Dynamics of Rural Labor Markets in India: Implications for Inclusive Development Strategy

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Introduction

The rural labor market in India has undergone remarkable changes over the years. Diversified opportunities for employment with increased economic growth, introduction of employment guarantee scheme, demographic change along with expansion of universal education for all girls and boys, increased connectivity and mobility from rural to urban areas, changes in trade policies, attitude towards participation of women in economic activities outside their home have altered the rural labor market dynamics. This policy brief deals with the dynamics of rural labor markets in India. It focuses on the trends in rural employment, rural labor markets, and sources of livelihood and living standards of the rural labor class. It documents both short and long-term changes in rural labor markets observed in India. It identifies the key drivers of changes in the rural labor market, determinants of labor supply and wage rate. Finally, some suggestions are put forward to overcome the challenges in the rural labor market and for an inclusive growth strategy in India. The term inclusive growth is used in this policy brief to include landless labor, smallholder farmers, women and youth who will all be an integral part of the growth process and benefit from the rural and overall economic growth in the country.

The background information, analysis and policy suggestions put forward through this policy brief are drawn from the papers presented at the National Symposium and Dialogue on "Dynamics of Rural Labor Markets: Implications for Agricultural Growth and Rural Transformation" held on 15-16 September 2014 at the National Academy of Agricultural Sciences (NAAS), New Delhi. The Symposium was organized jointly by International Crops Research Institute for the Semi-Arid Tropics (ICRISAT), National Centre for Agricultural Economics and Policy Research (NCAP), International Food Policy Research Institute (IFPRI), and Institute for Human Development (IHD). Inputs from the participants as well as from the research papers are included in this policy brief. Using macro, meso and household level data, these studies have systematically analyzed the emerging trends in the rural labor markets and their implications along with the underlying factors behind the direction of rural transformation. Based on the empirical findings of the studies, some interventions have been identified towards attaining desirable development that would improve the working and living conditions of rural labor class.

Changes in the Rural Labor Market

Labor Force Participation by Gender

During the last three decades, the participation rate for males in the rural labor force in India was steady at about 56 percent, but it has experienced a steep decline for females from about 33 to 34 percent till 2004-05 to 26.5 percent by 2009-10. The rural labor force participation rates (LFPR) of males and females in India during the last three decades shows substantial differences. Not only has the participation rate of the rural female labor force in India been much lower than the males, but also the female participation rate has been much lower compared to most of the developing countries, with the exception of the Middle-East Asian countries (Reddy 2014). At the all India level, rural male LFPR has been stable over the years at about 56 percent, while rural female LFPR which was at about 33 to 34 percent till 2004-05, has shown a steep decline to 26.5 percent

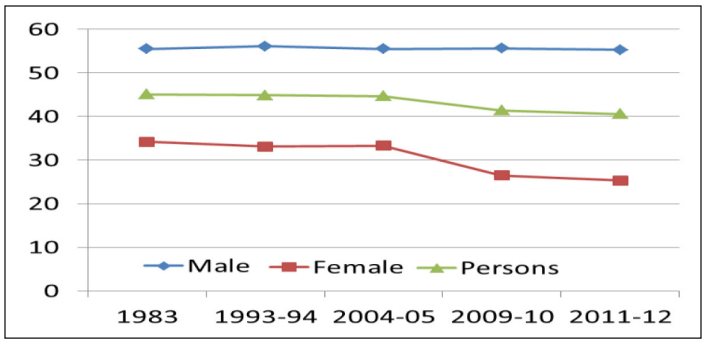


Figure 1. Rural Labor Force Participation Rates (%) in India.
Source: Reddy (2014), Table 1.

by 2009-10 (Figure 1). The decline of rural female LFPR is partly due to the increasing enrolment of girls in education, and partly due to the increase in the real wages of rural male workers, which result in improved income that facilitates withdrawal of women from income earning activities.

Analysis of household level longitudinal panel data from six villages in Maharashtra and Telangana indicated different scenario for the sample households. The study showed that growth in labor force was higher in the 2000s than in the 1970s. Participation of women in economic activities including agricultural activities has increased. In the most recent year (2012), higher number of children and young adults are engaged in education and therefore, entry age in the labor force has increased. Almost all children (up to 14 years) are now engaged in education and large majorities of population up to 20 years are studying (Deb, Bantilan and Khan 2014).

Strong evidence on feminization of labor and agriculture in the study villages in Maharashtra and Telangana, but the cause and extent varies across regions. Analysis of the long-term panel data from 1975 to 2011 clearly points to evidence of a progressive feminization of labor and agriculture in the study villages (Padmaja and Bantilan 2013). The study showed that men and women continue to participate jointly in agricultural activities in regions that favor sustained dependence on agriculture. Role of women in agriculture increased in these cases, but to a lesser extent, for example, Kanzara village in Akola district of Maharashtra (Figure 2). On the other hand, in regions that have experienced drought shocks like Mahbubnagar villages (Aurepalle), women have a greater role and engagement in agriculture depending on the coping strategies the household adopts - changing cropping patterns and diversification; working as paid labor on others farms and lastly male members of the household migrating to towns leaving the women to take care of the farms as well as participate in the care economy. In such cases, the coming together of women and strengthened collective action through the formation of informal groups and networks has empowered women. Women use their collective participation in self-help groups, which have a primary function of

