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Research Note

Income and Employment Pattern in Rural Area of Chhattisgarh: A Micro View

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Abstract

This micro level study, conducted in the state of Chhattisgarh to examine the income and employment pattern, has revealed that farm and non-farm activities are the main sources of income and employment and off-farm activity (agricultural labour) contributes only a negligible portion. The smallholders as well as landless households during the slack agricultural season depend on rural non-farm activities as the source of earning. A wide disparity in economy of farm and non-farm households has been observed. The income has been found higher under farm than non-farm households, but on per capita basis, no significant difference has been observed between farm and non-farm households. Within farm households, there are wide disparities between marginal and large farmers. A major portion of farm household's income is generated from *kharif* crops and a small portion by *rabi* crops due to prevalence of mono-cropped farming system in the state. A majority of households has been found to generate their employment through non-farm activities. The annual employment generated by non-farm household is considerably higher as compared to that by farm households. Within farm households, employment provided by service activities has shown a positive relationship with farm-size, while there is inverse relationship with non-agricultural labour. Policies aimed at improving the income and employment level include diversification of agriculture and increasing of crop productivity. To promote the rural non-farm sector, financial assistance may be provided to start new non-farm activities.

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Introduction

Agriculture is an important sector for the sustained growth of Indian economy, as nearly 70 per cent of the rural and 8 per cent of the urban households still depend on it for employment and livelihood. Despite a series of successful agricultural innovations, the agriculture sector in India continues to be dominated by small landholders and large fluctuations in agri-output. At the same time, several non-agricultural activities also provide opportunities for income and employment to the labour force belonging to both farming and non-farming households.

In the recent time, farming in India has become non-viable, specifically for marginal and small farmers. Their meager land is not sufficient to earn adequate income to maintain their family (Rajshekhar, 1995; Pandey and Singh, 2003). Also, the agriculture sector alone cannot absorb the growing rural labour force due to fallings output elasticities of employment within the sector (Singh *et al.*, 2003).

The importance of non-farm employment is gaining momentum in India as rural economy is becoming diversified and is being extended well beyond agriculture. The labour absorptive capacity of agriculture has reached the upper limit and it is not able to keep the rural workers engaged throughout the year. Rural households also seek employment outside the agriculture sector to tide over the inter-year and intra-year variations in agricultural income.

During slack agricultural season, the small farmers and landless households depend on rural non-farm activities as the secondary source of income (Elumalai and Sharma, 2003). The development factors like agricultural modernization, commercialization, increased demand for non-crop goods and services, urbanization, growing literacy and even welfare-oriented policy intervention, etc. have tried to pull the labour force away from agriculture towards more lucrative non-farm activities (Shylendra and Thomas, 1995; Kalamkar 2003). Several distress factors like poverty, unemployment, under-employment and frequent natural calamities like droughts have pushed the rural households to go in search of various non-farm activities to supplement their income and employment.

The questions of farm and non-farm relationship analyzing the trend, pattern and impact of farm, off-farm and non-farm activities on income and employment of rural economy on macro level have been tackled by some studies, but using the secondary data from National Sample Survey Organization (NSSO), none of the studies has examined the income and employment correlations using the primary data in the Chhattisgarh state.

In view of this, the present study was undertaken to examine the income and employment pattern of the rural households in the state of Chhattisgarh.

Data and Methodology

To select the ultimate unit of sample, multistage sampling technique was adopted. The district of Raipur was randomly selected from the Chhattisgarh state. The Dharsiwa block was selected purposively as a large proportion of population was dependent on agriculture and there was a significant migration for employment during off-seasons. The Boria-Khurd village conforming to the requisite criteria was purposively selected for the study. The rural households were categorized into two major groups, viz. farm households and non-farm households. The households were further categorized into four groups, viz. marginal (up to 1.0 ha), small (>1.0 to 2.0 ha), medium (>2.0 to 4.0 ha) and large (> 4.0 ha) households. A representative sample of 25 per cent was selected using probability proportional to size technique subject to the condition that at least 10 respondents should be included in the sample from each of the five categories of respondents, making a total of 118 respondents constituting 50 landless, 16 marginal, 22 small, 20 medium and 10 large farmers.

