Income and Income Inequality among Indian Rural Households

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This chapter analyses the changes in sources of income and income inequality of rural households using the Indian Human Development Survey (Data) of 2004-05 and 2011-12. We find that nominal incomes increased by 177% during the period. Income from agricultural labour, business and cultivation increased moderately by 117%, 132% and 152% respectively while income from casual labour and remittances grew by 237% and 528% respectively. Consequently, the average shares of agricultural labour incomes and cultivation income decreased from 35% and 11% to 33% and 9% respectively. The same for casual labour and remittance increased from 11% and 3% to 14% and 6% respectively. In 2011-12, 35% households were involved in agricultural labour compared to 40% in 2004-05. Also, proportion of households earning from casual labour and remittances increased from 28% and 6% in 2004-05 to 47% and 18% respectively in 2011-12. The share of casual labour increased more than that of remittances among SCs, STs, households with highest adult education as primary to higher secondary and landless households with salaried income. The share of remittances went up higher than casual labour for Brahmins, Forward Caste, OBCs, illiterate, above higher secondary, landless labourers, absentee lessors and all those who possessed land. Among sources of income inequality, we find remittances as the only income source which increased its share in income, decreased its gini and was favourable to lower quintiles. This made remittances more inequality decreasing in 2011-12 as compared to 2004-05 with an elasticity of gini to share of remittances at -1.2%.

Key Words: Income Sources, Income Inequality, Gini Decomposition, Indian Human Development Survey (IHDS), Remittances.

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1. Introduction

Rural households earn their incomes from various sources including cultivation, livestock, agricultural wage labour and other non-farm occupations. Apart from cultivation which is considered the mainstay of Indian rural household income, livestock and agricultural labour income supplement the incomes of households wholly dependent on farm based activities. As economies grow and diversify into various non-farm activities, rural households also earn a larger chunk of their incomes from non-farm casual labour, migration to other rural or urban areas and from salary based activities. The participation of rural households in non-farm activities could be either due to "push" factors (e.g. risk reduction, land constraints, response to a crisis) and/or "pull" factors (eg. complementarities with existing income activities, higher profitability of the activities) (Barrett, Reardon and Webb, 2001). Various factors like education, skills, caste, religion, asset ownership, household size, and credit availability influence the decision of a household to participate and also decide on the extent of participation in a particular non-farm activity (Srivastav and Dubey, 2002; Chadha and Sahu, 2002; Reardon et al., 2007; Jatav, 2010; Jatav and Sen, 2013). Understanding the relation between participation in rural non-farm sector and well-being of a household and relation between non-farm sector expansion and macro-economic indicators is of vital importance. Recent trends of a 'stunted' structural transformation in the Indian economy where the decrease in agriculture's share in GDP has not been accompanied by subsequent accelerated growth of labour intensive manufacturing (Binswanger-Mkhize, 2013) has made understanding of rural nonfarm sector extremely pertinent. Members of rural households also migrate to other rural or urban areas for employment and the internal remittances also become an important source of income for rural households. This migration could also be distress driven or driven by the good opportunities provided in the other areas. In summary, a growing economy with a not so fast growing manufacturing sector might see a high level of income diversification among rural households. This is what we expect to see among rural household in India during the study period of 2004-05 to 2011-12. The chapter explores issues related to dynamics of income diversification of rural households. The extent of incomes that households generate from farm based activities like their own cultivation and agricultural labour and those from nonfarm casual labour, migration and salaried employment are explored during the period from 2004-05 to 2011-12 using a panel data.

There has been a notable change in sources of income among Indian rural households over the past few decades. The predominance of agriculture-based activities in total income has

reduced in terms of employment and share of income. Participation of rural households in non-farm sector has expanded greatly over the last two decades or so (Coppard, 2001; Srivastav and Dubey, 2002; Bhalla, 2002; Bhaumik, 2002; Chadha, 2002; Sahu, 2003). Particularly, in the decade spanning 1993-94 to 2004-05, non-farm employment in rural India grew rapidly than farm employment (Kashyap and Mehta, 2007; Abraham, 2009; Jatav, 2010; Chowdhury, 2011; Himanshu et al., 2013). In this period, 60% of the 56 million rural jobs that were created were in the non-farm sector. The share of non-farm income in the total income of rural households has also become substantial during this period. Studies estimate that farm households earn 46% of their incomes from non-farm activities and rural households earn 48% of their income from non-farm activities (Himanshu et al., 2013). For rural India, this figure was estimated to be around 35% in the year 1993-94 (Lanjouw and Shariff, 2004; Reardon et al., 2007)

This increased diversification of income generating activities could be seen as an indicator of expanding economic opportunities and thus expected to help in reduction of poverty and inequality. Income from agriculture is largely related to land ownership and since land distribution is highly unequal in India, we would expect this income to be highly unequal. So, an expansion to nonfarm sector could pave way for reducing income inequality. But, this may not always be true as the accessibility to non-farm opportunities are far from universal (Reardon et al., 2000; Kundu et al., 2003; Jatav, 2010). If profitable non-farm opportunities end up being exploited largely by the already well-off or elite in the population, we could see an increase in inequality due to expansion of non-farm sector. Given such contradictory possibilities, there might also be other factors that might explain the linkage between non-farm sector expansion and income inequality of rural households. For instance, unequal access to non-farm economic opportunities is sometimes exacerbated by social factors like caste and religion. These factors would put constraints other than economic factors like credit and assets for a particular section of people in pursuing opportunities in the non-farm sector. There have been some recent studies though which seem to suggest that social factors are affecting occupational mobility lesser than before (Kapur et al., 2010; Himanshu et al., 2013). Different sources of income could also contribute to inequality differently over time. For example, with time the nonfarm sector could employ people who were excluded previously and as they also earn incomes, it might contribute to decreasing of income inequality over time. But, there has been no detailed study into looking at the dynamics of sources of income inequality in Indian context and this chapter attempts to do that.

