 per cent of the higher educated in Rayalasema and about 13 per cent in Telangana are in farming, but in Coastal region only 7 per cent are doing farming as major occupation, with majority working in trade and as professionals in Coastal. This indicates that for higher educated there is little employment opportunities in Rayalaseema and Telangana compared with Coastal region at higher end of the job market.

TABLE III
**BROAD OCCUPATIONAL GROUP BY REGION (2007)**

| Region/Education | Agriculture | | Industry | | Services | | |
|---|---|---|---|---|---|---|---|
| | Farming | Agril. Labour | Non-Agril. (manual labour) | Craft/ artisans | Profess-ionals | Trade & Others | All |
| **Above 10+2 standard** | | | | | | | |
| Coastal | 7 | 6 | 3 | 8 | 46 | 30 | 100 |
| Telangana | 13 | 4 | 3 | 8 | 47 | 25 | 100 |
| Rayalaseema | 23 | 1 | 1 | 9 | 42 | 24 | 100 |
| **up to 10+2 standard** | | | | | | | |
| Coastal | 20 | 30 | 13 | 13 | 8 | 16 | 100 |
| Telangana | 22 | 30 | 13 | 13 | 9 | 13 | 100 |
| Rayalaseema | 34 | 18 | 10 | 11 | 12 | 15 | 100 |

**Source:** Sri Krishna Committee Report (2010) on Andhra Pradesh.

Another dimension of regional differences can be observed by studying the structure of expenditure quintiles by region which is presented in Table IV. The share of 1st quintile (lowest expenditure group) households (HHs) in total HHs is the highest in Rayalaseema (30 per cent), followed by Telangana (24 per cent)

and Coastal regions (14 per cent). On the other hand, the share of 5$^{th}$ quintile (highest expenditure group) HHs in total H/Hs is the highest in Coastal (24 per cent), followed by Telangana (17 per cent) and Rayalaseema (15 per cent). As already mentioned, these figures clearly show that in the agriculturally developed Coastal region the share of higher expenditure group HHs is higher, whereas in the agriculturally less developed regions (Rayalaseema and Telangana) the share of lower expenditure HHs is high.

TABLE IV
**PER CENT DISTRIBUTION OF HOUSEHOLDS BY
EXPENDITURE QUINTILES**

| Expenditure quintiles | Region | | | |
|---|---|---|---|---|
| | Coastal | Telangana | Rayalaseema | A.P. |
| 1$^{st}$ quintile (lowest) | 14.4 | 23.8 | 30.2 | 20.5 |
| 2$^{nd}$ quintile | 18.3 | 20.7 | 21.3 | 19.7 |
| 3$^{rd}$ quintile | 19.6 | 20.7 | 18.4 | 19.8 |
| 4$^{th}$ quintile | 23.8 | 18.3 | 14.9 | 20.3 |
| 5$^{th}$ quintile (highest ) | 23.9 | 16.6 | 15.1 | 19.8 |
| All | 100.0 | 100.0 | 100.0 | 100.0 |
| Number of sample H/Hs | 2,598 | 1,976 | 976 | 5,550 |

## IV. ACTIVITY STATUS OF WORKERS

The distribution of workers by employment activity status is presented in Table V. The table indicates that the share of self-employed is the highest in Telangana (62 per cent among men and 53 per cent among females), followed by Rayalaseema (57 per cent in males and 51 per cent in females) and Coastal regions (56 per cent in males to 52 per cent in females). Share of casual labourers is the highest in Coastal (36 per cent in males and 44 per cent in females), followed by Rayalaseema (35 per cent in males and 45 per cent in females) and Telangana in both sexes (30 per cent in males to 41 per cent in females). Regular employment is high in Telangana (8.3 per cent in males and 6 per cent in females) and low in Coastal (about 7.9 per cent in males and 3.3 per cent in females). It also confirms that the higher share of self-employment in both Telangana and Rayalaseema is an indication of higher disguised unemployment with low land and labour productivity, showing little gainful employment opportunities as wage earners compared with Coastal region. In coastal region,

there is a good demand for casual labourers from the high productive agricultural sector (Table I).