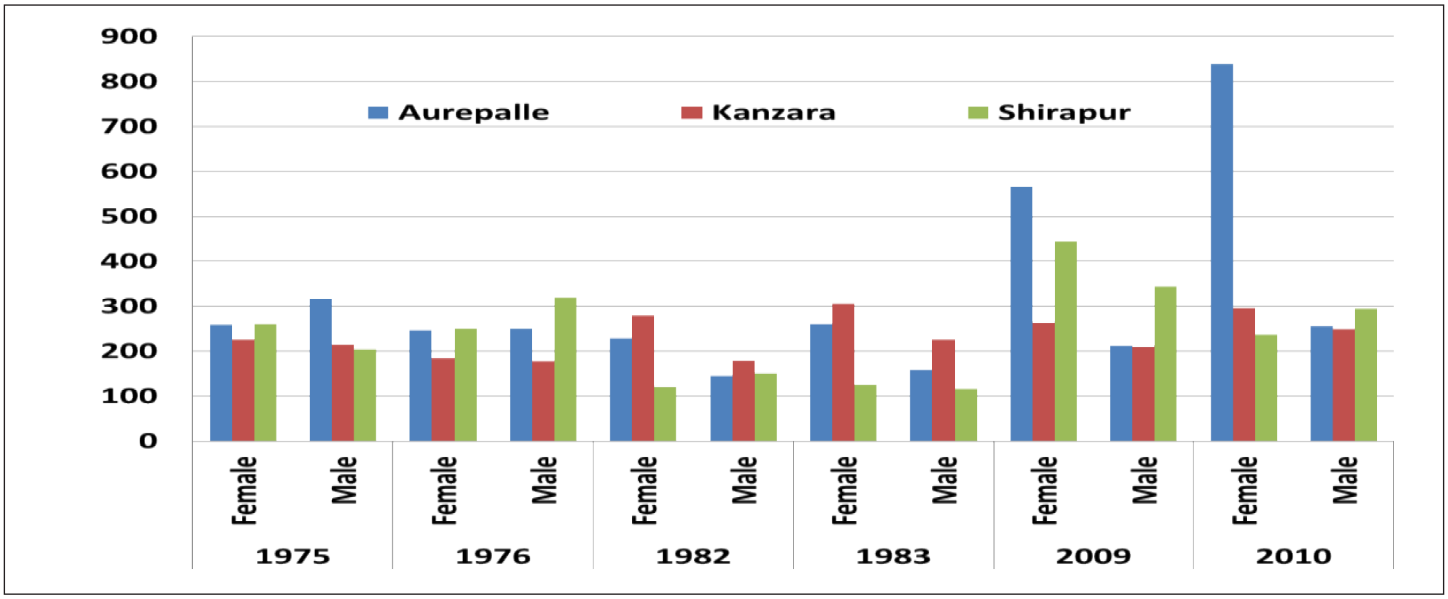


Figure 2. Trends in participation (hours per hectare) of male and female workers in selected villages of Maharashtra and Telangana, 1975-2010.
Source: Padmaja and Bantilan (2013).

saving and these savings are also used as collateral in banks for obtaining credit (as women do not have land on their name). The key message then is that in regions like the SAT which have a harsh, fragile environment and experience a bias in terms of policy and investment, informal networks like social networks need to be recognized, strengthened and facilitated for empowering women in agriculture. Formal networks and institutions such as banks, markets alone may not be helpful for women.

Occupational Distribution of Labor Force

Non-agriculture sector dominates rural production structure in recent years while agriculture sector still contributes one-third of the national domestic products (NDP) in the rural areas: The production structure of rural India has changed substantially over the years. Agriculture is no longer the dominant sector of the economy (Reddy 2014). The share of agriculture has declined from about two-thirds (64.36%) of the rural national domestic product (NDP) in 1980-81 to about a little over one-third by 2009-10 (Table 1). It is now the non-agricultural activities which together account for almost two-thirds (65%) of the rural NDP. The drivers of change have been construction, trade, hotels, transport, storage and manufacturing. The share of construction has increased from about 4 percent in 1980-81 to 15 percent in 2009-10. During the same period, share of trade, hotels, etc, have increased from about 7 percent to 18 percent. On the other hand, share of transport and storage has increased from about 1 percent to 7 percent. The share of manufacturing, which had the highest share in non-agriculture output in 1980-81, has been reduced to lowest share of about 12 percent in 2009-10. What is noteworthy is that though these changes have been in evidence since early 1980s, the acceleration of the shifts in the rural production structure has been more in evidence since 2004-05. Overall, *the faster growth of non-agricultural sector resulted in growing productivity differences between agriculture and non-agriculture* (Binswanger-Mkhize 2013). *The productivity gap between agriculture and non-agriculture increased from 1:2.7 in 1993-94 to 1:5.6 in 2009-10* (Papola 2013).

Table 1. Changing Structure of Rural National Domestic Product (NDP).

	1980-81	1993-94	2004-05	2009-10
I. Agriculture	64.36	56.99	38.34	35.00
II. Non-Agriculture	35.64	43.01	61.66	65.00
Manufacturing	9.16	8.15	11.13	11.85
Construction	4.05	4.61	7.91	15.00*
Trade / Hotels, etc.	6.68	7.77	14.98	18.00*
Transport / Storage	1.32	3.41	5.81	7.00*

Note: Figures rounded to nearest integer. Source: Papola (2012)
*Projected

Household level longitudinal panel data based analysis from six villages in Maharashtra and Telangana indicated that agriculture was the primary occupation for about 88 percent of the sample households in the mid-1970s, which has been reduced to about 70 percent in 2012. On the other hand, non-farm occupations are the primary occupation for about one third of the labor force against only 12 percent in the mid-1970s. Counting both primary and secondary occupations, non-agriculture provides employment to 45 percent of the workforce in 2012. On the other hand, agriculture was the source of primary and secondary occupation for 115 percent of the workforce. This implies that many of the rural folks are now engaged in multiple occupations (Deb, Bantilan and Khan 2014).