The selected households were interviewed using pre-structured questionnaire for collecting data on demographic characteristics, cropping pattern and intensity, income and employment generation pattern with their sources, etc. in the year 2002-2003.

Persons, who were working or seeking work constituted the labour force. Persons, who were neither working nor seeking work for various reasons during the reference period were considered as out of labour force. In other words, economically active population was referred to the population that supplied or sought to supply labour for production. Therefore, labour-force included both employed and unemployed persons. The proportion of these economically active family members to the family size was referred to as 'labour-force ratio' (LFR). Labour-force participation ratio (LFPR) in agriculture was defined as the number of persons employed full time on farming activities in the labour-force per 1000 persons (NSSO, 60th round, 2005).

Rural households were generating income and employment from farm, off-farm and non-farm activities. The concept of income used in the study was comprehensive, including income received in cash and kind. A money value was imputed to the receipts in kind at price prevailing in the survey village. Working hours or days engaged in different economic activities were converted into human-days to estimate the employment in one year. One human-day was equivalent to 8 hours of working.

The 'farm income' was estimated as the value of main product and by-products net of the cost on account of seeds, fertilizers, pesticides, irrigation charges, payment to hired labour, draft and machine power and farm employment included employment generated from crop cultivation by the family members of farm households. Income and employment generated by the family members as agriculture labourers in other farmers' fields, was taken as 'off-farm' income and employment. The income and employment generated from non-agricultural activities like services, business, non-agricultural labour, livestock enterprise, carpenters and painters, etc. were considered as 'non-farm' income and employment, respectively.

Results and Discussion

Socio-economic Profile of Sample Households

The average family size of households was 5.86 adult members, which was 38.54 per cent higher in farm than non-farm households. Within farm households, there was a positive relation between farm-size and average family-size. This indicated that larger farmers generally live in joint-family system. The caste composition of sample households indicated that a majority of them were in the category of other backward classes (OBCs). The literacy level was found as 68.89 per cent, with a majority (73 per cent) having studied up to middle school.

Educational status was significantly higher in the farm (71.24 per cent) than non-farm (64.65 per cent) households. The average size of holding on the overall households was 1.34 hectares with *kharif* season irrigated farming structure. Economically active adult members were more on farm than non-farm households. On an average, only 1.81 male and 1.57 female members in the farm households and 1.40 male and 0.92 female members in non-farm households were really active and constituted the labour force. Rests of the members being dependent members, were excluded from the constituents of labour force of these households (Gauraha, 1996; Pandey *et al.*, 2003). The labour force ratios were 50.83 per cent in the farm and 48.34 per cent in the non-farm households with the overall ratio of 50.17 per cent. The overall labour participation ratio to agriculture was found higher for male (486 per 1000 persons) than female (401 per 1000 persons). Thus, both labour force ratio and labour participation ratio to agriculture were higher for male than female in the Chhattisgarh state.

Farm Area Allocation under Different Crops

The farm area allocation to different crops, given in Table 1, revealed that paddy occupied the largest area (83.95 per cent), followed by wheat

Table 1. Farm area allocation under different crops in Chhattisgarh

Farm-size	Total area (ha)	Area under crops (%)					Cropping intensity (%)
		Rice	Wheat	Gram	Lathyrus	Sunflower	
Marginal	8.8	100	-	-	-	-	100
Small	33.15	87.98	5.01	3.50	3.51	-	121
Medium	55.76	85.82	4.34	6.37	3.47	-	124
Large	60.40	78.74	10.15	5.56	3.38	2.17	137
Overall	158.11	83.95	6.68	5.18	3.29	0.90	127

(6.68 per cent), gram (5.18 per cent), lathyrus (3.29 per cent) and sunflower (0.90 per cent). As regard different farm-size groups, marginal farmers grew only paddy crop and area under *rabi* season crops showed an increasing trend with the farm-size.

The percentage of total cultivated area under *rabi* irrigation was meager in all the categories of sample households which has been the limiting factor in the development of agriculture in the study area. Cropping intensity, which showed a positive relation with the farm-size, was poor and was estimated at 127 per cent. The present study showed that with the increase in farm size, cropping intensity increased, probably due to the lack of infrastructure with the small holdings. Thus, cropping intensity can be increased if additional facilities are created in the study area.