2. Data and Methodology

Study of income inequality and its composition has largely been of two types. On the one hand, there have been studies that have looked at influence of population subgroups defined by age land ownership, caste, religion, education, etc. These studies look into the impact of these characteristics of population on the resulting inequality in the economy. There has been wide interest in such studies and they have largely been pursued using regression based approaches (a few examples would involve Oaxaca, 1973; Bourgignon et al., 1998; Fields, 2003). Another area of inequality studies which is of larger importance to our current pursuit involves studying the impact of different components of income on inequality. Here, the question is concerned with how a particular income source (say income from livestock, migration or investment income) affects the overall income inequality. Here, the most commonly used methodologies involve decomposition techniques. Some of the studies integrate regression based approaches with decomposition techniques to analyze the role of population characteristics in affecting inequality (eg. Morduch and Sicular (2002)). For our current purposes, where we intend to study the impact of different sources of income on income inequality, we use a decomposition based approach in the tradition of Shorrocks (1982). We first analyze income diversification strategies of rural households using a large scale nationally representative data. We first look into the different diversification strategies of different population groups defined by caste, education, land holding and landholding classes.

After analysing the income diversification strategies, we look at dynamics of different income sources over the period 2004-05 and 2011-12. We look into how the income source shift has happened among the rural households. Then we perform an interquintile analysis to analyse the sources of inequality. To identify the changes in sources of rural income inequality, we then decompose the contribution of different income sources to overall income inequality using a Gini coefficient decomposition analysis method for the two years 2004-05 and 2011-12.

Gini coefficient is the most widely used statistic in estimating income inequality and it varies between 0 and 1 with 0 indicating perfect equality and 1 indication very high income inequality where only one person gets all the income. Though theoretically possible, none of the countries in the world have values near to the extremes. Typically, Gini coefficients of income and consumption in the range of 0.3 to 0.35 are considered to be present in egalitarian

societies and values exceeding 0.4 are considered inegalitarian (World Bank, 2015). This Gini coefficient of total income is then further decomposed using a method proposed by Lerman and Yitzhaki (1985). The total income is derived from different sources which we categorize as follows – income from cultivation and livestock (own-farm income), income from agricultural labour (agricultural wages), income from casual labour (nonfarm labour), salaried employment (salary) and employment in businesses (business) and income from rent, pensions, scholarships and welfare benefits from Government (other income). Each of these sources will generate inequality. Typically, these individual inequalities would be higher owing to the fact that not all of the households derive income from each of these sources.

The share of each of these sources in total income and the correlation between the source income and total income is used to decompose the Gini coefficient as follows:

$$G = \sum_{k=1}^{K} [m_k / m] \times [2Cov(y_k, F_k) / m_k] \times [Cov(y_k, F) / Cov(y_k, F_k)] \ldots (2.1)$$

$$G = \sum_{k=1}^{K} S_k G_k R_k \ \ldots (2.2)$$

Where G is the Gini coefficient of total income inequality and G_k is the Gini coefficient indicating the inequality in incomes from source k , m is the mean income of the population, m_k is the mean income from income source k, $Cov(y_k, F_k)$ is the covariance between income component k and its cumulative distribution, $Cov(y_k, F)$ is the covariance between income component k and cumulative distribution of the total income, S_k is then the measure of component $k's$ share in total income and R_k is the "Gini correlation" between income component k and total income. This decomposition provides three important statistics of relevance - S_k, which suggests how high the share of a particular income component is in total income; G_k, which suggests how equally/unequally a particular income component is distributed and R_k, which suggest how much a particular income component and total income distribution are correlated. All these three are important for an understanding of income inequality of rural households. Just because a particular income component (say wage income) forms a high share of total income, it may not influence inequality in a particular way. If it is equally distributed and also has no correlation with the distribution of total income, it might not have any say in the final income inequality of the population. Similarly,

an income component which is very unequally distributed might not necessarily have a bad impact on total income distribution of the population. It might so happen that the share of it in the total income is quite less and also is negatively or not correlated with the total income distribution.

As we observe, only by having an idea of the three factors for each income component will we be able to say whether a particular income component has an inequality increasing or inequality decreasing effect on the population. Lerman and Yitzhaki (1985) further estimate the effect of small changes in a particular income source on inequality, holding income from all other sources constant. They derive the percent change in inequality resulting from small percent change in income from source k as follows:

$$\frac{\partial G/\partial e}{G} = \frac{S_k G_k R_k}{G} - S_k \quad ...(2.3)$$

Where $\partial G/\partial e$ is the change in Gini coefficient to a marginal percentage change (e close to 1) in income source k.

We use the above two formulations – decomposing income inequality and estimating marginal effects on income inequality for the two years and identify the changing sources of income inequality among rural households. From the decomposition analysis, we estimate the share of different income sources in total income, the inequalities within different income sources and Gini correlation between different income source distribution and total income distribution. From the marginal analysis, we estimate the impact of percentage change in any income source on Gini coefficient of total income. This will tell us whether expansion in any income source is inequality increasing or inequality decreasing. Also, we decompose inequalities within the nonfarm incomes based on employment types. This will provide us with the structure of inequality in the nonfarm sector. This analysis is done for the period of 2004-05 and 2011-12 and the changes in these two periods are observed. The changes will provide an indication of whether a particular income source has become more inequality increasing or more inequality decreasing. This also changes with time and understanding these dynamics is also crucial. For instance, the relation between non-farm sector expansion and inequality might not be static and the dynamics of the relationship might be dependent on the stage of the non-farm sector expansion in the rural areas. For the economy as a whole Kuznets (1955, 1963) had suggested that as the economy moves towards more modern sectors, inequality will initially increase as the modern sectors would initially benefit the elite

but gradually over time, will start benefiting the lower strata as well resulting in reduced inequality. Himanshu et al. (2013) suggest that this kind of an inverted U-curve could be observable even in the rural economy as well and non-farm sector expansion might initially have an inequality-increasing tendency. All these aspects need to be explored while studying the linkage between different sources of income and income inequality.

We use the data collected from two rounds of Indian Human Development Survey (IHDS) conducted in 2004-05 and 2011-12. The survey is a large scale nationally representative and was conducted under the supervision of National Council of Applied Economic Research (NCAER) in collaboration with University of Maryland. The detailed methodology of the two rounds of survey, along with some summary information and preliminary findings, could be obtained from Desai et al. (2010) and Desai et al. (2015). We present a brief note on the survey here. The survey covers almost all the states and union territories of India except Andaman and Nicobar and Lakshadweep. The survey used two-stage stratification and was conducted over a sample of 27010 rural households (from 1503 villages) and 13126 urban households (over 971 urban blocks) in 2004-05. In the year 2011-12, the survey team re-interviewed around 83% of the households as well as split households (if located within the same village or town). It also selected an additional replacement sample of 2134 households in this round. Totally, the 2011-12 survey was conducted among 42,152 households. For the purpose of our analysis, we use only those rural households which were surveyed in both 2004-05 and 2011-12. There were household that were split after 2004-05 and the split households in the same villages were resurveyed in 2011-12. Since the survey did not mention whether there were households that were split and not in the same village, we did not include any of the split households for our analysis. In all, there were 19,831 households that fit the above criteria and they have been included for the purpose of our analysis.