TABLE V
**PER CENT DISTRIBUTION OF WORKERS BY ACTIVITY STATUS**

| Activity Status of Employment | Region | | | |
|---|---|---|---|---|
| | Coastal | Telangana | Rayalaseema | AP |
| *Male* | | | | |
| Self-employed | 56.8 | 62.1 | 57.6 | 58.9 |
| Regular employed | 8.0 | 8.2 | 8.0 | 8.0 |
| Casual labourer | 35.3 | 29.7 | 34.4 | 33.0 |
| Total | 100.0 | 100.0 | 100.0 | 100.0 |
| Total number of sample workers | 2,946 | 2,510 | 1,297 | 6,753 |
| *Female* | | | | |
| Self-employed | 52.8 | 53.1 | 52.7 | 52.9 |
| Regular employed | 3.5 | 6.0 | 3.9 | 4.7 |
| Casual labourer | 43.7 | 40.9 | 43.4 | 42.4 |
| Total | 100.0 | 100.0 | 100.0 | 100.0 |
| Total number of sample workers | 1,608 | 2,030 | 799 | 4,437 |

## Sector of Employment

The share of agricultural workers is the highest among men in Telangana (76 per cent), followed by Coastal (70 per cent) and Rayalaseema (66 per cent); among women the share of agricultural workers is also high in Telangana (85 per cent), but the least in Coastal (76 per cent). With the development of agricultural sector, there is a simultaneous increase in demand for both inputs and non-agricultural goods and services, which increases the share of non-agricultural sector workers in total work force. This process is further strengthened by farm mechanization (number of tractors/1000 ha is higher in Coastal followed by Telangana and Rayalaseema, Table I) and commercialization that reduces demand for agricultural workers in total work force in Coastal region (Table VI).

Among females, the share of non-agricultural workers is the highest in Coastal region (24.2 per cent) and the least in Telangana region (16.4 per cent).

TABLE VI
**PER CENT DISTRIBUTION OF WORKERS BY
SECTOR OF EMPLOYMENT**

| Sector of Employment | Region | | | |
|---|---|---|---|---|
| | Coastal | Telangana | Rayalaseema | AP |
| **Male** | | | | |
| Agriculture | 69.9 | 75.7 | 65.8 | 71.3 |
| Industry | 17.3 | 15.2 | 24.3 | 17.8 |
| Services | 12.8 | 9.2 | 9.9 | 10.9 |
| Total | 100.0 | 100.0 | 100.0 | 100.0 |
| Total number of sample workers | 2,946 | 2,510 | 1,297 | 6,753 |
| **Female** | | | | |
| Agriculture | 75.8 | 84.6 | 79.9 | 80.6 |
| Industry | 14.9 | 12.6 | 13.3 | 13.6 |
| Services | 9.3 | 2.8 | 6.8 | 5.9 |
| Total | 100.0 | 100.0 | 100.0 | 100.0 |
| Total number of sample workers | 1,608 | 2,030 | 799 | 4,437 |

## Employment Sector/Activity Status

The share of self-employed in agriculture is the highest in Telangana (48 per cent), followed by Rayalaseema (42 per cent) and Coastal (39 per cent) regions (Table 7). The share of casual labourers in agriculture is quite high in Coastal (30 per cent), closely followed by Telangana (25 per cent) and Rayalaseema (23 per cent). Telangana and Rayalasema regions are dominated by rainfed crops like rainfed cotton, groundnut, pulse crops like gram, red gram and coarse cereals like sorghum which require low hired labour unlike in the Coastal region where paddy and other commercial crops like irrigated cotton, tobacco, fruits and vegetables which require more hired casual labour; hence, Rayalaseema and Telangana regions have less casual labourers than the Coastal region (Reddy, 2010). The share of self-employed in services is quite high in Coastal (7 per cent) compared with other two regions. Higher self-employed in services in Coastal region is also due to a combination of factors like high demand from high input-output agricultural sector, higher number of small towns, big villages with population more than 1,000 households and higher population density and higher per capita income (Table I). Regular employed in agriculture is high in Telangana due to feudal relations between farmers and labourers and interlinked credit-labour markets in this region since the Nizams period (Reddy 2010). Both the share of self-employed and casual labourers in industry are quite high in Rayalaseema region compared with other two regions.

As in the Rayalaseema region agriculture and service sectors (trade and professionals) have not flourished much, most of the households remain in traditional artisan/crafts like handlooms etc for their livelihoods which are less

productive since many decades (Reddy 2010). The same trend is also observed among women but slightly higher share of casual labourers in agriculture compared with self-employed in agriculture are reported. Most of the casual labourers are working in agricultural sector and very few are working in industrial and service sectors, as both industrial(handlooms/crafts/artisans) and services sectors (like trade/professionals) are not able to absorb much hired labour due to their small scale nature and are only capable of providing employment to their own family members. Further, sparse populated regions like Rayalasema and Telangana also suffer from constraints like credit and market etc to upscale their activities (Reddy 2010, 2005). The share of regular employed is high in Telangana (8.3 per cent in males and 6 per cent in females) and low in Coastal (about 7.9 per cent in males and 3.3 per cent in females) with higher concentration in service sector in all regions.

