

Dynamics of Indian Rural Labour Supply: Causes and Consequences of Farm Labour Shortage on Agricultural Development

* *Roopa Patavardhan*

** *D. S. Leelavathi*

Abstract

Indian agriculture is often cited as a classic example for disguised unemployment. Labour abundance, lower level of wages, and need for creation of alternate employment opportunities for a huge section of labour force have always been the central issues of debates throughout the planning period. In the current period, the primary sector has undergone a tremendous change and there are instances of farm labour supply shortages. This contemporary phenomenon is mainly attributed to rural-urban migration and public work inceptions. Especially the MGNREGA has been able to draw a huge labour force, and in the era of transportation and communication revolution, migration is very easy and is a profitable phenomenon as discussed in this paper. This has resulted in driving the rural farm labour wages to newer heights and has also caused a dearth of farm labour. The study concludes that MGNREGA must be implemented in partnership with local farmers in such a way that the local farmers will gain labour supply through MGNREGA, and the State will also share the fiscal burden with the local farmers in season of crops and only in the off season can the State venture into development of local infrastructure, which will consequently aid in sustainable agricultural development.

Keywords: MGNREGA, farm labour, rural employment, labour shortage

JEL Classification: J08, J20, J21, J23

Paper Submission Date : July 7, 2013 ; Paper sent back for Revision : August 5, 2013 ; Paper Acceptance Date : August 24, 2013
--

Indian agriculture has always been marked by abundant supply of labour, but in the era of globalization, the agricultural sector has been witnessing a severe shortage of labour in rural areas; a phenomenon that was unexpected in the Indian milieu until recently. It was generally accepted that the primary sector in India has absorbed a huge amount of labour when it was not actually required. Underutilization of labour was a feature mainly due to lower levels of agricultural productivity. This labour surplus was because of lack of opportunities outside agriculture in the rural areas, and households were forced to supply labour in order to maintain a subsistence level of income to fulfil their needs. However, in the present days, opportunities outside agriculture have grown by leaps and bounds in many rural areas in India. This has brought a huge turmoil in the agricultural activities, where land owners are facing labour shortages.

Changing Employment Situation in Rural India

The poor in India are majorly concentrated in rural areas engaged in agriculture and non- agricultural occupations. Rural employment has always been synonymous with occupation in agriculture and allied activities. They are mainly labour households, basically comprising of wage labourers as well as self-employed petty cultivators who are half-peasants and half-labourers. They constitute the most backward, unorganized, and deprived section of the workforce. The changes in the pattern in employment situation can be identified as decrease or stagnancy in the number of permanent labourers and the casual labour becoming the main source of livelihood for the agricultural labour households. Furthermore, as discussed by Srivastava (2012), the labour in agriculture are identified with a weak bargaining power and gradually, the category of pure agricultural labour disappeared fast as income from agricultural labourers is only a fraction of the total income of agricultural labour households. The recent macro employment

**Research Scholar*, Department of Studies in Economics and Cooperation, University of Mysore, Manasagangotri, Mysore - 570 006, Karnataka. E-mail: roopi888@gmail.com

** *Professor and Chairperson*, Department of Studies in Economics and Cooperation, University of Mysore, Manasagangotri, Mysore - 570 006, Karnataka. E-mail: prof_leelavathi@yahoo.co.in

Table 1 : Broad Employment Status for Rural India: 1993-94 to 2009-10 (in percent)

Years	Males			Females			Persons		
	Self-employed	Regular wage/salaried jobs	Casual labour	Self-employed	Regular wage/salaried jobs	Casual labour	Self-employed	Regular wage/salaried jobs	Casual labour
1993-94	57.7	8.5	33.8	58.6	2.7	38.7	58.0	6.4	35.6
1999-00	55.0	8.8	36.2	57.3	3.1	39.6	55.8	6.8	37.4
2004-05	58.1	9.0	32.9	63.7	3.7	32.6	60.2	7.1	32.8
2007-08	55.4	9.1	35.5	58.3	4.1	37.6	56.3	7.5	36.2
2009-10	53.5	8.5	38.0	55.7	4.4	39.9	54.2	7.3	38.6
Growth rate between									
2004-05 to 2007-08	-4.65 (-1.55)	1.11 (0.37)	7.90 (2.63)	-8.48 (-2.83)	10.81 (3.60)	15.34 (5.11)	-6.48 (-2.16)	5.63 (1.88)	10.37 (3.46)
2007-08 to 2009-10	-3.43 (-1.71)	-6.59 (-3.3)	7.04 (3.52)	-4.46 (-2.23)	7.32 (3.66)	6.12 (3.06)	-3.73 (-1.87)	-2.67 (-1.33)	6.63 (3.31)
Source : Alha and Yonzon (2011)									
Note: figures within the parentheses show the annual growth rate									

trends in India have shown that there is an increasing trend of informalising and casualisation of labour in India. In order to achieve sustained long-term growth, there must be greater acceptability to improve the labour standards. Casualisation and informalisation have implications for job security and good conditions of work, which has often been neglected in the Indian scenario.