Income Generation Pattern

The total household income from different sources, presented in Table 2, reveals a wide disparity in the economy of farm and non-farm households. But, on per capita basis, there was not much difference between these households.

The overall income was Rs 39161, which was generated from 23.07 per cent farm, 7.36 per cent off-farm and 69.57 per cent non-farm activities. The farm households generated 33.97 per cent income from farm, 61.97 per cent from non-farm and 4.06 per cent from off-farm activities, while non-farm households were generating 85.64 per cent from non-farm and 14.36 per cent from off-farm activities. This clearly shows the importance of non-farm activities in the rural economy.

It was also found that farm income was directly related with farm-size, while income from off-farm and non-farm activities was inversely related with farm-size. The total as well as per capita income of non-farm households was higher than those of marginal farmers because the marginal farmers were dependent on crop farming, whereas the non-farm households earned wages in the non-farm sector.

Table 2. Income generation of sample households in Chhatisgarh

Particulars	Sources of income				Per capita income (Rs/ year)
	Farm	Off-farm	Non-farm	Total	
Farm households	15677 (33.97)	1873 (4.06)	28593 (61.97)	46144 (100)	13652
Marginal	1904 (10.69)	3528 (19.80)	12385 (69.51)	17818 (100)	6060
Small	8006 (24.08)	2318 (6.97)	22925 (68.95)	33250 (100)	9750
Medium	19258 (31.78)	997 (1.65)	40332 (66.57)	60588 (100)	17067
Large	47393 (52.13)	-	43521 (47.87)	90914 (100)	24571
Non-farm households	- (14.36)	4259	25405 (85.64)	29664 (100)	12786
Overall	9034 (23.07)	2884 (7.36)	27242 (69.57)	39161 (100)	13320

Note: Figures within the parentheses are the percentages to respective row total income

Pattern of Labour Employment

The levels of labour employment in farm, off-farm and non-farm activities, presented in Table 3, revealed that for a majority of households, employment was generated through non-farm activities. The contribution of non-farm activities to total employment (557.15 human-days) was 72.57 per cent. This corroborated the Vaidyanathan's (1986) assertion that the labour absorptive capacity of agriculture was limited and the rural population was migrating from farm to non-farm activities.

The total employment in farm households was 24.69 per cent in the study area, the maximum being generated by medium farm-size. The larger farmers were generating enough income from agriculture and were investing it in the non-farm sectors. This could be one of reasons of generating higher employment in the non-farm sector.

The overall annual employment generated per person was 193.23 human-days. It was higher in non-farm (220.75 human-days) than farm (173 human-days) households. This is indicative of the seasonality of employment in the agriculture sector (Badatya, 2003) and shows that the rural population has to face un-employment and under-employment due to seasonal work in crop production (Swaminathan, 1981).

Table 3. Employment pattern of sample households in Chhattisgarh
(human-days/ year)

Particulars	Employment generated				Employment/ Worker
	Farm	Off- farm	Non-farm	Total	
Farm households	145.72 (24.69)	43.68 (7.40)	400.84 (67.91)	590.27 (100)	173.00
Marginal	52.13 (12.55)	88.44 (21.30)	274.69 (66.15)	415.26 (100)	141.37
Small	132.05 (23.34)	48.18 (8.52)	385.41 (68.14)	565.64 (100)	161.61
Medium	210.00 (30.35)	24.75 (3.58)	457.05 (66.07)	691.80 (100)	194.87
Large	197.32 (27.32)	-	524.68 (72.68)	721.20 (100)	194.92
Non-farm households	-	103.10 (20.13)	409.04 (79.87)	512.14 (100)	220.75
Overall	83.98 (15.07)	68.86 (12.36)	404.31 (72.57)	557.15 (100)	193.23

Note: Figures within parentheses are the percentages of respective row total.

Pattern of Earning

The per day earnings as well as the income of farm and non-farm households, given in Table 4, depict wide disparities between them. On an average, a non-farm households earned less (Rs 57.92/day) than that of a farm household (Rs 78.18/day). Within farm households also, there was a wide gap in wage earnings of each category of farm households.