TABLE VII
**PER CENT DISTRIBUTION OF WORKERS BY SECTOR/ACTIVITY STATUS OF EMPLOYMENT**

| Sector/activity status of workers | Region | | | |
|---|---|---|---|---|
| | Coastal | Telangana | Rayalaseema | AP |
| **Male** | | | | |
| Self-employed in agriculture | 39.0 | 48.6 | 42.0 | 43.1 |
| Self-employed in industry | 11.0 | 9.5 | 11.8 | 10.6 |
| Self-employed in services | 6.7 | 4.0 | 3.8 | 5.1 |
| Regular employed in agriculture | 0.8 | 2.2 | 0.8 | 1.3 |
| Regular employed in industry | 1.9 | 1.9 | 2.4 | 2.0 |
| Regular employed in services | 5.3 | 4.1 | 4.8 | 4.8 |
| Casual labourer in agriculture | 30.1 | 24.9 | 23.0 | 26.8 |
| Casual labourer in industry | 4.4 | 3.8 | 10.1 | 5.2 |
| Casual labourer in services | 0.8 | 1.0 | 1.3 | 1.0 |
| Total | 100.0 | 100.0 | 100.0 | 100.0 |
| Total number of sample workers | 2,946 | 2,510 | 1,297 | 6,753 |
| **Female** | | | | |
| Self-employed in agriculture | 32.7 | 45.5 | 40.6 | 40.0 |
| Self-employed in industry | 13.5 | 6.0 | 9.4 | 9.3 |
| Self-employed in services | 6.6 | 1.6 | 2.8 | 3.6 |
| Regular employed in agriculture | 0.8 | 0.5 | 0.5 | 0.6 |
| Regular employed in industry | 0.1 | 4.5 | 0.1 | 2.1 |
| Regular employed in services | 2.6 | 1.1 | 3.2 | 2.0 |
| Casual labourer in agriculture | 42.2 | 38.6 | 38.8 | 40.0 |
| Casual labourer in industry | 1.3 | 2.2 | 3.7 | 2.1 |
| Casual labourer in services | 0.1 | 0.2 | 0.8 | 0.3 |
| Total | 100.0 | 100.0 | 100.0 | 100.0 |
| Total number of sample workers | 1,608 | 2,030 | 799 | 4,437 |

## V. EMPLOYMENT STATUS

Work Participation Rate (WPR) is the per cent of population (above 15 years of age) who are actively engaged in employment during the survey period. WPR is low and unemployment is high in Coastal for both men and women, whereas WPR is high and unemployment is low in both Telangana and Rayalaseema (Table VIII). This indicates even though Coastal region is well developed agriculturally and industrially, unemployment is high due to high reservation wage rate (due to higher per capita income), non-availability of desirable employment opportunities to suite higher educated persons, high population density and high capital intensive nature of agricultural and non-agricultural sectors in this region (Table VII). WPR is 35 per cent less for females compared to male counterparts. WPR among women is high in Telangana (67 per cent) and Rayalaseema (52 per cent) regions where per capita income is less than Coastal region (45 per cent). This indicates that female WPR is much less, unemployment is double and who attend household domestic duties (others) is higher in agriculturally developed regions compared with agriculturally less developed regions. This is mainly due to the tradition of not sending women for work unless the households are not able to meet their livelihoods with other means. Among high income households, women generally do not prefer to work as casual labourers/self-employed in agriculture, they only look after household duties like firewood collection, poultry/dairy, grinding food grains, cow dung preparation for cooking, kitchen garden, children rearing, bringing drinking water, etc**.** (Table IX).

TABLE VIII
**PER CENT DISTRIBUTION OF PERSONS BY EMPLOYMENT STATUS**

| Employment status | Region | | | |
|---|---|---|---|---|
| | Coastal | Telangana | Rayalaseema | AP |
| **Male** | | | | |
| Fully employed | 82.0 | 85.5 | 84.9 | 83.8 |
| Underemployed | 0.4 | 0.3 | 0.6 | 0.4 |
| Work Participation Rate | 82.4 | 85.8 | 85.5 | 84.2 |
| Unemployed | 3.8 | 1.6 | 2.3 | 2.7 |
| Student | 4.9 | 5.2 | 3.1 | 4.7 |
| Others | 8.9 | 7.6 | 9.1 | 8.4 |
| Total | 100.0 | 100.0 | 100.0 | 100.0 |
| Total number of sample persons | 3,574 | 2,929 | 1,517 | 8,020 |

*(Cont. Table VIII)*

| Employment status | Region | | | |
|---|---|---|---|---|
| | Coastal | Telangana | Rayalaseema | AP |
| **Female** | | | | |
| Fully employed | 43.3 | 66.8 | 51.3 | 53.6 |
| Underemployed | 2.1 | 0.6 | 1.0 | 1.3 |
| Work Participation Rate | 45.4 | 67.4 | 52.3 | 54.9 |
| Unemployed | 2.7 | 1.3 | 1.3 | 1.9 |
| Student | 2.0 | 2.5 | 2.1 | 2.2 |
| Others (households domestic duties) | 49.9 | 28.8 | 44.3 | 41.0 |
| Total | 100.0 | 100.0 | 100.0 | 100.0 |
| Total number of sample persons | 3,544 | 3,012 | 1,528 | 8,084 |