The survey has collected data related to various social, economic and political aspects. The survey has data related to income from different sources for all the households. It has various unique modules which collect data on education, health, occupation, economic status, marriage, fertility, gender relations, and social capital. It also collects information on income from various sources for every household. In particular, information is collected on household's income from cultivation, livestock, agricultural wages, non-agricultural wages, salaried employment, businesses, sale or rent of agricultural property, remittances, sale of property and welfare benefits. We include incomes from cultivation, livestock and lease of agricultural property as income from own-farm activities. We consider agricultural wages

which are obtained from agricultural labour in other farms separately as agricultural labour income. Income from wages in non-agricultural activities, remittances, businesses and salaried employment are considered as different sources of income. Income from rent of property, pension, scholarship and welfare benefits (like old age pension, widow pension, maternity benefits, disability schemes, Annapurna, income support other than NREGA and assistance from NGOs/charities) are combined as other income for the purposes of our analysis. There were two other facets of income that needed attention in our analysis. The net income from cultivation, livestock and nonfarm business activities could be negative and because of that some of the households had a total income that was negative. When calculating the shares of a particular income source in total income, these estimates biased the average shares. For instance, if the household earned a net negative income of INR 45,000 in cultivation and earned INR 36,000 from other income sources, the total income of the household income turns out to be negative INR 9,000. If share of agricultural income is calculated for such household, it comes out to 500%. Such estimates were inducing a bias in the average share of agricultural income in the household. To avoid such biases, we have only considered households with positive incomes when analysing the shares of different income sources in total income. Since there were a significant number of households with negative incomes, this analysis is somewhat limited. The negative income households will have to be analysed separately to understand their diversification patterns. We also find that there were more than 40% of the rural households that did not possess any land. The diversification patterns of such households differed largely from households that had any kind of land. We have tried to separate analysis for these two types of households in appropriate places.

3. Changes in Incomes of Rural Households

As mentioned previously, we considered seven different income sources of rural households for our analysis. The distribution of the incomes from these different sources and total incomes for the years 2004-05 and 2011-12 are presented in the table 3.1 below.

Table 3.1. Incomes of Rural Households 2004-05 and 2011-12

	2004-05			2011-12			Changes		
Source of Income	Average (1)	Standard Deviation (2)	Coefficient of Variation (3)	Average (4)	Standard Deviation (5)	Coefficient of Variation (6)	CAGR (7) = ((4)/(1))^1/7-1	Average (8) = ((4)-(1))/(1)%	Standard Deviation(9) = ((5)-(2))/(2)%

Agriculture	11629	40256	347%	29259	150446	514%	14.1%	152%	274%
Agricultural Labor	4414	8086	184%	9605	21274	221%	11.8%	118%	163%
Casual Labor	4315	10171	236%	14534	31661	218%	19.0%	237%	211%
Salary	6751	22870	339%	17465	61560	352%	14.6%	159%	169%
Business	4463	20930	470%	10360	69226	668%	12.8%	132%	231%
Remittance	1064	7962	750%	6678	25907	388%	30.1%	528%	225%
Other Income	1611	9062	563%	6893	40204	583%	23.1%	328%	344%
Total	34248	52480	154%	94793	187635	198%	15.7%	177%	258%

From table 3.1, we observe that the average household income increased from INR 34,248 to INR 94,793, an increase of 177%. The CAGR for the period of 7 years turns out to be roughly 15.7%. The growth in income different income sources was not uniform and varied from 118% in agricultural labour to 528% in remittances. Income from salaried employment grew almost on par with rural incomes at 159% during this period. Agricultural income involving cultivation, livestock and lease income, agricultural labour and business income grew by only 152%, 118% and 132% during this period, much lesser than the growth rate of total income. Income from casual labour grew at 237%, higher than the growth of total income. Income from sale of property and benefits from government grew the least among different sources at 328%. The income source that saw the highest growth was remittances, which recorded a growth of 528% during this period. The growth of this along with casual labour income seems to indicate a movement of labour towards nonfarm employment. The reduction in coefficient of variation in these two income sources also indicates that these incomes were becoming more uniform among rural households. This could be either due to more households participating in these activities or the incomes from these sources becoming more uniform among the same participating households or combination of both. The coefficient of variation of household income increased by 44% suggesting an increase in income inequality during the study period. Apart from casual labour income and remittances, coefficient of variation of all the income sources increased indicating increase in inequality of different income sources in the study period.

4. Changes in Income Diversification of Rural Households

As indicated in the methodology section, we are considering only the households with nonnegative incomes from different sources to get unbiased estimates of income diversification patterns and its changes over the study period for the same households. Table

4.1. provides the average shares of different income sources for different income quintiles of the rural households.

Table 4.1. Income Diversification Dynamics

	2004-05	2011-12	Changes
Agriculture	32.9%	29.6%	-3.2%
Agricultural Labor	22.1%	16.0%	-6.1%
Casual Labor	17.0%	20.1%	3.1%
Salary	11.6%	11.3%	-0.3%
Business	9.8%	8.0%	-1.8%
Remittance	2.8%	7.7%	4.9%
Other Income	3.9%	7.2%	3.3%

As table 4.1 indicates, agriculture is the dominant source of income for rural households in both 2004-05 and 2011-12. In 2004-05, the household earned an average of 32.9% from agriculture (cultivation, livestock and lease rent) while in 2011-12 they earned an average of only 29.6%. The same was the case with agricultural labour incomes. The average share of agricultural labour income in total income reduced from 22.1% in 2004-05 to 16% in 2011-12 a reduction of 6.1%. The shares in total income increased for casual labour income and remittances from 2004-05 to 2011-12. The average share of casual labour income increased from 17% in 2004-05 to 20.1% in 2011-12. This meant that casual labour income became the second highest important income source after cultivation in 2011-12 as compared to agricultural labour in 2004-05. The other important income source which has shown a high increase is that of remittances earned from migration to other rural and urban areas. As compared to 2004-05 in which household earned 2.8% of their household income on average, the households earned 7.7% of their household incomes on average from remittances in 2011-12.