Trends in Farm and Non-farm Employment

With the expansion of non-farm activities, rural employment structure changed over time but the pace of structural change in rural employment did not keep pace with the changes in production structure. Agriculture still provides employment for about two-thirds (65 percent) of the rural labor force. The share of agriculture in rural employment continued to be at a very high level, over 80 percent till 1983, but from 1993-94 the share of agriculture declined at a faster rate and reached 65 percent in 2009-10. The pace of decline in the share of agriculture in rural employment was much faster in the last quinquennium of 2004-05 and 2009-10. For the first time, employment in agriculture experienced a net decline of -0.19 percent per annum during

this period (Reddy 2014). Increase in the share of rural non-farm employment (RNFE) was driven especially by the construction sector. Construction, with a share of 9 percent had the lowest share in the RNFE in 1983, but by 2009-10 with a share of 29 percent, it emerged as the single largest segment of RNFE. In the total rural employment, regular employment constitutes only about 7 percent, and a substantial proportion (90 percent or 21.8 millions) of regular rural employment in 2009-10 was provided by non-construction non-farm employment such as manufacturing and "other services". The self-employment component of non-construction non-farm employment is substantially higher at about 54 percent and 58 percent in the case of rural male and female employment, respectively. Non-construction – non-farm employment is considered to have better linkages and synergies with employment in both farm sector and urban activities.

Relatively higher growth rate in non-farm sector in infrastructure, improved transportation and communication, differential wage rates and productivity, education and Government programs are the drivers of change (Ramesh Chand 2014).

***Declining labor absorption in agriculture**:* There is an eloquent observation by a report of the ILO (2007) that "450 million women and men who labor as waged agricultural workers in agriculture, and who are at the heart of the commercial food production system, have been overlooked to date. These waged workers form over 40% of the world's agricultural labor force and along with their families, they are part of the core rural poor in many countries. Wage earning agricultural workers do not own or rent the land on which they work, nor the tools and equipment they use. In these respects, they are a group distinct from farmers. Yet these workers remain invisible in terms of the goals, policies, programs and activities to eliminate poverty …" (ILO 2007). But yet, there is no emphasis that most of these "waged agricultural workers in agriculture" no longer depend solely on agriculture and their work profile reflects multiple occupations as they straddle from agricultural seasonal work to some other non-agricultural work to supplement their incomes. For them a break from dire subsistence hand to mouth existence would also mean overcoming underemployment by seeking additional work beyond limited agricultural work. There is growing evidence that the share of human labor in the total energy used in agriculture is on the decline (IASRI 2012), which results in net decline in employment in agriculture and the future of employment growth in rural India should come essentially from non-farm employment.

Occupational Mobility

Between 2005 and 2012, high level of occupational mobility was observed among the sample households in Telangana and Maharashtra. Two thirds of the farmers in 2005 remained in farming in the later year. Seventy percent of the labor households remained as wage laborers although about one-fourth of them have moved from agriculture to non-agriculture labor. About 60 percent of businessmen remained in business in the later year (Deb, Bantilan and Khan 2014).

Child Labor

Child labor (age less than 15 years) was almost abolished in the study villages of Maharashtra and Telangana (Deb, Bantilan and Khan 2014). In the seventies, only 40 percent of the boys and 25 percent of the girls aged 11-14 years used to go to schools. A large majority of the remaining children used to work in their family farms or as hired labor. In the recent years (2012-13), only 5 percent of the children were engaged as laborers in the non-farm sector. Nobody was engaged as agricultural labor. The three boys (aged 13 and 14 years) engaged in caste occupation and non-farm labor are from labor households. Presence of child labor in the seventies was mainly due to lack of income and financial inability of the poor households to send the children to school. Now, the situation has changed. Even the poor households send their children to the school. Various government programs such as tuition-fee waiver, schooling opportunity, different kinds of scholarships in public schools, free distribution of text books to school students, mid-day meal, subsidized food distributed to the poor through Public Distribution System (PDS) helped the underprivileged to send their children to school. Thus, it appears that the government's efforts accompanied by awareness

and positive attitude towards education have helped to substantially reduce child labor in rural areas although it is not abolished completely.

Seasonal Migration

Seasonal migration plays an important role in the livelihoods of rural labor force particularly in the semi-arid tropics. As mentioned earlier, rural India continues to depend substantially on agriculture, and agricultural operations are characterized by seasonality. About 40%of the arable land in India constitutes semi-arid tropics (SAT) where agriculture largely ends up as a one-season activity. Therefore, rural workers dependent on agriculture seek alternative off-season employment in non-farm activities within the village or migrate seasonally to other rural or urban areas seeking work. Of the four streams of seasonal migration, rural-urban (63%) and rural-rural (30%) together account for 93 percent, and serve as an important source of supplementary employment. Seasonal migrant workers face several disadvantages in their working and living conditions. Often the recruitment process through labor contractors puts migrant workers to disadvantage. In a number of cases the advances made at the time of recruitment may turn into a kind of semi-bondage. The rural seasonal migrant workers are hardly organized and have very little bargaining power. They are mostly employed in the unorganized sector without any regulation, and this compounds their vulnerability. They suffer from longer working hours, poor living and working conditions, social isolation and poor access to basic services. Because of lack of portability, they may be at a disadvantage in availing some of their basis social entitlements like access to public distribution system, public health and schooling for their children. Many of the temporary migrants have dual livelihoods, earning in season in agriculture and moving for non-farm work in urban areas in the off-season, and often left their families behind in the villages. Migrant workers are highly segmented, have very little political clout and are invisible in the policymakers' perspective of development. *In spite of wider recognition that migrant workers play a vital role in the massive surge in construction, trade and services, there is no clear policy towards regulation, ensuring minimum conditions of decent work, basic social security measures and provision of affordable shelter, education and health facilities at the place to where they migrate to work* (Reddy 2014).