TABLE IX
**WOMEN PARTICIPATION IN DIFFERENT HOUSEHOLD
ACTIVITIES WHO REPORTED 'OTHERS'**

| Household Activities of Women | % of total |
|---|---|
| Fire wood collection | 24.8 |
| Poultry/dairy | 16.4 |
| Grinding food grains | 8.5 |
| Cow dung preparation | 8.4 |
| Kitchen garden | 6.3 |
| Tutoring | 6.0 |
| Sewing/tailoring | 4.8 |
| Fish/fruit/vegetable preservation | 3.7 |
| Husking paddy | 2.3 |
| Total | 100.0 |

## VI. RESULTS OF MULTINOMIAL REGRESSION ANALYSIS OF HOUSEHOLD OCCUPATION

The multinomial regression analysis is widely used in employment choice models. It determines which variables influence the choice of occupation (type of sector/status of employment) of workers. The multinomial model requires that a particular occupational category be designated as the numerate against which all results should be compared. The study uses household data for the analysis. The study considers self-employed in agriculture as the comparison group as these households are predominant in rural India. Choosing this group for comparison purposes allows us to ask whether other occupational groups can be regarded as

systematically different in any manner. This implies that parameter estimates for the categories which are included should be interpreted not as correlates of employment in a given occupational category, but as indicators of the strength of association of a particular explanatory variable with respective occupational group relative to the same explanatory variable of the self-employed in agriculture households. The parameter estimates along with t-statistics of variables included are given in Table X. All occupational groups have significant negative association with size of landholding compared to self-employed in agriculture, which indicates that having more land necessarily increases self-employment options in agriculture compared to all other occupations. Scheduled tribes are less likely to work as self-employed in non-agriculture compared to self-employed in agriculture, as most of the scheduled tribes live on forest lands and hills with subsistence farming as the main occupation with little connection to outside markets and little dependence on non-agricultural sector for both inputs and outputs. Scheduled castes are more likely to be engaged as agricultural labourers, non-agricultural labourers and other occupations compared to self-employed in agriculture, as even though they live within villages, they do not have any asset base (either land or any other non-farm assets like handlooms, etc.) and mostly earn income by working as agricultural or non-agricultural labourers. Other backward classes are more likely to be engaged as self-employed in non-agriculture and as non-agricultural labourers compared to upper castes as they are traditionally artisan/crafts men community with necessary skill set to make handlooms etc with little land to engage in farming. Households with large family size are less likely to be in other occupations and more likely to be engaged as self-employed in non-agriculture, agricultural labour occupations compared to self-employed in agriculture.

TABLE X
**PARAMETER ESTIMATES OF HOUSEHOLD PRINCIPAL OCCUPATION (AGAINST SELF-EMPLOYED IN AGRICULTURE AS THE BASE CATEGORY) CHOICE MODEL**

| Explanatory Variables | Self-employed in non-agriculture | | Agricultural labour | | Non-agricultural Labour | | Others households | |
|---|---|---|---|---|---|---|---|---|
| | Coefficient | t | Coefficient | t | Coefficient | t | Coefficient | t |
| Intercept | -2.09** | -4.4 | 0.18 | 0.4 | -1.90 | -3.2 | -2.78 | -5.2 |
| Log (land) | -2.53** | -28.0 | -2.25** | -27.3 | -2.80** | -23.8 | -1.94** | -20.6 |
| Family size | 0.18** | 4.1 | 0.11** | 2.9 | -0.07 | -1.0 | -0.91** | -11.7 |
| **Educational level of Head of hhs dummies** | | | | | | | | |
| Below primary | 0.41* | 2.5 | -0.56** | -3.8 | 0.29 | 1.3 | 0.33 | 1.6 |