The Table 1 depicts the NSS data on broad employment status during different time periods at the all India level. This table shows that the share of self-employed males and females both have seen a decline by around four points for males and by eight points for females, that is from 58.1 to 53.5 for males and from 63.7 to 55.7 for females between 2004-05 and 2009-10. However, the share of casual labour has increased by five percentage points, from 33% to 38% in the same period for males, whereas for females, it has increased by six points from 32.6 to 39.9. It has been noted that the declining share of self-employment in rural areas of India among both males and females may be mainly due to the effect of structural transformation in the Indian economy. However, this decline in terms of minute percentages is a cause of concern because a small dip amounts to a huge decrease in absolute numbers. Further, it has to be identified that the share of female labour force engaging in salaried or regular jobs has almost doubled that is from 2.7 points to 4.4. In addition, with these changes, the proportion of overall population engaged in agriculture declined from nearly 56.3 to 53.3 points during 2004-05 and 2010-11 (Papola & Sahu, 2012).

The combined effect of rural - urban migration, raising education levels, economic growth, aversion for physical labour, and casual employment opportunities outside agriculture, especially MGNREGA, are mainly responsible for such a changing scenario in rural India.

Causes for Shortage of Labour Supply

Migration from rural to urban areas is identified as one of the major factors responsible for a decline in rural farm labour supply. The theories of migration identify the push and pull factors determining the migration. Numerous disaggregate level studies in India, for example - Jetley (1987), Paris, Singh, Luis, and Hossain (2005), Korra (2011), Rodgers, G. and Rodgers, J. (2011) have identified factors - like search for employment opportunities is the major reason behind out-migration from villages. Dearth of employment opportunities in the villages, economic deprivation in the form of landlessness or skewed distribution of land, inadequate farmland and low fertility, livestock and other basic household assets necessitate the need for rural people to migrate to either cities or other rural locations to earn their livelihood. Farm labourers could be hired easily at lower costs few years ago. But now, because of better opportunities, youngsters have started moving out (migration). Even women choose industry work than agriculture. Those who are left are the aged labourers who demand more wages as recorded by these studies. Rew (1913) identified certain causes for migration. The first and major cause for labour migration is the altered circumstance of

farming, which leads to the requirement of fewer labourers. The second reason for decreased demand for labour is due to the changing land use pattern, that is, from farm land to grazing lands. The last reason for migration of labourers as per these studies was attributed to the attitudinal change - "want of a job," "lack of incentive in agriculture," and "hopelessness in agriculture"- that there are ample of opportunities to obtain better jobs in urban areas. This can be justified because of the experiences which state that the last days of a farm labourer are days of pauperism. In addition, the labourers migrate to escape the hardships caused by the discrimination based on caste, which is a predominant and historical feature of rural India, and the process of migration to urban areas aids them to overcome all the barriers in the name of caste (Sharma, 2005).

Apart from the push factors discussed in the above paragraphs, the close social ties of labourers with their migrant relatives and friends, plus the available employment opportunities in urban industrial enterprises constitute to be the major pull factors for labour migration as mentioned by Paris et al., (2005). Wage differentials in the informal sector, and activities like manufacturing, construction, jobs in security agencies as guards, rickshaw pullers, coolies, construction workers in relation to rural agricultural sector forms another major pull factor resulting in rural urban migration.

Coming to the trends in migration, the NSSO 64th round revealed that there have not been much of the changes in the number of rural households at the national level because the migrant category among these households in the urban areas increased to nearly 3% in 2007-08 from nearly 2% in 1993-94. The share of rural to urban migration among males increased (by nearly 5% points) to 39% in 2007- 08 from 34% in 1999-2000. Nearly 60% of the urban male migrants and 59% of the urban female migrants had migrated from the rural areas in 2007-08.