The changes observed could be due to various reasons. It could be due to households opting out of a particular activity or give lesser time to a particular activity or reduced wages or returns from the particular activity. Table 4.2 provides the changing dependency on different income sources for the households in the surveys. It shows the percentage of people earning any income from a particular source of income in 2004-05 and 2011-12.

Table 4.2 Changing Dependency on Different Income Sources

Source of Income	Households Earning Income from Source		
	2004-05	2011-12	Change
Agriculture	71.5%	73.6%	2.1%
Agricultural Labour	40.4%	35.4%	-5.0%
Casual Labour	28.2%	46.6%	18.4%
Salary	17.6%	19.1%	1.5%
Business	16.6%	15.3%	-1.3%
Remittance	6.2%	17.7%	11.5%
Other	22.1%	46.9%	24.8%

From the table 4.2, we observe that the number of households earning from agriculture increased from 2004-05 to 2011-12. But as we observed in table 3.1 and table 4.1, income from agriculture grew at a slower rate than total income and also the share of income from agriculture in total income also reduced. This would imply that households are not exiting from agriculture, but either they are providing lesser inputs (land, labour time, operating inputs, etc.,) to agriculture or return/profitability from agriculture reduced during this period or a combination of both.

We also observe that around 5% more households did not earn anything from agricultural labour in 2011-12 as compared to 2004-05. This would mean that more households exited from agricultural labour. This could be one of the reasons for slower growth of agricultural labour income and reducing share of agricultural labour income in total income of rural households. We also find that around 18.4% more households in 2011-12 started earning from casual labour as compared to 2004-05. 11.5% more households in 2011-12 started earning from remittances as compared to 2004-05. So, we observe lesser households earning from agricultural labour and more households earning from casual labour and remittances.

Another way to understand this dynamics is by looking at the changes in the main income sources of the households. By main income source, the survey identified that source from which the household earns the maximum. If two sources contributed to the highest income, then the activity with more number of people in the household involved was used to determine the main income source. Based on these criteria, the households were classified as having one of the eleven main income sources – cultivation, allied agricultural activities, agricultural labour, casual labour, artisan, petty trade, organised business, salaried employment, professional services, pension/rent and others. We reduced these eleven

categories to six of the categories of our study as remittances were not mentioned as a main income source in the questionnaire. Based on this, the classification of households in 2004-05, 2011-12 and changes is mentioned in table 4.3.

Table 4.3 Changing Main Income Sources

Main Income Sources	2004-05	2011-12	Change
Agriculture	36.7%	36.4%	-0.2%
Agricultural Labour	21.2%	16.0%	-5.2%
Casual Labour	16.7%	22.1%	5.3%
Salary	11.8%	8.8%	-3.0%
Business	9.3%	9.4%	0.0%
Others	4.3%	7.3%	3.0%

From table 4.3, we observe that agriculture is the main income source for most households both in 2004-05 and 2011-12. Also, proportion of households with agriculture as the main source has remained pretty constant from 2004-05 to 2011-12. The number of households with agriculture labour as main income source has declined drastically from 21.2% to 16%. Households with casual labour as the main income source have increased from 16.7% to 22.1%. This means that casual labour is the second main source of income in 2011-12 while agricultural labour was the second main source of income in 2004-05. The number of households with business as main income source decreased from 11.8% to 8.8%. In particular, households with artisan as the main income source reduced from 4.8% to 1.4% and that for organised business decreased from 3.1% to 0.5% while households with petty trade as the main income source increased from 3.2% to 6.5%. This indicates a drop in artisan ship and organised business and greater dependence on petty trade.

From observing the shares of income of households, primary income source of households and proportion of households earning income from the source, we find the following things. Dependency on agriculture, agricultural labour and business has decreased among households while that of casual labour, remittances and other sources has increased. Though this is the case, agriculture as a primary source decline among only a few households while agricultural labour and business as primary source declined considerably. Even in business, proportion of households with artisan and organised business as primary income source declined a lot while that with petty trade increased substantially. Among households earning incomes from different sources, those earning from agricultural labour declined by 5% while those earning

from casual labour and remittances increased by 18.4% and 11.5% respectively. All this indicates a shift away from agriculture, agricultural labour and business towards casual labour, remittances and other income.

To further understand the changes in these diversification patterns, we categorize the households based on caste, education, land holding and land holding classes and observe heterogeneity in these changes. Table 4.4 provides the changes for population belonging to different caste groups.

Table 4.4 Income Diversification Changes across Different Caste Groups

		Brahmin	Forward/General (except Brahmin)	Other Backward Castes (OBC)	Scheduled Castes (SC)	Scheduled Tribes (ST)	All
Agriculture	2004-05	43.4%	43.1%	35.7%	18.1%	29.5%	32.9%
	2011-12	35.6%	36.7%	32.8%	18.3%	26.1%	29.6%
	Change	-7.8%	-6.5%	-2.9%	0.2%	-3.4%	-3.2%
Agricultural Labour	2004-05	4.8%	13.4%	19.8%	34.2%	28.2%	22.1%
	2011-12	2.1%	9.6%	14.3%	25.5%	20.0%	16.0%
	Change	-2.7%	-3.7%	-5.5%	-8.7%	-8.3%	-6.1%
Casual Labour	2004-05	8.0%	11.9%	15.4%	24.2%	20.8%	17.0%
	2011-12	10.0%	13.8%	18.2%	27.9%	26.2%	20.1%
	Change	2.0%	1.8%	2.9%	3.6%	5.4%	3.1%
Salary	2004-05	18.4%	13.3%	10.6%	11.0%	11.2%	11.6%
	2011-12	16.8%	13.5%	9.8%	10.6%	12.0%	11.3%
	Change	-1.5%	0.2%	-0.8%	-0.3%	0.8%	-0.3%
Business	2004-05	12.4%	10.7%	11.9%	6.2%	6.5%	9.8%
	2011-12	9.9%	9.6%	9.9%	4.5%	4.8%	8.0%
	Change	-2.5%	-1.1%	-2.0%	-1.8%	-1.7%	-1.8%
Remittances	2004-05	4.6%	3.0%	3.1%	2.7%	1.1%	2.8%
	2011-12	12.3%	8.7%	8.4%	6.2%	4.8%	7.7%
	Change	7.7%	5.8%	5.3%	3.5%	3.7%	4.9%
Other	2004-05	8.4%	4.6%	3.5%	3.6%	2.7%	3.9%
	2011-12	13.3%	8.1%	6.6%	7.0%	6.1%	7.2%
	Change	4.8%	3.5%	3.1%	3.4%	3.4%	3.3%