Real Wages

At the all India level, real wages for both male and female rural casual labor increased at an average rate of about 3 percent per annum during the past two decades. Female laborers received a wage rate which was about two-third of their male colleagues. Between 1993-94 and 2009-10, daily real wage rate (at 2004-05 prices) of rural casual laborers increased from ₹42.01 to ₹65.56 for male workers and from ₹27.79 to ₹44.52 for female workers (Figure 3).

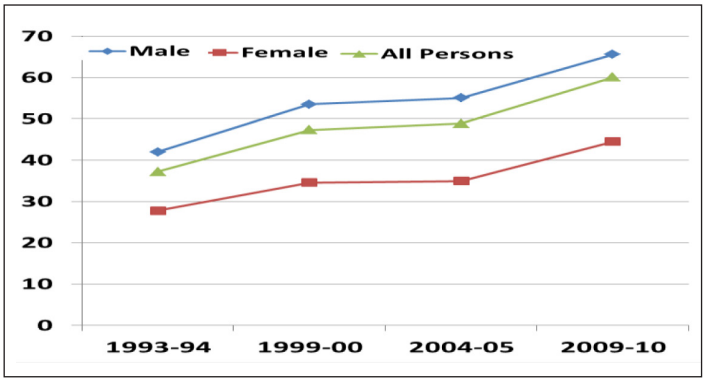


Figure 3. Daily Real Wage Rate of Rural Casual Labor Other Than Public Works (at 2004-05 Prices).
Source: Reddy (2014), Table 13.

Labor Contracts and Bonded Labor

Bonded labor (the system of attached labor in exploitative terms and work conditions) has almost disappeared from the rural labor market. Terms and conditions for labor employment in the study villages have changed substantially and bargaining power of labor groups has increased. It has moved in favor of laborers. Except in certain pockets of the country where elements of feudal relations survive and certain industrial enclaves like brick kilns, quarries and rice mills, bonded labor has been on the wane. Studies on rural and agricultural labor markets in the context of the implementation of the Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA) (Reddy 2012 and Reddy 2013) show a number of changes. Though there is no evidence of increase in the mobilization or organization of rural labor, rural labor markets have witnessed improved *in situ* bargaining power of rural labor. The working

day of agricultural work has experienced decline in working hours but there is increasing tendency towards payment of wages by piece rate even in agriculture. In the 1970s, many families had regular farm servants (RFS). RFS were paid in cash and kind. They used to work according to the requirements of the employer although their works were primarily in crop fields. Usually RFS were recruited for a year and paid after the end of the contract period or in several installments. With the ease in availability of work opportunities throughout the year, laborers do not want to work as RFS. RFSwere almost abolished in the study villages of Maharashtra and Telangana. Daily wage rate basis works are preferred by the laborers. Contractual mode of payment has emerged for some farm and non-farm works. Workers are paid for the volume of work accomplished, which is negotiated by both parties. Wage payments have gradually moved from kind to cash (Deb, Bantilan and Khan 2014).

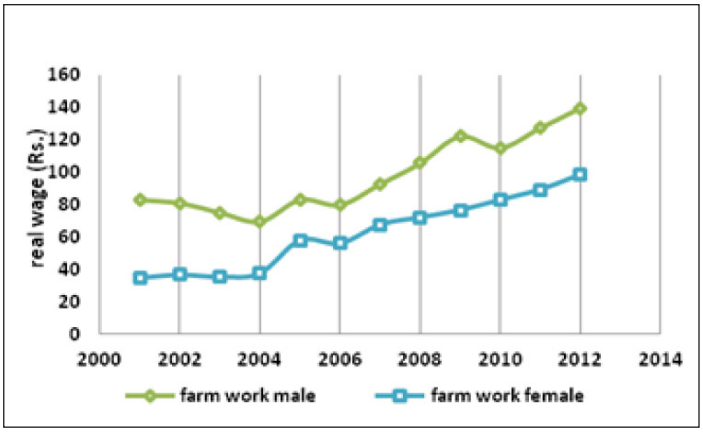
MGNREGS and Rural Labor Market

Mahatma Gandhi National Rural Employment Guarantee Scheme (MGNREGS) has increased average days of employment and wage rates for both male and female laborers. Using secondary data on farm wages published by the Labour Bureau of India by gender and farm operation across the states, Narayanamoorthy and Bhattarai (2013) have shown that the real wage rates have increased substantially during post-MGNREGS period (2005-06 to 2010-11) as compared to pre-MGNREGS period (2000-01 to 2005-06) for both male and female agricultural laborers in all the major farming operations. The rate of increase in wage rates has been found to be higher across the female agricultural laborers as compared to their male counterparts. The regression analysis has suggested that the average days of employment per household by MGNREGS, productivity of foodgrains, and road density have positively fuelled the growth rate of wages for both male and female farm laborers. MGNREGS has broken the long stagnation in real wage ratesin rural India and is contributing towards the goal of inclusive growth (Chand 2014).

MGNREGS has increased agricultural wage rates in Andhra Pradesh. Using panel data across 23 districts of Andhra Pradesh (old state) from 2000 to 2011, Bhattarai et al. (2014) analyzed major determinants of variation of agricultural wage across the districts in Andhra Pradesh. The results imply that the rural wage rate for men and women increased in Andhra Pradesh since 2006, when MGNREGA was initiated in the state. Despite MGNREGA paying equal wage rate to men and women, the average unskilled wage rate for men was higher than that of women. Likewise, MGNREGS workdays per household (intensity), average literacy rate, and crop (rice) productivity have contributed positively towards increasing farm wage rates in Andhra Pradesh.