The earning of marginal farmers was least (Rs 42.91/day) and the large farmers earned nearly three-times (Rs 126.06/day) of it. A comparison of wage earnings in off-farm and non-farm activities showed that the average earning per day was higher in non-farm than off-farm activities in all

Table 4. Earnings of sample households from different sources
(Rs / day)

Particulars	Farm	Off- farm	Non-farm	Overall
Farm households	107.58	42.89	71.34	78.18
Marginal	36.54	39.89	45.09	42.91
Small	60.63	48.11	59.48	58.78
Medium	91.71	40.30	88.24	87.58
Large	240.19	-	82.95	126.06
Non-farm households	-	41.31	62.11	57.92
Overall	107.58	41.89	67.38	70.23

categories of sample households. It could be due to the fact that off-farm activity, i.e. an agricultural labourer earns more or less the same wages, while non-farm activities due to their wide range provide higher wages. The disparities were more pronounced in the farm sector.

Components of Farm, Off-farm and Non-farm Income

Different components of farm, off-farm and non-farm income, presented in Table 5, revealed that a major portion of farm household's income (30.60 per cent) was generated by *kharif* crops and only a small portion (3.37 per cent) by *rabi* crops due prevalence of mono-cropped farming system in Chhattisgarh state.

For non-farm households, services and non-agricultural labour were the main sources of income with respective contributions of 37.22 per cent and 30.28 per cent. In the components of non-farm income, services had the maximum contribution (30.30 per cent), followed by non-agriculture labour (19.27 per cent) to the total income of all households. The share of income from services was more under non-farm (37.22 per cent) than farm (27.04 per cent) households. Within farm households, the share of service activities showed positive relation with farm-size. On the other hand income from non-agricultural labour activities showed an inverse relationship with farm-size.

Income from business and other works like contractors, carpenters, painters, etc. showed a positive relationship with farm-size. Income generated from business was higher under non-farm than farm households, while from construction work, the order was reverse.

Components of Farm, Off-farm and Non-farm Employment

The components of farm, off-farm and non-farm employment, presented in Table 6, revealed that contribution was higher by farm (32.09 per cent) than non-farm (20.13 per cent) households.

Employment from *kharif* crops was maximum under medium farm-size category (26.35 per cent), while employment from *rabi* crops was maximum under large farm-size and showed a positive relationship with farm-size. Under non-farm sector, maximum employment (27.40 per cent) was generated as non-farm agricultural labour, followed by services activities (18.40 per cent). Within farm households, employment provided by service activities showed a positive relationship with farm-size and an inverse relationship between employment generated as non-agricultural labour and farm-size. Livestock enterprise provided more employment to farm than

Table 5. Components of farm, off-farm and non-farm income

Particulars	Farm households				Overall
	Marginal	Small	Medium	Large	
Farm income					
<i>Kharif</i>	1904.74 (10.69)	7412.54 (22.29)	17986.71 (29.69)	40686.30 (44.75)	14119.89 (30.60)
<i>Rabi</i>	-	594.25 (1.78)	1272.03 (2.10)	6707.08 (7.38)	1557.23 (3.37)
Off-farm income	3528.13 (19.80)	2318.18 (6.97)	997.50 (1.65)	-	1873.53 (4.06)
Non-farm income					
Services	-	8290.91 (24.93)	18120.00 (29.91)	30360.00 (33.39)	12476.48 (27.04)
Non-agril. labour	9162.50 (51.42)	7000.00 (21.05)	7037.50 (11.62)	-	6490.44 (14.07)
Business	350.00 (1.96)	872.73 (2.62)	1800.00 (2.97)	-	894.12 (1.94)
Livestock	1623.13 (9.11)	3125.91 (9.40)	2174.50 (3.59)	4161.00 (4.58)	2644.71 (5.73)
Others	1250.00 (7.02)	3636.36 (10.94)	11200.00 (18.49)	9000.00 (9.90)	6086.35 (13.19)
Gross income	17818.50 (100)	33250.88 (100)	60588.24 (100)	90914.38 (100)	46144.64 (100)
					29664.10 (100)
					39161.36 (100)

Note: Figures within the parentheses are the percentages to gross income

Table 6. Components of farm, off-farm and non-farm employment in farm households (human-days/year)