The share of agriculture in household income is higher than average for Brahmins, Forward castes (except Brahmins) and OBC while it is lower for STs and SCs in both the period. The shares declined in 2011-12 from 2004-05 for all caste groups except SCs. It was significantly high for Brahmins and Forward Castes (7.8% and 6.5%) while the decline was lesser for STs and OBCs (3.4% and 2.9%). This share increased marginally (0.2%) for SCs. The share of agricultural labour was higher than average for SCs and STs while it was lower than average for other castes in both 2004-05 and 2011-12. This share declined for all the castes in the study period. The decline was sharp for SCs and STs (8.7% and 8.3%) while it was lesser for Brahmins, Forward Castes and OBCs (2.7%, 3.7% and 5.5%). The share of casual labour in income was above average for SCs and STs in both the years and this share increased for all the castes from 2004-05 to 2011-12. This increase was steeper for SCs and STs compared to

other castes. The salary income's share was higher than average for Brahmins and Forward Castes on both the years. This share also remained almost constant for all castes except Brahmins for whom this registered a slight decline. The decline in business share was also quite low and was pretty constant across caste groups. The share of remittances registered a steep increase among Brahmins and Forward Castes and OBCs (7.7%, 5.8% and 5.3%), while it was lower for SCs and STs (3.5% and 3.7%). In summary, it seems that Brahmins, Forward Castes and OBCs are shifting their dependency from agriculture towards remittances and SCs and STs are shifting from agricultural labour to casual labour.

We also classify the households based on highest education acquired by adult (above 21 years). Table 4.5 provides the income diversification across households with different highest education acquired by any adult.

Table 4.4 Income Diversification Changes across Different Education

		Illiterate	Upto Primary	Above Primary upto Secondary	Above Secondary upto Higher Secondary	Above Higher Secondary	All
Agriculture	2004-05	26.1%	31.3%	36.0%	39.9%	39.8%	32.9%
	2011-12	22.9%	27.4%	31.5%	33.9%	35.3%	29.6%
	Change	-3.2%	-4.0%	-4.5%	-5.9%	-4.5%	-3.2%
Agricultural Labour	2004-05	33.9%	27.0%	16.9%	8.8%	5.4%	22.1%
	2011-12	23.4%	19.3%	15.2%	11.4%	5.5%	16.0%
	Change	-10.5%	-7.7%	-1.7%	2.5%	0.1%	-6.1%
Casual Labour	2004-05	21.5%	19.8%	16.3%	9.6%	4.7%	17.0%
	2011-12	23.6%	26.3%	22.0%	14.0%	7.1%	20.1%
	Change	2.0%	6.5%	5.7%	4.4%	2.4%	3.1%
Salary	2004-05	5.4%	6.7%	13.4%	19.9%	28.0%	11.6%
	2011-12	4.6%	5.5%	10.8%	18.0%	25.3%	11.3%
	Change	-0.9%	-1.2%	-2.7%	-1.9%	-2.6%	-0.3%
Business	2004-05	5.6%	9.8%	11.6%	14.1%	12.4%	9.8%
	2011-12	4.4%	7.1%	8.7%	10.8%	11.1%	8.0%
	Change	-1.2%	-2.7%	-2.9%	-3.2%	-1.3%	-1.8%
Remittances	2004-05	4.1%	2.3%	2.2%	2.5%	2.2%	2.8%
	2011-12	12.2%	8.2%	6.1%	5.4%	5.4%	7.7%
	Change	8.1%	6.0%	3.9%	2.9%	3.3%	4.9%
Other	2004-05	3.3%	3.1%	3.5%	5.3%	7.6%	3.9%
	2011-12	8.9%	6.2%	5.6%	6.5%	10.2%	7.2%
	Change	5.6%	3.2%	2.1%	1.2%	2.6%	3.3%

From the above table we find that decline in share of agriculture is higher among households with higher education while decline in share of agricultural labour is predominant among households that are illiterate or with education lesser than primary education. The increase in share of casual labour is low for illiterate households and households with an adult having education above higher secondary. The increase is seen more among households with highest adult education between primary and higher secondary. The increase in share of remittances is also predominant in households whose highest adult education is primary or illiterate. So,

we find the illiterate and primary education households moving away from agricultural labour and moving into casual labour and remittances. The higher educated groups seem to move away from agriculture into more of casual labour and less into remittances.

For understanding the heterogeneity across landholding, we first identify whether households possess land or not. We look into the changes of the diversification of these two types of households as the income diversification patterns of these households would differ significantly and the changes in diversification patterns might also differ. Figures 4.1a, 4.1b and 4.1c provide the distribution of households based on landholding, distribution of households that do not possess any land and distribution of landholding among the farmers who possess land.