Real wages both for farm and non-farm works exhibited an upward trend especially after the implementation of MGNREGA in 2006 (Nagaraj et al. 2014). Between 2001 and 2012, farm wage rate for men has increased by 68% as against 183% for women. During this period, the non-farm wage rate for men increased by 86% as against 141% for women in Telangana (Figure 4). A similar trend was evident for Maharashtra also. However, in Maharashtra the non-farm wage rate for women increased faster as compared to farm wage rate (Figure 5). Though percentage change in wage for the period is higher for women than men, the perpetual phenomenon of gender wage inequality in rural labor market is continuing over the period (2001-2012). It has increased from 2006 onwards with higher gender wage gap in non-farm work as compared to farm work. The gender inequality in farm wages has reduced in Andhra Pradesh as compared to Maharashtra. This may be due to effective implementation and better performance of MGNREGA in Andhra Pradesh. Thus the trends in real wages clearly reflect that the wage rate for farm and non-farm is moving upwards especially after implementation of MGNREGA. This has serious implication on the agricultural sector in terms of increasing cost of production leading to squeezing of net margins to the farmers. Hence farmers may be forced to use more of mechanical power to perform the required agricultural operations such as tillage and harvesting on time or they may substitute other inputs such as herbicides to control weeds in place of labor to augment productivity and profitability.

The average daily wage rates of male farm workers has grown sharply after NREGA at the rate of 3.6 percent in Andhra Pradesh and 7.7 percent in



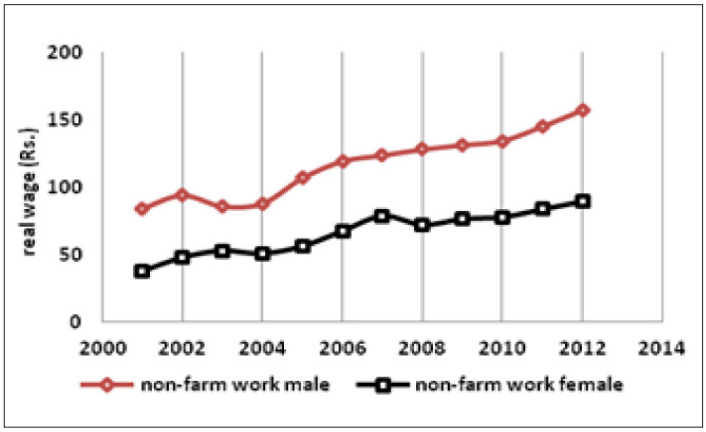
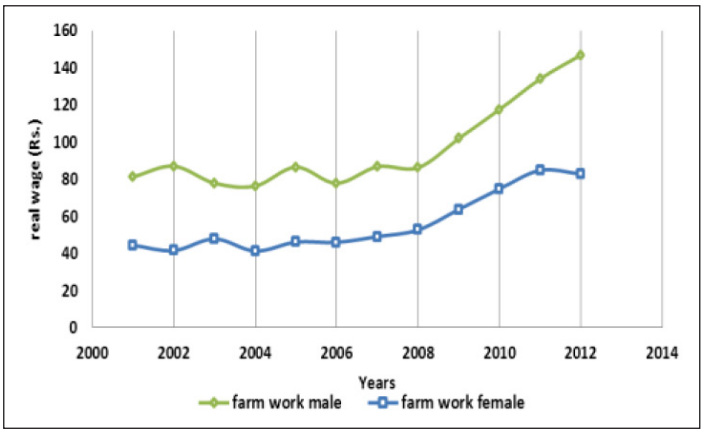


Figure 4. Trends in Real wage per person day across gender in Telangana for Farm and Non-farm work (2001-2012).
Source: Nagaraj et al. (2014).



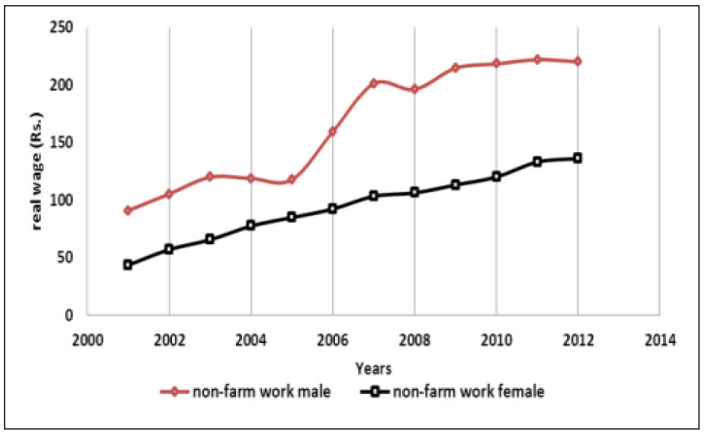


Figure 5. Trends in Real wage per person day across gender in Maharashtra for Farm and Non-farm work (2001-2012)
Source: Nagaraj et al. (2014).

Maharashtra compared to almost negative growth rate before NREGA. This indicates the possible effect of MGNREGA on rising wages of male farm labor, thereby creating shortage of male labor for farm work. But MGNREGA cannot be the sole responsible of this observed wage increase. Beside farm wage, non-farm wage of male labor has also increased by 7.9 percent in Maharashtra and by 4.6 percent in Andhra Pradesh. So non-farm work is also getting attractive for the farm workers gradually. Thus, the slow growth of farm real wage was changed after MGNREGA. Basically there is a problem of endogeniety in isolating the impact of NREGA on farm and rural wages. Impact of MGNREGA on farm and rural wage often coincides with the spillover effects from economic growth, urbanization, non-farm rural growth, rural non-farm employment, increased literacy, introduction of minimum wage act on agricultural income and agricultural wage. Growth rate of wages of female workers in both farm and non-farm sector in two states are showing a declining trend. Thus, the effect of NREGA on female wage seems to be negligible and also proving that scarcity of labor is more prominent for male labor compared to his counterpart.