*(Cont. Table X)*

| Explanatory Variables | Self-employed in non-agriculture | | Agricultural labour | | Non-agricultural Labour | | Others households | |
|---|---|---|---|---|---|---|---|---|
| | Coefficient | t | Coefficient | t | Coefficient | t | Coefficient | t |
| Primary | 0.68** | 3.7 | -0.74** | -4.1 | 0.23 | 0.9 | 0.75** | 3.3 |
| Middle & secondary | 0.65** | 3.7 | -1.07** | -6.2 | -0.01 | -0.2 | 1.13** | 5.9 |
| Higher secondary | 0.78* | 2.2 | -0.99* | -2.5 | -0.86 | -1.1 | 2.31** | 7.4 |
| Graduate and above | 1.45** | 4.1 | -1.87** | -2.9 | -0.93 | -0.9 | 3.25** | 10.6 |
| Age (in years) | 0.03 | 0.3 | -0.32** | -3.5 | -0.17 | -1.2 | 0.56** | 4.7 |
| **Social group dummies** | | | | | | | | |
| Schedule tribe | -0.78** | -3.1 | 0.30 | 1.7 | -0.88 | -1.8 | -0.03 | -0.1 |
| Schedule caste | 0.27 | 1.3 | 1.92** | 11.6 | 1.86* | 7.3 | 1.09** | 5.1 |
| Backward caste | 0.35** | 2.6 | .50** | 4.0 | 0.90* | 4.3 | 0.23 | 1.4 |
| Sex of head (male=0; female=1) | -0.42 | -1.9 | -0.02 | -0.1 | -0.25 | -0.9 | 0.43* | 2.0 |
| **Regional dummies** | | | | | | | | |
| Coastal | -0.71** | -4.4 | 0.78** | 5.7 | 2.11* | 10.2 | 0.67* | 3.7 |
| Telangana | -0.45** | -2.8 | -.73** | -5.3 | 1.18* | 5.9 | 0.37* | 1.9 |
| Number of sample observations | 804 | | 1796 | | 273 | | 534 | |
| Model Fitting Information | | | | | | | | |
| -2 LLR | 7356.9 | | | | | | | |
| Chi-Square | 4224.5 | | | | | | | |
| Df | 56 | | | | | | | |
| Pseudo R-Square | 0.609 | | | | | | | |
| Total sample households | 4948 | | | | | | | |

**Note:** ** and  * indicate significant at 1per cent and 5 per cent level respectively; self-employed in agriculture is reference category, Number of sample observations in self-employed in agriculture was 1547. Outlier observations have been removed from the regression by using filtering method.

The regression model indicates that education of head of household plays a crucial role in determining household principal occupation. Below primary up to secondary education level has positive and significant association with both self-employed in non-agriculture and other occupations, but negative association with agricultural labour occupation. Higher secondary education do not have significant positive association with self-employed in non-agriculture and other occupations, but insignificant in the case of all other occupations. Similarly, education at levels of graduate and above does have strong negative association with agricultural labourers but significant positive association with self-employed in non-agriculture and other occupations. All educational statuses *i.e.,* below primary up to graduate, labour households have negative coefficient and the magnitude of the coefficients become significantly stronger as educational status increases. Other occupations have strong significant positive association only at above mid level education of the head of household. A little education of a head of household will raise the household's chances to be in self-employed in non-

agriculture compared with self-employed in agriculture households. Age of head of household has significant positive association with other occupations compared to self-employed in agriculture. Households belong to Coastal region have more probability to earn major share of income from agricultural labour, non-agricultural labour and other occupations (professionals and trade), while less likely to earn from self-employed in non-agriculture compared to self-employed in agriculture.

As described earlier, surplus generated from the prosperous agricultural sector in the Coastal region is invested in higher education which creates employment in professionals and trade, in farm sector and mechanization increasing commercialization within farm sector which increases demand for casual labourers in agriculture. While households belonging to Telangana region are less likely to earn livelihood from self-employed in non-agriculture and agricultural labourers, they are more likely to earn from non-agricultural labour and other-occupations (professionals and traders) compared to households in Rayalaseema mainly due to the influence of large urban conglomerate (Hyderabad metropolitan city). Cox pseudo $R^2$ explains about 59 per cent of the variation in the categorical dependent variable. So the model explains considerable variation in choice of household's major source of income from the household and regional factors. In short, household characteristics play an important role in deciding household's major source of income. Household choice of major occupation, to a considerable extent, is determined by a host of household characteristics such as landholding, family size, educational status of household head, age of head of household. The physical capital and human capital indicators *i.e.,* size of land holding, education of head of household and age of head of household have significant negative association with inferior (agricultural labour) occupation, levels of education of head of household make significant difference between agricultural labour households and non-agricultural labour households as in non-agricultural labour households. Primary education and medium education turn out to be insignificant. Secondary and above education of head of household does have positive association only with other households (professionals and trade). On the whole, higher education, asset holding such as size of land holding have significant positive association with high remunerative occupations (other occupations). However, social and traditional variables such as scheduled caste households have significant positive association with agricultural labour in agriculture. Household size and composition of the household also play an important role in the case of choice of household occupation; for example, family size has significant positive association with self-employed in agriculture and agricultural labour occupations. It is interesting to note that after controlling for all the above household characteristics, the influence of regional dummies is significant; hence, regional

characteristics like general literacy rate ( per cent of literate population), land productivity, per capita income, cropping pattern (labour intensive versus capital incentive), farm mechanization, etc. are also significant determinants of the choice of occupation of households.