For rural females, the share of employment-related reasons for migration dropped from 8% in NSS 49th round to about 1% in both 55th and 64th rounds. This can be attributed to the increasing activities of self help groups and micro finance activities, and also may be due to exposure to jobs for the rural females in MGNREGS and other public works in the rural areas. Some of the distinct traits have come into picture in the case of male migrants of rural areas when the reasons for migration obtained during NSS 49th round, 55th round, and 64th round were taken into account. It revealed the reduced importance of employment-related reasons for rural male migration. The share of employment-related reasons in total rural male migration reduced from 48% estimated in NSS 49th round (1998-99) to 30% in NSS 55th round (2004-05), which further dropped to 29% in NSS 64th round (2007-08). The decline in rural to urban migration between the period from 2004-05 and 2007-08 may be due to the introduction of safety nets like MGNREGA, a constant run of good monsoons, and better access to credit.

MGNREGA : The Cause for Labour Shortage

MGNREGA has been targeted by many recent studies for the reason that MGNREGA has been the root cause for labour shortages in several parts of rural India. The implementation of MGNREGA has resulted in an increase of up to 20% in the cost of farm production in Karnataka. It has also created a shortage of labour in the agriculture sector in the state. MNREGA has pushed up the rural wage rate, and this has tremendously increased the bargaining power of the labourers, and thus the cost of production as evidenced by Kumar (2011). His study also highlighted the fact that along with MGNREGA, the effects of globalization have also resulted in the shortage of farm labour. The globalization effect can be identified as the choice that people have before them to choose what they want to do because of an increasing awareness and exposure to better standards of living ; the rural people have taken a step to educate their children so as to avoid their children from being caught up in farm labour, which is considered as a low profile job in relation to the "office" oriented jobs which do not involve much of physical labour. Furthermore, as noted by Kannan (2011), in Tamil Nadu, under MGNREGA, a family ensures that all members get enrolled one after the other, irrespective of the age or the capacity of the person to work throughout the year. According to Kannan, no mechanism was found to check the physical presence of workers or the work done at the work site. As this behaviour will yield quick money with least efforts, most of the workers preferred to enroll for the program. Similarly, according to Harish, Nagaraj, Chandrakanth, Murthy, Chengappa, and Basavaraj (2011), the implementation of MGNREGA has been found to have caused labour scarcity to the tune of 53% and 30% for agricultural operations like weeding and sowing respectively, and there has been a decline in the area of labour intensive crops like tomato and ragi to the extent of 30% due to MGNREGA implementation in the central dry zone of Karnataka.

Moving further, according to Mukherjee and Sinha (2010), MGNREGA alone can be a substantial part of the target

income of the poor. They stated that in such a situation (a behavioural change which might take place), the poor people may lead to exhibit a backward bending supply curve of labour, and this might lead to an aggregate reduction of agricultural output. This was one part of the story, but if the other part is looked into, then it can be seen that certain evidences like the one given by Shome, Shetty, Joseph, and Dash (2012) show that labour shortages in agriculture seem to have been aggravated due to MGNREGA work, and MNREGA is not the primary cause for labour shortages. Furthermore, as reported by Alha and Yonzon (2011), MGNREGA is not the cause of change in the structure of rural employment, but rather, it is a consequence of the low employment growth rate in the agricultural sector.

Demonstration effect and communication revolution have also contributed to changing employment preferences of labourers besides MGNREGA and migration. Some of the other reasons for labour shortage problems are non-farm employment and other small and medium industrial units. Raising levels of education in the rural areas with the Sarva Shiksha Abhiyan and other such programmes have enhanced the opportunities for off-farm employment because studies have stated that education levels increase the opportunities of non agricultural employment. Furthermore, there is clear evidence as provided by Lanjouw and Shariff (2004) that education improves prospects of finding non-farm employment and that with higher levels of education, the chances of employment in well paid, regular, non farm occupations increases. All these have contributed to the labour shortage by sourcing farm labourers from villages. Further proposal of providing rice at the rate of ₹ 1 per kilo gram and the PDS scheme are also highlighted as the reasons for labour supply shortages. As reported by Aiyappa (2013):

A day's toil in the field fetches mere ₹ 150-200, while the construction industry pays ₹ 400- 500 for just eight hours of work. If rice is made available at ₹1/kg, there can't be any reason why the labour class will opt for farming anymore.

Consequences of Labour Shortage on Farms

The participation of human labour in crop cultivation is seen right from the operations like preparatory cultivation to sowing, fertilizer application, irrigation, weeding, inter cultivation, plant protection measures, harvesting, and so forth. Several studies, for instance, IISR (2012), Sharma (2008) have reported that cost on human labour constitutes about 40-50% of the total cost of cultivation for various crop enterprises, and more than 50% for labour-intensive crops. Thus, labour constitutes to be the major factor of production in Indian agriculture, especially in a scenario where land holdings are small and fragmented, and mechanization is a distant dream for many small and marginal farmers. However, because of recent developments in the rural society, there are instances of farm labour shortages as discussed in the previous part of the paper. This background lays a strong precursor to the agreement that labour supply has an impact on agricultural development in India. So, in this section, the issues of consequences of farm labour shortages have been dealt with.