MGNREGA has increased use of machinery in Telangana villages: Labor forms a crucial input in the production of crops and livestock products, occupying a significant proportion (40%) of total cost of production. One of the serious criticisms of MGNREGA is that there has been increasing labor scarcity leading to higher wage rates and non-availability of hired labor to perform critical farm operations (Gulati et al. 2013). In this regard, the labor and machinery power used along with productivity of principal crops before and after MGNREGA in the study villages is examined in both *kharif* and *rabi* seasons. In Dokur and Aurepalle paddy and cotton are the main food and cash crops grown by the majority of the farmers. Paddy is a highly labor intensive crop compared to cotton hence

labor shortage may lead to decrease in area. Labor use per acre of paddy has drastically reduced after MGNREGA to the extent of 20 to 30% in Dokur and to 30 to 50% in Aurepalle in both the seasons reflecting the shortage of farm labor. The mechanical power used is almost double in case of paddy before and after MGNREGA. But in the case of cotton, there is no significant change in labor and machinery used before and after MGNREGA. Interestingly, it was observed that despite the reduction in labor absorption, the productivity of paddy has increased after MGNREGA. This could be due to intensive use of other inputs to substitute the shortage of labor. Also, in order to absorb the wage hike, farmers try to augment productivity. A majority of the crops are showing an increasing trend in productivity except pigeonpea in Kalman and sorghum in Kanzara. The farm mechanization in Andhra Pradesh is more prominent in the *rabi* season which is the peak season in farm work as well as NREGA works.

In Maharashtra villages the situation is different from that of Telangana villages. The major crops cultivated include pigeonpea, *rabi* sorghum, wheat, soybean and maize. There has been a drop in the labor use after MGNREGA for a majority of the crops. On the contrary, barring maize and wheat farm mechanization is not widely adopted for most of the crops. For instance, pigeonpea, a long duration crop, is highly labor intensive but use of mechanization is not reflected for this crop despite steep drop in labor use. As a result, the productivity has been hampered. For other crops in the village there is no sign of scarcity of labor. In Kanzara, farmers are adopting relatively higher usage of machinery in *rabi* season compared to *kharif* season. In Kanzara, the major crops are soybean in *kharif* and wheat in *rabi* and in both the scenario scarcity of labor is prominent. In Shirapur village, farm mechanization is widely adopted as this village is comparatively better-off than the others.

Social Safety Net Program MGNREGA has significantly contributed in reducing vulnerability caused by excessive farm borrowings and improving welfare of the participant households. During 2009-2011, there was significant decrease on the farm debt ratio to Asset of MGNREGA participant households compared to their counterpart non-participant households. It may be noted here that MGNREGA was implemented in all study villages except four villages in Maharashtra. During the same period, per capita expenditure on education of children of the MGNREGA participant, who are usually low-income households, has increased by over ₹800 per child compared to the non-participant households. Likewise, per capita consumption of food (cereals) of the households participating at the MGNREGA program has significantly increased than their counterparts (Bhattarai et al. 2014).

What has Happened to the Rural Labor Class over Time?

Though real wages of rural labor do show a rising trend, the increase is over a much lower base. The rise in real wages has been on a very low base and has no relation with the rise in productivity in rural areas (Binswanger-Mkhize 2013). Estimates about the changes in the consumption expenditure of different types of rural households between 1993-94 to 2009-10, revealed that when the overall real per capita income more than doubled from ₹12,126 to ₹27,008 the monthly per capita consumption expenditure (MPCE) of agricultural workers increased only by about 26%, and in the case of non-agricultural labor the increase was about 21%. The aggregate trends in wages and employment do not completely capture the processes of discrimination and segmentation that prevail in rural labor markets, and the lack of opportunities for more productive employment and earnings. Certain social groups like Scheduled Tribes (STs) and Scheduled Castes (SCs) among whom the rural work participation is high and incidence of unemployment is relatively low, still suffer from higher levels of poverty and face less opportunities for decent work. The study added that though poverty levels across social groups have been declining over the years, they still remain very high among STs and SCs. It is also well known that most of the STs and SCs depend more on agriculture labor, and remain the poorest among all rural workers. Even in 2009-10, a large proportion of agricultural laborers (49.4%) and other rural labor (39.6%) remained below poverty line, constituting a large mass of working poor in rural areas. Public intervention programs such as MGNREGS did make an impact on reducing days of unemployment, improving bargaining power

and the earnings of rural labor (Kannan and Reddy 2013), but not adequate enough to enable them to experience smooth transition from limited and declining employment opportunities in agriculture to alternative more secure and productive employment.

Deb, Bantilan and Khan (2014) analyzed the wellbeing of labor households using household level panel data for the period 1975-2012 from six villages in Telangana and Maharashtra. The study considered a household as a labor household if it has participated as wage labor in agriculture and/or non-agricultural activities. The study classified labor households into two categories: functionally landless labor households (having no land or less than 0.2 ha) and land owning (0.2 ha and above) households. ***Condition of the labor households, in terms of per capita income, asset ownership, access to education, has improved over time. Condition of the land owning labor households improved more than the functionally landless labor households. Improvement in wellbeing of other households, compared to the labor households was larger and much faster, which is quite natural. For all types of households, increase in per capita income and asset accumulation was faster during 2005-2012 than in the 1970s (Figures 6-8).***

Major Challenges in the Rural Labor Market

- *Tightening of agricultural labor supply*: Rural labor market has been tightened over time with the increase in employment opportunities in both farm and non-farm sectors. Employment under MGNREGS during 2009-10 reached 13% of the total scope for employment under this program, which corresponds to about 3% of the total labor supply of rural labor households. The expansion of MGNREGS is bound to cause a reduction in the availability of rural labor for other activities (Chand 2014).
- *Attracting and retention of talented youth in agriculture*: Employment generation in the agriculture sector for the youth and retaining them in agriculture is a major challenge in India. Over 50% of the Indian population is below 25 years of age. In order to fully utilize this demographic dividend, it is important that the population in the working age group is productively employed.
- *Sustainable employment for rural labor force*: With the expansion of non-farm activities, rural employment structure changed over time but the