**Sector of Employment of Workers**

Unlike in the above household occupational choice model, in this model we have used data on individual workers combining both sexes. In the sectoral analysis, three sectors namely agriculture, industry and services are taken for analysis. The study adopts employment in agricultural sector as comparison group as any shift from this sector to non-agricultural sector is considered beneficial for workers and to the economy of rural India. The expected probability of working in industry and services is less for workers belonging to large landholding households compared with working in agricultural sector. As in activity status, we consider five education dummies to represent the person's educational level which includes literate but below primary, primary, middle and secondary, higher secondary and graduate and above. Below primary educated up to graduate has significant positive association with both industry and service workers compared with agricultural workers. The significance and magnitude increase as educational level rises. The coefficients have high magnitude and significance among higher educated for service workers compared with industrial workers (Table XI). It indicates that the probability of being service workers is higher among higher educated workers compared with even industrial workers.  Age, as a proxy for experience, has significant positive association with service sector employment compared to agricultural workers, but in the case of industrial workers, it turns to be insignificant. Scheduled tribes and scheduled caste workers are less likely to be employed in industrial and service sectors compared with agricultural sector; however, other backward caste workers do not show any significant association. In other words, social discrimination still exists in rural areas, especially for scheduled tribe and caste workers, but it is not the case with other backward caste workers after controlling for educational level and size of land holdings. The probability of employment of female workers is less in service sector compared to agricultural sector employment. While probability of workers in costal region to be engaged in industry is higher, the probability of workers in Telangana region to be engaged in both services and industry is less than those in Rayalaseema region. Hence, we can conclude that, for residents of Telangana, the probability of engaging in non-agricultural activities is less than in Rayalaseema region after controlling for household characteristics.

TABLE XI
**PARAMETER ESTIMATES OF SECTOR OF EMPLOYMENT AGAINST
EMPLOYMENT IN AGRICULTURAL SECTOR AS REFERENCE CATEGORY
AMONG WORKERS OF ABOVE 15 YEARS OF AGE**

| Explanatory variable | Sector of employment | | | |
|---|---|---|---|---|
| | Service Coefficient | t-statistics | Industry Coefficient | t-statistics |
| Intercept | -2.83 | -8.6 | -0.76 | -3.0 |
| Ln (land) | -0.42* | -23.6 | -0.54* | -34.6 |
| Educational level dummies | | | | |
| Below primary | 0.33 | 2.0 | 0.84** | 7.8 |
| Primary | 0.72 | 4.8 | 1.22** | 11.4 |
| Middle &secondary | 1.74* | 14.7 | 1.54** | 17.3 |
| Higher secondary | 3.02** | 16.4 | 1.84* | 9.4 |
| Graduate and above | 3.73** | 20.6 | 1.62* | 7.3 |
| Age group | 0.42 | 5.9 | 0.23 | 3.4 |
| Social group dummies | | | | |
| Schedule tribe | -0.82** | -3.3 | -0.92** | -6.5 |
| Schedule caste | -0.22 | -1.6 | -0.91** | -9.3 |
| Back ward caste | 0.72 | 6.6 | -0.14 | -1.7 |
| Sex of person (female =1; male=0) | -0.33 | -3.7 | -0.12 | -1.7 |
| Regional dummies | | | | |
| Coastal | 0.11 | 0.5 | 0.64* | 6.8 |
| Telangana | -0.34* | -2.7 | -0.34* | -3.6 |
| Sample size | 896 | | 1,654 | 8,222 |
| Model Fitting Information | | | | |
| -2 LLR ratio | 6535.0 | | | |
| Chisquire | 2965.4 | | | |
| Df | 26 | | | |
| Sig. | 0 | | | |
| Psuedo R squire | 0.31 | | | |
| Total no. of sample workers | 10,772 | | | |

**Note:** Number of observations in base category (agricultural workers) was 8222. Outlier observations have been removed from the regression by using filtering method.
** significant at 1 per cent and * indicates significant at 5 per cent level

The selected socio-economic variables *viz.,* household characteristics such as*,* household, assets (land cultivated), social group, and personal characteristics such as educational level, age (experience), sex and regional dummies together explain about 30 per cent of the variation in sector of employment.

**Factors Influencing Weekly Wage Earnings**

Weekly wage earnings (it considered only earnings from wages per week, irrespective of actual number of days worked in a week) are Rs 250 for males and Rs 134 for females in 2004-05 at constant prices of 1999-2000 in rural

Andhra Pradesh. Weekly wage earnings are high in higher-educated as compared with lower-educated workers. Workers of scheduled tribe and scheduled caste are reported to have lower wage earnings in both years compared with upper castes as they mostly work in low quality employment like agricultural labourers. Workers belonging to Coastal region report higher wage earnings followed by Rayalaseema and the least is reported in Telangana region (Table XII). Average wage earnings of non-Hindus are higher compared to Hindus as non-Hindus are mostly engaged in non-agricultural sector. Child workers report low wage earnings i.e., only Rs 113.70 per week.