Figure 4.1a Classification of Farmers based on Landholding

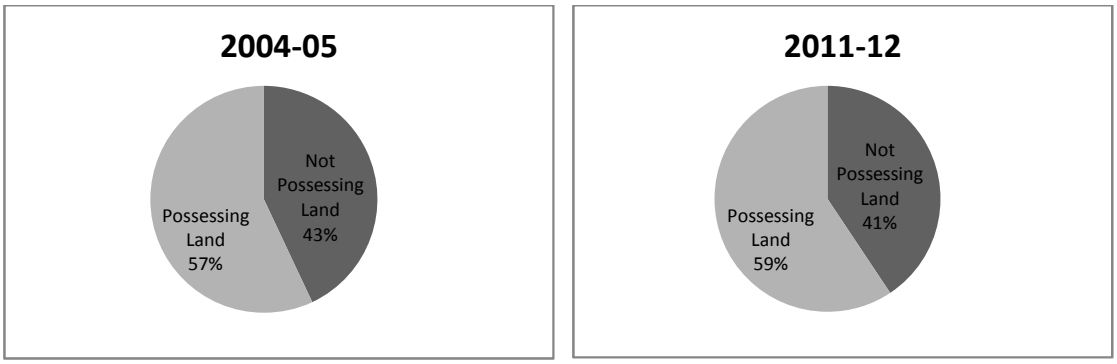


Figure 4.1b Classification of Farmers who do not Possess any Land

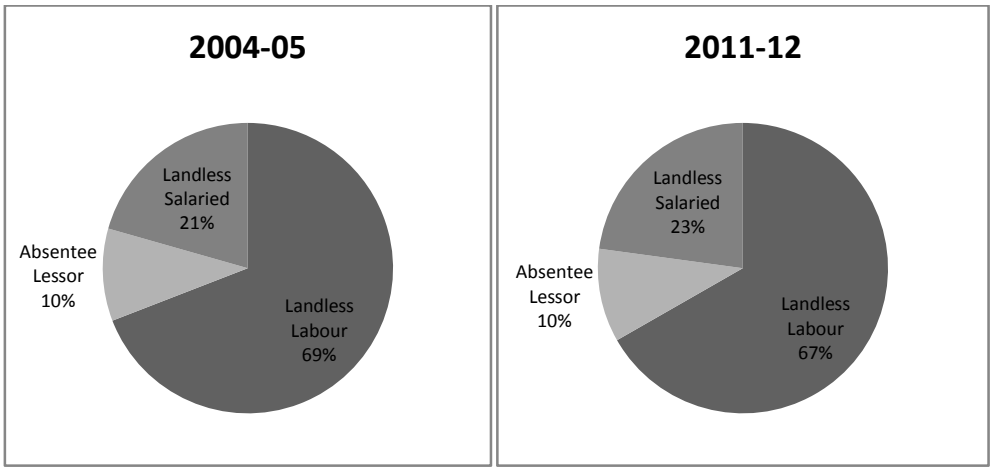
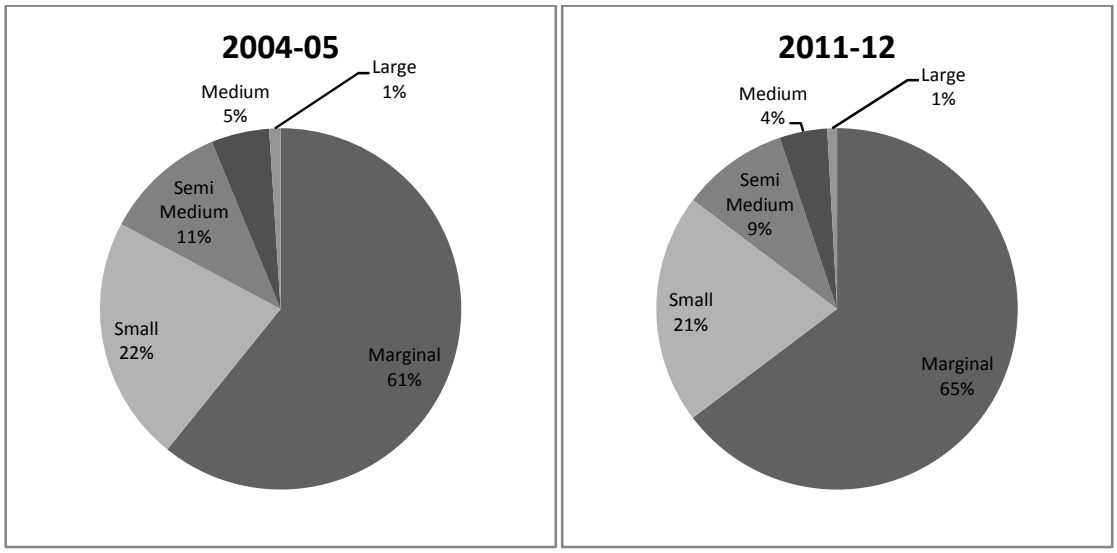


Figure 4.1c Classification of Farmers who Possess any Land



From the above figures, we find that around 43% rural households did not possess any land in 2004-05. This figure went down to 41% in 2011-12. This was due to slight increase in tenancy in 2011-12. Rural households with no possession of land is a broad category as it might include not just landless labourers who did not own land at any point of time, but also those households with members getting employed in salaried jobs and then quitting farming because of that. As we look into the diversification patterns of this category, we will be able to understand the heterogeneity in this group. Among the farmers who do not possess any land, 69% and 67% in 2004-05 and 2011-12 respectively did not earn any income from salaried employment and we classified these households into landless labourers. 10% of the households owned land but had leased out all of their land. 21% and 23% of households in 2004-05 and 2011-12 respectively were landless but had some income from salaried

employment. Among those who possessed land 83% and 86% in 2004-05 and 2011-12 repsectively had a land less than 2 hectares.

Table 4.5 provide the details of income diversification dynamics among the households which do not possess any land in 2004-05 and 2011-12

Table 4.5 Income Diversification Dynamics among Households which do not Possess any Land

		Landless Labour	Absentee Lessor	Landless Salaried	All Landless	All
Agriculture	2004-05	4.4%	41.2%	2.6%	8.3%	32.9%
	2011-12	3.8%	31.9%	1.8%	6.6%	29.6%
	Change	-0.6%	-9.3%	-0.9%	-1.6%	-3.2%
Agricultural Labour	2004-05	40.4%	11.1%	10.0%	30.3%	22.1%
	2011-12	29.5%	6.3%	7.6%	22.2%	16.0%
	Change	-11.0%	-4.8%	-2.4%	-8.1%	-6.1%
Casual Labour	2004-05	31.3%	9.3%	6.6%	23.3%	17.0%
	2011-12	34.3%	8.7%	11.1%	26.3%	20.1%
	Change	3.0%	-0.6%	4.5%	3.1%	3.1%
Salary	2004-05	0.0%	12.6%	74.0%	17.6%	11.6%
	2011-12	0.0%	12.4%	67.5%	17.1%	11.3%
	Change	0.0%	-0.2%	-6.5%	-0.5%	-0.3%
Business	2004-05	16.4%	14.1%	4.1%	13.5%	9.8%
	2011-12	13.5%	11.7%	4.4%	11.8%	8.0%
	Change	-2.9%	-2.4%	0.3%	-1.7%	-1.8%
Remittances	2004-05	3.5%	5.5%	0.6%	2.7%	2.8%
	2011-12	9.8%	13.2%	2.7%	7.2%	7.7%
	Change	6.3%	7.6%	2.1%	4.4%	4.9%
Other	2004-05	4.0%	6.1%	2.2%	4.4%	3.9%
	2011-12	9.3%	15.9%	5.0%	8.8%	7.2%
	Change	5.3%	9.8%	2.9%	4.4%	3.3%

From table 4.5, we observe that the share of agriculture income in total income has declined for absentee lessors, the share of agricultural labour has declined for landless labour and that of salaried income has declined for the landless salaried group. Casual labour's share in income increased for the landless labourers and salaried landless households while remittance's share in income increased for landless labourers and absentee lessors. The share of agriculture for the landless as a group declined lesser compared to all households (1.6% as compared to 3.2%). Agricultural labour's share declined by 8.1% for this group compared to 6.1% for the whole population. Share of salary and business declined similarly for the landless as well as the whole population. The increase in remittance's share was slightly lower for the landless group compared to those households which possess any land.