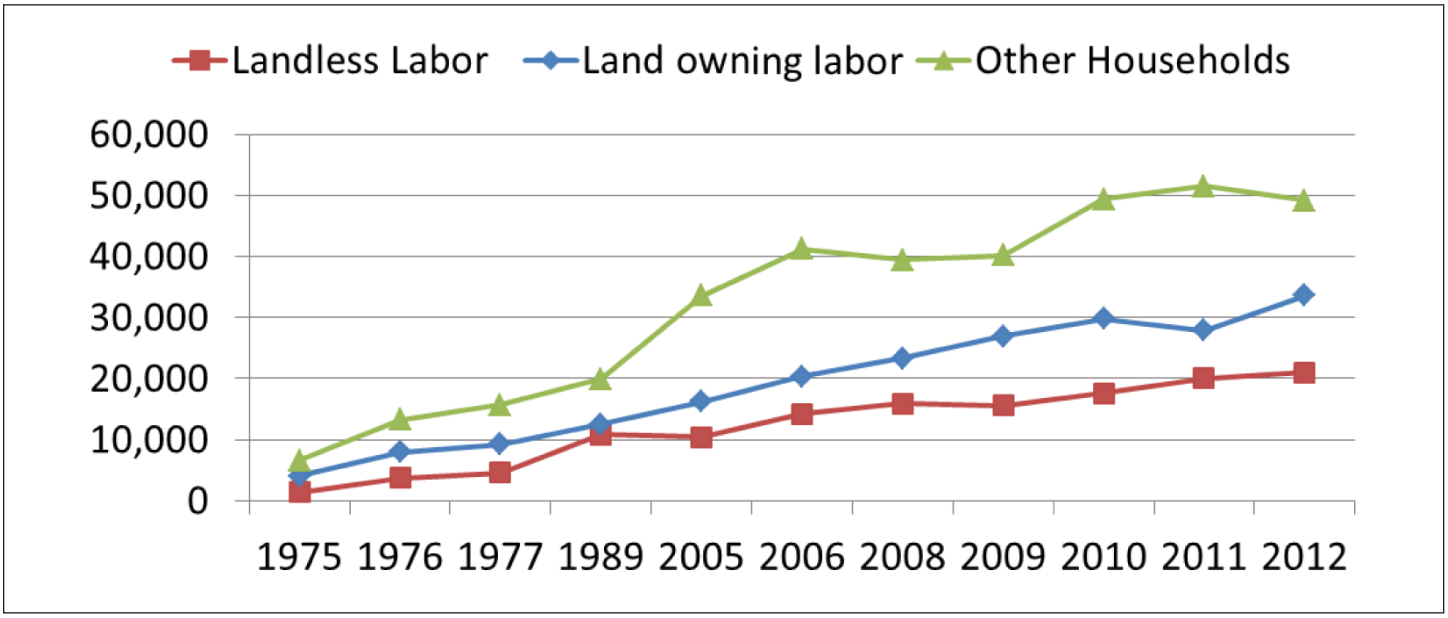


Figure 6. Trends in per capita real income (2009-10 equivalent Rs) of labor households in Maharashtra and Telangana villages: 1975-2012.
Source: Deb, Bantilan and Khan (2014).

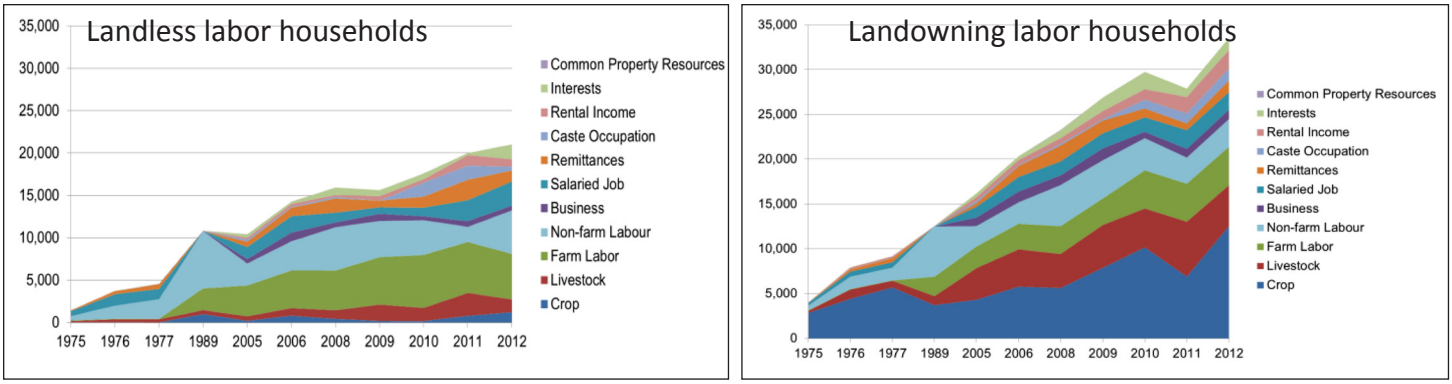


Figure 7. Comparison of per capita real income sources (2009-10 equivalent ₹) of landless and land owning labor households in Maharashtra and Telangana villages: 1975-2012.
Source: Deb, Bantilan and Khan (2014).