TABLE XII
**12 WAGE EARNINGS PER WEEK DURING 1999-2000 AND 2004-05 AT CONSTANT 1999-2000 PRICES**

| Weekly wage earnings (Rs) | | | | Weekly wage earnings (Rs) | | | |
|---|---|---|---|---|---|---|---|
| Variable | 1999-2000 | 2005-05 | Change (%) | Variable | 1999-2000 | 2004-05 | Change (%) |
| **Education level** | | | | **Age group** | | | |
| Illiterate | 121.8 | 152.9 | 25.5 | Child | 88.8 | 113.7 | 28.0 |
| Below primary | 149.2 | 179.8 | 20.5 | Young | 141.2 | 179.0 | 26.8 |
| Primary | 174.7 | 217.7 | 24.6 | Aged | 189.3 | 221.3 | 16.9 |
| Middle &secondary | 240.0 | 242.2 | 0.9 | Old | 109.8 | 126.3 | 15.0 |
| Higher secondary | 538.2 | 603.9 | 12.2 | **Region** | | | |
| Graduate and above | 685.2 | 737.3 | 7.6 | Coastal | 180.3 | 224.5 | 24.5 |
| **Social group** | | | | Telangana | 154.0 | 181.6 | 17.9 |
| Scheduled tribe | 140.5 | 162.1 | 15.4 | Rayalaseema | 146.1 | 172.5 | 18.1 |
| Scheduled caste | 143.4 | 195.9 | 36.6 | **Income group** | | | |
| Upper caste | 182.0 | 214.6 | 17.9 | Very poor | 113.5 | 135.4 | 19.3 |
| Hindu | 164.9 | 202.2 | 22.6 | Poor | 125.5 | 150.1 | 19.6 |
| Non-Hindu | 184.0 | 193.8 | 5.3 | Medium | 148.5 | 200.5 | 35.0 |
| **Gender** | | | | Non-poor lower | 163.0 | 181.6 | 11.4 |
| Male workers | 210.0 | 250.0 | 19.0 | Non-poor higher | 339.2 | 361.2 | 6.5 |
| Female workers | 107.0 | 134.0 | 25.2 | Total | 166.5 | 201.0 | 20.7 |

To estimate the differential impact of human capital and other physical capital's influence on weekly earnings of casual labourers in agriculture, the study estimated a regression equation with 'weekly earnings of casual labourers in agriculture' as dependent variable (Table XIII). Among all educational dummies, only middle educational level has significant positive association with wage rates. This confirms the earlier findings that weekly wage earnings of casual labourers are not associated with the level of education. Age as proxy for

experience also has positive association with weekly earnings. Male workers earn higher wages than female workers. Workers belonging to both Coastal and Telangana regions earn higher wages than Rayalaseema region workers after controlling for household characteristics. It means that there is little scope for educated workers to enhance their earnings within agricultural sector; hence, invariably they have to diversify to non-agricultural sector to increase their weekly earnings.

TABLE XIII
**FACTORS INFLUENCING WEEKLY WAGE EARNINGS OF CASUAL LABOURER IN AGRICULTURAL WORKERS (WEEKLY WAGE EARNINGS AS DEPENDENT VARIABLE)**

| Independent variables | Casual labourer in agriculture | | |
|---|---|---|---|
| | Coefficient | t-statistics | Standardised coefficient |
| (Constant) | 5.454** | 22.9 | |
| Ln(land) | -0.020** | -3.8 | -0.060 |
| Educational level dummies | | | |
| Below primary | -0.023 | 0.0 | 0.000 |
| Primary | 0.087 | 1.5 | 0.025 |
| Middle secondary | 0.039 | 1.8 | 0.029 |
| Higher secondary | 0.024 | 0.3 | 0.005 |
| Graduate and above | 0.309 | 1.7 | 0.026 |
| Age Group | 0.054** | 3.6 | 0.057 |
| Sex (male=0; female=1) | -0.422** | -23.6 | -0.376 |
| Regional dummies | | | |
| Coastal | 0.190** | 6.6 | 0.147 |
| Telangana | 0.156** | 9.0 | 0.200 |
| Adjusted R square | 0.21 | | |
| Number of sample workers | 3,481 | | |

* Indicates significant at 5 per cent level and ** indicates significant at 1 per cent level.
Outlier observations have been removed from the regression by using filtering method.