Table 4.6 below provides the changes in diversification strategies of those rural households which possess land.

Table 4.6 Income Diversification Dynamics among Households which Possess Land

		Marginal	Small	Semi-Medium	Medium	Large	All Landed	All
Agriculture	2004-05	43.1%	60.8%	72.1%	81.9%	81.6%	53.6%	32.9%
	2011-12	36.1%	57.4%	67.7%	76.0%	70.5%	46.1%	29.6%
	Change	-7.0%	-3.3%	-4.4%	-5.9%	-11.1%	-7.5%	-3.2%
Agricultural Labour	2004-05	18.9%	11.3%	6.3%	1.9%	3.2%	14.1%	22.1%
	2011-12	13.9%	10.3%	4.9%	2.1%	4.0%	11.2%	16.0%
	Change	-5.0%	-1.0%	-1.4%	0.2%	0.8%	-2.9%	-6.1%
Casual Labour	2004-05	14.7%	7.8%	4.4%	3.3%	4.6%	10.9%	17.0%
	2011-12	20.2%	8.9%	5.5%	3.9%	2.3%	14.7%	20.1%
	Change	5.5%	1.0%	1.1%	0.6%	-2.3%	3.8%	3.1%
Salary	2004-05	8.7%	7.9%	7.1%	5.0%	4.7%	9.3%	11.6%
	2011-12	9.5%	7.7%	7.0%	4.9%	3.6%	9.5%	11.3%
	Change	0.8%	-0.1%	-0.1%	0.0%	-1.1%	0.2%	-0.3%
Business	2004-05	7.5%	6.2%	4.9%	3.9%	4.1%	5.9%	9.8%
	2011-12	6.0%	4.5%	5.2%	6.6%	10.1%	6.1%	8.0%
	Change	-1.5%	-1.7%	0.4%	2.7%	6.0%	0.1%	-1.8%
Remittances	2004-05	3.0%	1.9%	2.2%	1.3%	0.8%	2.3%	2.8%
	2011-12	8.3%	4.8%	4.4%	3.9%	2.1%	6.8%	7.7%
	Change	5.3%	2.9%	2.2%	2.6%	1.2%	4.5%	4.9%
Other	2004-05	4.1%	4.1%	3.0%	2.7%	1.1%	3.8%	3.9%
	2011-12	5.9%	6.4%	5.3%	2.6%	7.5%	5.6%	7.2%
	Change	1.8%	2.3%	2.2%	-0.1%	6.4%	1.7%	3.3%

Among those households which possessed land, share of agriculture in total income decreased the most for large farmers. The share of agricultural labour income reduced most for marginal farmers. The share of casual labour increased the most for marginal farmers. Business income as a share of total income increased for medium and large farmers. Remittances as a share of income increased most among marginal farmers. Other income which included rental income and government benefits increased the most for large farmers.

5. Changes in Income Inequality and its Sources

In the previous section, we analysed the changes in sources of income among rural households in India. We also looked at heterogeneity in these changes among different social groups. Now, we will analyse the changes in sources of income inequality among rural households using inter-quintile analysis and gini decomposition technique.

Table 5.1 below provides the average income from different income sources and household income for the rural households in different quintiles for the years 2004-05 and 2011-12.

Table 5.1 Distribution of Incomes from Different Sources and Household Income

Sources of Income	2004-05					2011-12					Q5/Q1 2004-05	Q5/Q1 2011-12
	Q1	Q2	Q3	Q4	Q5	Q1	Q2	Q3	Q4	Q5		
Agriculture	293	3167	5216	10377	39107	-666 (-327%)	7885 (149%)	12466 (139%)	20662 (99%)	106445 (172%)	133.4	-159.9
Agricultural Labour	2482	4964	5932	5502	3189	3747 (51%)	8286 (67%)	11456 (93%)	15088 (174%)	9562 (200%)	1.3	2.6
Casual Labour	1071	3204	4838	6698	5768	3220 (201%)	9638 (201%)	14554 (201%)	20889 (212%)	24430 (324%)	5.4	7.6
Salary	350	763	2041	4087	26526	929 (166%)	2365 (210%)	5164 (153%)	12100 (196%)	66840 (152%)	75.8	71.9
Business	371	1214	2137	4503	14099	1040 (181%)	2667 (120%)	5315 (149%)	8622 (91%)	34191 (143%)	38.0	32.9
Remittance	208	313	595	965	3240	1451 (598%)	3165 (913%)	4683 (687%)	7951 (724%)	16085 (396%)	15.6	11.1
Other	131	175	271	1172	5372	168 (29%)	203 (16%)	917 (239%)	4226 (261%)	17307 (222%)	41.1	103.0
TOTAL	5065	13956	21184	33391	97680	11166 (120%)	35457 (154%)	56306 (166%)	91722 (175%)	279920 (187%)	19.3	25.1

Note: The figure in brackets indicate the percentage change in the particular income source for the particular quintile from 2004-05 to 2011-12.

From table 5.1, we find that the income of households in first quintile increased by 120% while that in the fifth quintile increased by 187% with higher quintiles seeing higher growths. This has increased the inter-quintile household income ratio from 19.3 to 25.1. In agriculture, income of the lowest quintile declined from 293 to -666 while that of the fifth quintile increased by 172%. This has impacted the inter-quintile agricultural income ratio drastically and it increased from 133 to -160. Agricultural labour, casual labour and other income all increased more for highest quintile compared to lowest quintile from 2004-05 to 2011-12. The inter-quintile ratio for these incomes changed from 1.3, 5.4 and 41.1 to 2.6, 7.6 and 103 respectively. In salary, business and remittances, growth in lowest quintile during the study period increase more than that of the highest quintile. This meant that the inter-quintile ratio decreased from 76, 38 and 16 to 72, 33 and 11 respectively.