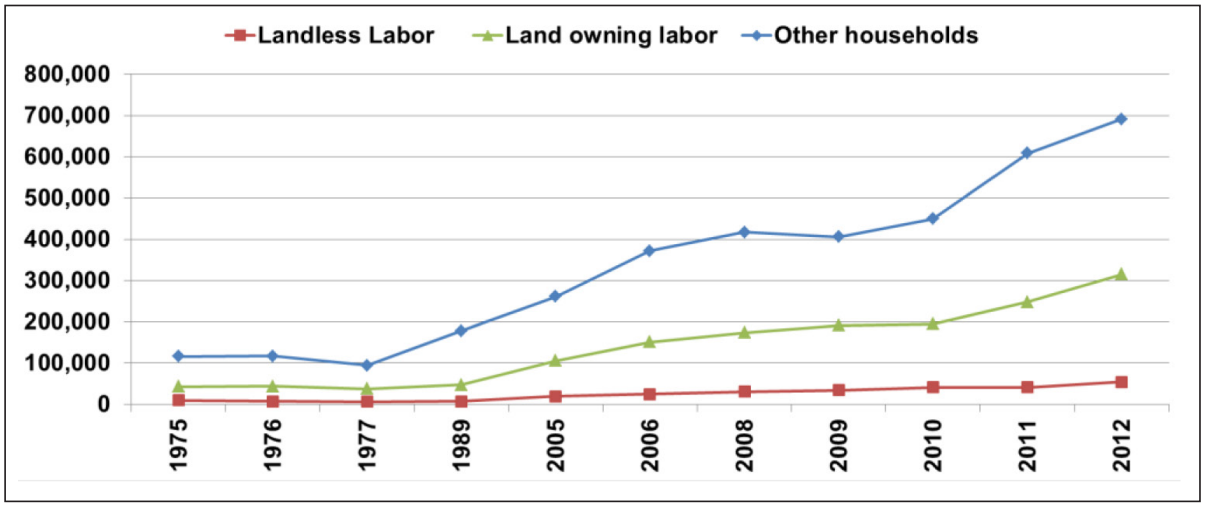


Figure 8. Trends in per capita Asset ownership (2009-10 equivalent ₹) by labor households in Maharashtra and Telangana villages: 1975-2012.
Source: Deb, Bantilan and Khan (2014).

pace of structural change in rural employment did not keep pace with the changes in production structure. Agriculture still provides employment for about two-thirds (65 percent) of the rural labor force. A large majority of non-farm laborers are employed in the construction sector. Sustainability of non-farm employment like construction in the long run is low.

- *Increasing labor productivity:* Labor productivity in rural India is low because of predominance of unskilled labor. This labor force can be trained in operation and maintenance of agricultural machines, knowledge intensive modern crop husbandry practices such as production of hybrid seeds, rearing of poultry and dairy animals. Enhancement of their skills will increase their productivity, employability and income. Enhancement of skills in order to improve the employability of the workers is a major challenge.

Implications for Development Strategies and Policies

- *Development of labor saving technologies and machine harvestable crops for dryland areas*: The tightening of rural labor market must be addressed through development and promotion of labor saving technologies, crop husbandry practices and improved cultivars which can be harvested through machines. For example, ICRISAT along with national partners should speed up activities related to development and release of machine harvestable chickpeas.

- *Promotion of farm mechanization in an inclusive manner*: Scarcity in agricultural labor particularly during the peak season can be addressed through promotion of inclusive mechanization in the rural areas. Mechanization policy should be beneficial towards smallholder farmers, youth and women, and to the rural labor community. Small farm size and fragmented agricultural land will require small machines, which can be used for multiple crops and for multiple operations. Full capacity of the machines can be utilized through supporting custom hiring system of machines. The rural labor class can be encouraged to be the owner and operator of such machines through training and credit support. Development of female friendly machineries and tools will ensure adequate employment opportunities for female laborers.
- *Creation of employment opportunities on a large scale in rural non-farm sectors to attract women*: There has been a big increase in pursuit of education by rural females. Improved literacy and low preference for farm work requires the creation of employment opportunities on a large scale in rural non-farm sectors to attract women to the workforce (Chand 2014).
- *Integration of farm non-farm activities in rural areas*: Farm and non-farm growth in rural areas can be enhanced through development of better infrastructure, transport, storage, credit and market. With the increase in urbanization in India, there is a growing market for agricultural products and commodities that can be produced at lower costs in rural areas. Systematic promotion of manufacturing activity in rural areas by providing incentives for the formation of producer organization to undertake value-addition activities is essential. This will also contribute towards sustainable employment of rural labor force in non-farm activities.
- *Enhance labor productivity through training*: Capacity building programs for skill augmentation in rural India especially female in order to enhance their skills, as there is shortage of male labor for agriculture. Training farmers in productivity augmenting and cost reducing knowledge intensive technologies.
- *ICT tools can help seasonal migration for the benefit of laborers and employers*: Absorption capacity of the agriculture sector for additional labor force has declined. Seasonal migration plays an important role in the livelihoods of rural labor force particularly in the semi-arid tropics. Therefore, shifting of rural people from farming to non-farm occupations and from rural areas to larger settlements and towns should not be a matter of concern because such shifts are surest pathways out of rural poverty. Very often seasonal migrants land in places where demand for their services is low. Adoption of ICT driven tools to link job seekers and employers through mobile call would be beneficial. Job seekers with their skill will register with their mobile while the company will provide the information to the prospective employers in the unorganized sector. Similar practices have already emerged in the urban sector for some services such as private tuition, study courses, restaurants, etc.
- *Modification of MGNREGA*: Employment generation schemes such as MGNREGS has benefitted the participating households and helped them to improve their livelihood security. Ensuring some basic principles of MGNREGA such as employment creation in slack season will be helpful to mitigate labor scarcity in agriculture and create more employment opportunities for the labor community to enhance their livelihood.

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