## VII. CONCLUSION AND POLICY SUGGESTIONS

The paper analyses the regional difference in employment, unemployment and income in rural Andhra Pradesh, India in the backdrop of demand for a separate state of Telangana. The study also assesses what are the factors that influence the choice between agriculture and non-agricultural occupations and also among self-employed, regular employed and casual labourers. The empirical results are based on unit level data of rural households of Andhra Pradesh based

on employment and unemployment surveys conducted by the National Sample Survey Organisation (NSSO) in its 61st round covering the period 2004-05. Descriptive statistics, multinomial logit models and simple regression models are used to attain the objectives of the study. Andhra Pradesh is divided into three distinct regions namely Coastal, Telangana and Rayalaseema. Of these regions, the Coastal region is more prosperous with higher per capita income, due to high productive agriculture, followed by Telangana region and the least developed region is Rayalaseema. Work Participation Rate (WPR) is low and unemployment is high in agriculturally developed Coastal region for both men and women, whereas WPR is high and unemployment is low in both Telangana and Rayalaseema. This indicates even though Coastal region is well developed, unemployment and underemployment are high due to capital intensive nature of the agricultural sector in this region and also due to high reservation wage rate for many workers, whose per capita income is higher. The share of agricultural workers is low in the Coastal region compared with Telangana and Rayalaseema regions. With the development of high-input and high-output agricultural sector, there is a simultaneous increase in demand for inputs for agriculture and non-agricultural goods and services, which increases the share of non-agricultural sector workers in total work force in the Coastal region. The share of self-employed is higher in both Telangana and Rayalaseema regions compared with the Coastal region. Some studies point out that the higher share of self-employed in agriculture in low productivity regions like Telangana and Rayalaseema is a sign of disguised unemployment (Datt and Ravallion 1994, Desai and Mazumdar 1970). Average weekly earnings in rural Andhra Pradesh are Rs. 250 for males and Rs. 134 for females in 2003-04 at constant prices of 1999-2000. Weekly wage earnings are higher for males, higher educated, upper caste workers compared with their other counterparts. The Coastal region reports higher wages compared with Telangana and Rayalaseema regions. Regular employed in services (mostly professionals and traders) records the highest wage earnings, while casual labourers in agriculture report the lowest weekly earnings. Overall, there is a 21 per cent increase in real wage earnings during 1999-2000 to 2004-05 with a 19 per cent increase in male earnings and 25 per cent increase in females earnings. This shows that even though there are high gender differences in weekly wage earnings, there is a trend towards decline in gender differences in wage income. There is little scope for educated workers to enhance their earnings within agricultural sector; hence, invariably they have to diversify to non-agricultural occupations to increase their weekly earnings.

## REFERENCES

Directorate of Economics and Statistics, Government of Andhra Pradesh. 2011. *Andhra Pradesh State Statistical Abstracts*, various issues.

Datt, G. and M. Ravallion. 1994. "Transfer Benefits From Public-Works Employment: Evidence for Rural India." *The Economic Journal,* 104(427):1346-69.

Desai, M. and D. Mazumdar. 1970. "A Test of the Hypothesis of Disguised Unemployment." *Economica* New Series, 37(145):39-53.

NSSO. 2007. *Household Employment and Unemployment Survey Unit Data, 61st round (July 2004-June 2005).* National Sample Survey Organization, Ministry of Statistics and Programme Implementation, Government of India.

Reddy A. A. 2004. "Consumption Pattern, Trade and Production Potential of Pulses." *Economic and Political Weekly*, 39 (44):4854-4860.

———2005. "Banking Sector Deregulation and Productivity Change Decomposition of Indian Banks." *Finance India*, XIX(3):983-1001.

———2006. "Productivity Growth in Regional Rural Banks." *Economic and Political Weekly*, XLI(11):1079-1086.

———2009a. "Pulses Production Technology: Status and Way Forward." *Economic & Political Weekly*, 44(52):73-80.

———2009b. "Policy Options for India's Edible Oil Complex." *Economic and Political Weekly*, 44(4):22-24.

———2010a. "Regional Disparities in Food Habits and Nutritional Intake in Andhra Pradesh, India." *Regional and Sectoral Economic Studies,* 10-2 :125-134.

———2010b. "Disparities in Agricultural Productivity Growth in Andhra Pradesh." *Indian Economic Journal*, 58(1):134-154.

Reddy, A.A., Ch. Radhika Rani and G.P. Reddy .2011. "Policy Options for Edible Oil Complex in India under WTO Regime." *Journal of Rural Development*, 30(1): 11-24.

Reddy, A. A. and P. Kumar. 2006. "Occupational Diversification of Households in Rural Andhra Pradesh." *Journal of Indian School of Political Economy*, Jan-June:77-91.

The Inter State Council Secretariat (ISCS). 2010. Sri Krishna Committee Report Committee for Consultations on the Situation in Andhra Pradesh, Ministry of Home Affairs, Government of India, New Delhi, Pp. 425.