To understand how these changes in incomes for different quintiles affected gini coefficeint, we use a gini decomposition analysis. Table 5.2 indicates the gini decomposition and elasticity among rural households in 2004-05 and 2011-12.

Table 5.2 Gini Decomposition of Income Inequality

Sources of Income	2004-05					2011-12					Change in elasticity (10)-(5) (11)
	S_k (1)	G_k (2)	R_k (3)	Share In gini (1)*(2)*(3)/G1 (4)	Elasticity (4)-(1) (5)	S_k (6)	G_k (7)	R_k (8)	Share In gini (6)*(7)*(8)/G2 (9)	Elasticity (9)-(6) (10)	
Agriculture	36.8%	86.6%	76.9%	45.7%	8.9%	33.2%	89.4%	78.3%	41.7%	8.5%	-0.4%
Agricultural Labour	11.3%	78.4%	1.0%	0.2%	-11.1%	9.3%	82.7%	15.4%	2.1%	-7.2%	3.9%
Casual Labour	11.2%	84.6%	23.5%	4.1%	-7.0%	13.7%	80.7%	32.8%	6.5%	-7.2%	-0.2%
Salary	21.5%	90.4%	78.7%	28.5%	7.0%	19.6%	90.5%	77.2%	24.6%	5.0%	-2.0%
Business	11.9%	93.1%	65.3%	13.5%	1.6%	10.8%	94.1%	67.1%	12.3%	1.4%	-0.2%
Remittance	2.7%	97.5%	55.0%	2.7%	0.0%	6.3%	92.7%	49.1%	5.2%	-1.2%	-1.2%
Other Income	4.7%	94.9%	63.7%	5.3%	0.6%	7.2%	91.1%	65.9%	7.7%	0.6%	0.0%
TOTAL	100.0%	53.6%	100.0%			100.0%	55.7%	100.0%			

From table 5.2, we find that the overall gini coefficient has increased from 0.536 in 2004-05 to 0.557 in 2011-12. So, inequality of incomes among rural households has increased during this period. In terms of contribution to income and gini, we find that agriculture contributed to 36.8% of income and 45.7% of gini in 2004-05. Its elasticity to gini was 8.9% which meant that a marginal increase in share of agriculture would have increased gini by 8.9% and thus it was an inequality increasing income source. In 2004-05, income from business, salaried employment other income were inequality increasing while that from casual and agricultural labour were inequality decreasing. In 2011-12, elasticity of agriculture income to gini changed slightly to 8.5% which meant that agriculture became less inequality increasing during the period. This was mainly due increase in share of agriculture in total income. The elasticity of gini to change in agricultural labour actually increased which meant that agricultural labour became less inequality decreasing during the period. This was due to increase in gini and gini correlation of agricultural labour. This meant that agricultural labour income became more unequal and also more biased towards households belonging to higher quintiles. Casual labour became slightly more inequality decreasing in 2011-12 than in 2004-05 due to increase in share and decline in its gini. The gini correlation though increased for casual labour indicating this became more favourable towards households in higher quintiles. Business and Salaried income also became more inequality decreasing largely due to decline in their share of total incomes. The gini though increased for both the sources. The gini correlation declined slightly for salary. Remittances increased its share in household income, registered a decrease in gini and gini correlation with household income. This meant that

while share of remittances in household income and gini of household income was almost the same in 2004-05, it contributed more to income and less to gini in 2011-12. So, remittances not just increased its share in total income but also were earned more by lower quintiles and have an equalising effect on household income. Remittances and casual labour were thus the only sources of income which increased their shares in income and simultaneously contributed to decline in inequality. Though casual labour was becoming favourable towards the richer quintiles (increasing gini correlation), remittances was not becoming so.

6. Discussion

The chapter analysed the changes in incomes, income diversification and income inequality of rural households between 2004-05 and 2011-12 using the nationally representative Indian Human Development Survey (IHDS). India went through a phase of high economic growth during this period with average economic growth rate higher than 8% during the period. By looking at the different changes in the incomes of rural households, we comment on the type of economic growth and the impact it had on distribution of incomes.

We find that during this period, incomes of the rural households have grown by around 177%. The growth rates increased with quintiles and higher quintiles registered higher growth increasing the gini coefficient of rural household income during the period. Among the different income sources, income from agriculture, agricultural labour, business and salary registered a growth lower than the average household income growth with agricultural labour registering the slowest growth. We also find that more households do not earn incomes from agricultural labour in 2011-12 as compared to 2004-05. It could be the reason for the slow growth of agricultural labour income despite the rural wages registering a positive growth during the period. More households earn from casual labour and remittances in 2011-12 as compared to 2004-05.

Across different categories of population, we find that there is a decline in share of agricultural incomes and agricultural labour incomes and a gain in share of casual labour and remittances. Though this is the case, the decline in the two categories and the gain in casual labour and remittances are heterogeneous. Among different social groups, we find that Brahmins, forward castes and OBC have lesser shares of income from agriculture in 2011-12 and have increased their shares in remittances more than in casual labour. SCs and STs earn lesser share from agricultural labour in 2011-12 and have increased the share more from casual labour than in remittances. Among the groups with different education, households

with highest adult education as illiterate and more than higher secondary have increased a higher share in remittances than in casual labour. Those with highest adult education between primary and higher secondary have increased a higher share in casual labour than in remittances. Among those who do not possess any land, landless labourers and absentee lessors have increases their share from remittances more than that from casual labour while the landless salaried have become more dependent on casual labour than in remittances. Among those who possess land, all the land-size classes have increased share in remittances more than in casual labour.

In terms of elasticity of the income to inequality, we find that increase in income from agriculture, business, salary and other income would increase gini in both the years. Between the two time periods, income from agriculture, business and salary became less inequality increasing while income from business became more inequality increasing. We also find that income from agricultural labour, casual labour and remittances were inequality decreasing in both the time periods. Agricultural labour became more inequality increasing though during this period. Casual labour and remittances though became more inequality decreasing in the time period. This would mean that the poorer households are earning less from agricultural labour and more from casual labour and remittances. This might mean increased pressure on urban spaces due to migration in future and there have to be measures to ensure both the monetary and subjective well-being of labourers including migrants. Efforts should also be focussed on creating opportunities and equitable growth in rural nonfarm sector.

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