Labour Utilization Patterns in Identified Farming System in Chittoor District of Andhra Pradesh

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Abstract: *The supply shortages of labour and the resultant high wages are regarded as one of the major reasons for the poor performance of the agriculture sector in India. This paper has to look into labour use pattern in different farming systems in the Chittoor district of Andhra Pradesh. This paper has realised labour substitution pattern and gender discrimination. This analysis has shown a steady decline in human employment in the farming system of study area. The data were collected from 90 respondents pertaining Chittoor district of Andhra Pradesh during 2012-13.*

Keywords: Agricultural labour, labour substitute, cattle labour, human labour, machine labour.

1. Introduction

Agriculture constitutes one of the most crucial sectors of Indian economy by virtue of its being the single largest contributor to National Gross Domestic product (GDP) which hover around 15.7 percent (2011). With the declining farm sizes, it is becoming increasingly difficult to produce enough food to country. At the farmer's level, the incomes that were obtained from the small holdings are not adequate to meet the requirements of the family with no scope existing to increase the land area there is a possibility to enhance the income of the farmers through farming systems approach. This forms the background of the present study.

2. Methodology

The study will be conducted in Chittoor district of Andhra Pradesh. In the selected district, the farming systems practiced will be identified along with the mandals. From the mandals identified two mandals with existing farming system will be purposively chosen. Following the same criteria three villages will be selected from each mandal. From the villages so selected 30 farmers from each farming systems will be randomly selected. The collected data were analysed using statistical techniques such as, mean, percentages and ratios for better precision of analysis.

3. Results and Discussion

3.1 Labour utilization pattern in farming system- I

The human labour utilisation revealed that sugarcane demanded heavy amount of human labour utilisation followed by *rabi* groundnut, *kharif* paddy, *kharif* groundnut, *rabi* paddy, bajra and dairy with 95.3, 68.14, 64.71, 61.3, 44.54, 36.13 and 30.83 man days respectively. The human labour utilisation in whole farming system was 400.96 man days.

The cattle labour utilisation revealed that sugarcane demanded heavy amount of cattle labour utilisation followed by *rabi* paddy, *rabi* groundnut. *kharif* paddy, *kharif* groundnut and bajra with 15.38, 12.80, 11.43, 10.71, 9.62

and 6.07 cattle pair days respectively. The cattle labour utilisation in whole farming system was 66.01.

The machine labour utilisation revealed that sugarcane demanded heavy namount of machine labour utilisation followed by *rabi* paddy, *rabi* groundnut. *kharif* groundnut, bajra and *kharif* paddy with 4.07, 3.67, 3.19, 2.92, 2.73 and 2.57 machine hours respectively. The machine labour utilisation in whole farming system was 19.15.

3.2 Labour utilization pattern in farming system – II

The human labour utilisation revealed that *kharif* paddy demanded heavy amount of human labour utilisation followed by *rabi* groundnut, ragi, fodder jowar, *kharif* groundnut, *rabi* paddy and poultry with 125.0, 115.0, 91.75, 81.5, 65.26, 49.92 and 37.9 man days respectively. The human labour utilisation in whole farming system was 566.33.

The cattle labour utilisation revealed that *kharif* paddy demanded heavy amount of cattle labour utilisation followed by *rabi* paddy, *kharif* groundnut, ragi, *rabi* groundnut and fodder jowar with 11.75, 10.46, 9.30, 8.25, 7.80 and 3.00 cattle pair days respectively. The cattle labour utilisation in whole farming system was 50.56.

The machine labour utilisation revealed that ragi demanded heavy amount of machine labour utilisation followed by *rabi* groundnut, *rabi* paddy. *kharif* paddy, *kharif* groundnut and fodder jowar with 3.50, 3.00, 2.92, 2.75, 2.26 and 1.50 machine hours respectively. The machine labour utilisation in whole farming system was 15.93.

3.3 Labour utilization pattern in farming system – III

The human labour utilisation revealed that *rabi* groundnut demanded heavy amount of human labour utilisation followed by *kharif* paddy, *rabi* paddy, *kharif* groundnut, and sheep rearing with 92.78, 82.80, 74.67, 74.11, and 27.20 man days respectively. The human labour utilisation in whole farming system was 351.56.

The cattle labour utilisation revealed that *kharif* paddy demanded heavy amount of cattle labour utilisation followed

by *rabi* paddy, *rabi* groundnut and *kharif* groundnut with 12.80, 11.00, 10.38, and 9.67 cattle pair days respectively. The cattle labour utilisation in whole farming system was 43.85.

The machine labour utilisation revealed that *kharif* paddy demanded heavy amount of machine labour utilisation followed by *rabi* paddy, *kharif* groundnut and *rabi* groundnut with 3.40, 3.00, 2.89 and 2.63, machine hours respectively. The machine labour utilisation in whole farming system was 11.92.