Particulars	Farm households				All	Non-farm households	Overall
	Marginal	Small	Medium	Large			
Farm employment							
<i>Khariif</i>	52.13 (12.55)	109.25 (19.44)	182.25 (26.35)	147.50 (20.45)	123.13 (20.86)	-	70.96 (12.74)
<i>Rabi</i>	-	22.10 (3.91)	27.75 (4.01)	49.50 (6.86)	22.59 (3.83)	-	13.02 (2.34)
Off-farm employment	88.44 (21.30)	48.18 (8.52)	24.75 (3.58)	-	43.68 (7.40)	103.10 (20.13)	68.86 (12.36)
Non-farm employment							
Services	-	82.95 (14.66)	106.25 (15.36)	307.50 (42.64)	103.31 (17.50)	101.50 (19.82)	102.40 (18.40)
Non-agril. labour	183.12 (44.10)	141.82 (25.07)	145.25 (20.99)	-	131.69 (22.32)	181.16 (35.37)	152.65 (27.40)
Business	23.75 (5.72)	17.27 (3.05)	29.50 (4.26)	-	19.85 (3.36)	62.68 (12.24)	38.00 (6.82)
Livestock	27.26 (6.56)	78.54 (13.89)	97.75 (14.13)	118.20 (16.39)	77.96 (13.21)	22.26 (4.35)	54.36 (9.76)
Fuel/Fodder	25.26 (6.08)	34.60 (6.12)	27.29 (3.94)	30.50 (4.23)	29.72 (5.06)	25.12 (4.91)	27.98 (5.02)
Others	15.00 (3.61)	30.23 (5.34)	51.00 (7.37)	68.00 (9.43)	39.48 (6.69)	15.84 (3.09)	28.78 (5.17)
Total employment	415.26 (100)	565.64 (100)	691.80 (100)	721.20 (100)	590.27 (100)	512.14 (100)	557.15 (100)

Note: Figures within the parentheses are the percentages to gross income

non-farm households because the farmers reared more livestock than the latter.

Conclusions and Policy Options

The study has revealed that farm and non-farm activities are the main sources of income and employment with negligible contribution of off-farm activity in the rural areas of Chhattisgarh state. There exists a wide disparity in the economy of farm and non-farm households, as the total income was higher under farm than non-farm households. But, on per capita basis, there is not much difference between farm and non-farm households because the latter have been found to generate sufficient income from non-farm activities. Within farm households, a wide disparity has been observed between income of marginal and large farmers. The *kharif* crops have been found to generate a major portion of farm households' income and *rabi* crops contributed a small portion because of prevalence of mono-cropped farming system in the state. Services and non-agricultural labour are the main sources of income under non-farm households. On overall basis, employment generation has been found maximum by non-agricultural activities, followed by services and agriculture labour. The contribution of agricultural employment has been found higher in farm than non-farm household. Employment from *kharif* crops has been recorded maximum under medium farm-size category, while from *rabi* crops, it has been found maximum under large farm-size groups.

Under non-farm sector, employment generation has been noted maximum as non-farm agricultural labour, followed by service activities. Non-farm households were engaging more labour in both these activities as compared to farm households. Within farm households, employment provided by service activities has shown a positive relationship with farm-size and an inverse relationship between employment generated as non-agricultural labour and farm-size. Employment from the livestock enterprises has been found higher in farm than non-farm households because farmers rear livestock.

It is fairly evident that with increasing population pressure, small and fragmented agricultural holdings and highly inequitable distribution of land, etc., agriculture alone cannot provide the solution for rural unemployment and under-employment in the state of Chhattisgarh. There is a need to provide urban facilities to rural areas to give a boost to rural non-farm employment and sources of livelihood. Attempts will have to be made to increase crop productivity so that the farm sector may provide enough income and employment to even the marginal farmers. Diversification of agriculture is another area that has to be popularized to generate better income and employment potential. Equally important is the need to promote the rural

non-farm sector so that burden on the agricultural sector is reduced. Hence, financial assistance may be provided to the rural households to start new non-farm activities. It will help increase not only employment and income but would also provide better livelihood to rural households.

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