Table 1: Labour utilization pattern in farming system-I

Particulars	Human labour (man days ha^{-1})	Cattle labour (pairs days ha^{-1})	Machine labour (Hours ha^{-1})
Kharif groundnut	61.3 (13.07)	9.62 (13.54)	2.92 (13.97)
Rabi groundnut	68.14 (23.46)	11.43 (26.00)	3.19 (24.63)
Kharif paddy	64.71 (7.43)	10.71 (8.13)	2.57 (6.61)
Rabi paddy	44.54 (11.69)	12.80 (20.80)	3.67 (20.22)
Bajra	36.13 (8.89)	6.07 (9.86)	2.73 (15.07)
Sugarcane	95.31 (20.31)	15.38 (21.67)	4.07 (19.49)
Dairy	30.83 (15.16)	-	-
Farming system as a whole	400.96 (100)	66.01 (100)	19.15 (100)

Note: Figures in parentheses indicate percentages to the total.

Table 1.1: Labour utilization pattern in farming system-II

Particulars	Human labour (man days ha^{-1})	Cattle labour (pairs days ha^{-1})	Machine labour (Hours ha^{-1})
Kharif groundnut	65.26 (29.69)	9.30 (43.41)	2.26 (38.24)
Rabi groundnut	115.00 (11.37)	7.80 (7.91)	3.00 (11.03)
Kharif paddy	125.0 (9.89)	11.75 (9.53)	2.75 (8.09)
Rabi paddy	49.92 (12.84)	10.46 (27.59)	2.92 (23.53)
Fodder jowar	81.5 (6.45)	3.00 (4.87)	1.50 (4.41)
Ragi	91.75 (7.26)	8.25 (6.70)	3.50 (10.29)
Poultry	37.9 (22.49)	-	-
Farming system as a whole	566.33 (100)	50.56 (100)	15.93 (100)

Note: Figures in parentheses indicate percentages to the total.

Table 1.2: Labour utilization pattern in farming system-III

Particulars	Human labour (man days ha^{-1})	Cattle labour (pairs days ha^{-1})	Machine labour (Hours ha^{-1})
Kharif groundnut	74.11 (35.43)	9.67 (44.96)	2.89 (48.15)
Rabi groundnut	92.78 (10.86)	10.38 (21.45)	2.63 (19.44)
Kharif paddy	82.80 (20.13)	12.8 (16.54)	3.40 (15.74)
Rabi paddy	74.67 (11.89)	11.00 (17.05)	3.00 (16.67)
Sheep rearing	27.20 (21.67)	-	-
Farming system as a whole	351.56 (100)	43.85 (100)	11.92 (100)

Note: Figures in parentheses indicate percentages to the total

4. Conclusion

Farming System-II generated higher employment (566.33 man days), followed by Farming System-I (400.96 man days) and Farming System-III (351.56 man days).

Under the identified Farming Systems, Farming System-I required highest bullock labour (66.01 pair days), followed by Farming System-II (50.56 pair days) and Farming System-III (43.85 pair days).

5. Scope of Study

The outcome of the present investigation will be of immense importance to evolve, develop and implement the location specific farming systems, in study area, as well as the area with similar situations elsewhere. A systems approach involves the natural method of investigation of any problem by decomposing the problem into its constituents and studying in an integrated manner. Even today, farming in India is a gamble with the monsoon and depends on vagaries of nature. There is an associate risk due to changing socio-economic-political environments. Shaner *et al*. (1982) defined farming system as unique and reasonably stable arrangements of farming enterprises that the household manages according to well defined practices in response to physical, biological and socio-economic environments and in accordance with the household's goals, preferences and resources. These factors combine to influence the output and production trends.

References

[1] Nagaraj, T., Khan, H.S.S. and Karnool, N.N., 1996. Economic analysis of maize-sunflower farming system in Tungabhadra command area, Karnataka. *Farming Systems*, 12(3-4):28-36.
[2] Mohandas, K. and Thomas, E.K., 1997, Economic analysis of rice production in Kuttanad areas of Kerala. *Agric. Situation in India*, 54(9): 555-560.
[3] Ram suresh and Hubba lal singh. 2008. Cost and return structure of sugarcane- livestock based farming system in gonda district of Uttar Pradesh. *International journal of agriculture science*. 4(2):477-479.

[4] Prasad, V.R. and Prasad, Y. E. 2009.Study of economics of cotton and its competing crops in Guntur district of Andhra Pradesh. *Mysore Journal of Agricultural Sciences.* 43: 234-238.

[5] Rai, J and Tiwari, U. S. 2011. Economic evaluation of different farming systems in district Lucknow of Uttar Pradesh. *Agriculture Update*. 6(1):129-132.

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