Drastic increase in real wages in the agricultural sector, rise in cost of cultivation, changes in cropping patterns, changes in employment preferences, and ignoring agriculture as an occupation, threat to food security, and economic development in the long run can be identified as the major consequences of shortage of labour. Many of the empirical studies have evidenced that rise in real wages after implementation of MGNREGA has caused labour shortages on farms, and the wage rate fixed by the MGNREGA is considered as a standard minimum wage below which the market wages cannot go because any such reduction would again lead to transfer of labour from the agricultural sector to the MGNREGA. Thus, this shows a cob web phenomenon involving labour shortage in the central axis point.

The outcome of the dearth of labour supply on farms is that farmers are finding it difficult to carry out agricultural operations. The shortage of harvest labour in general and a steep increase in labour costs have reduced the profit margins of the farmers (Balaji, 2011). It has also been seen that there was a visible decline in acreage due to labour scarcity under crops like finger millet and tomato, which require a higher amount of labour for harvesting operations (Sharma & Prakash, 2011). According to the researchers, the problem of labour scarcity for some of the agricultural operations is mainly linked to market wage rates. As a consequence, farmers have brought down their acreage under different crops, leaving the land fallow or have started converting land for commercial income generating assets (Home stays, real estate sites, etc.). This results in switching over from labour-intensive crop to other crops and thus, this adversely affects the long-term sustainability of the crops. As noted in the above paragraphs, it can be inferred that the profit margin in cultivation is reducing with rising labour scarcity and, in addition, wage rates have increased to overcome the peak period labour requirements. Another major consequence is the stagnant or declining yield level on farms.

Labour scarcity in agriculture, especially in rice farming, is reported to be an important reason behind declining paddy area in Kerala (Devi, 2012). So now, there is a common practice to employ machine labour for almost all major operations in paddy cultivation. The human labour-use is restricted in certain skilled operations like fertilizer application and pest control. As an adaptation strategy, chemicals are widely used and the expenditure incurred on plant protection chemicals is also on the rise. In rice farming, the adoption of chemical technology to address the supply constraints in labour market is largely in weed management. The labour availability for weed control (mainly women labour) is shrinking on account of the scarcity and skill factors. Weeding is a skilled work, wherein identification of weed is very important. Chemical weed control is widely adopted on account of the easiness in management and labour shortage. Labour shortage and the resultant high wages have forced the farmers to go in for machines and agri chemicals in paddy production. Land preparation, weeding, and harvest operations are the major activities wherein there has been a substitution of human and animal labour. Chemical weed control practices have substituted a sizeable women labour employment. This has perhaps resulted in one of the highest wage structures in agriculture among Indian states (Vyas, 1976), which was often quoted as one of the reasons for shift from field crops (labour-intensive) to non-food plantation crops (less labour-intensive). These developments have serious implications on food production in agriculture and will result in acute shortage, thus leading to major challenge for food security.

Coming to changing preferences of employment, it was seen that women prefer self-employment like embroidery as it gives them a sense of freedom and ensures income, more than what is earned by being a farm labour (Khan, 2011). Devi (2012) also discussed that labour scarcity in agriculture was accelerated by the shrinking labour supply owing to the preferences of younger generation for a stable employment or other casual works in the non-farm sector. The physical drudgery associated with farming and aspects like lower social status also prompted for this changed social preference. The widening supply-demand gap in the labour market has impacted the observed rise in wage rates. As a consequence, individuals will gradually lose hope and interest in agriculture as an occupation, and these changing employment preferences among the rural masses will ignite other hindrances and pressures for secondary and tertiary sectors in the urban areas. According to Angba (2003), agriculture suffers from an acute shortage of labour, making it difficult to expand the area under cultivation; while in the towns and cities, the supply of social and infrastructure facilities like housing, water, health services have come under severe pressure due to rural - urban migration.

Probable Prospects Before the Government

A low rate of infrastructural investment in the public sector, which is necessary for keeping budgetary deficits low, has been resulting in deceleration of agricultural growth. This, coupled with an acute shortage of labour, will lead to an adverse impact on agricultural development. It has been noted that the decline in labour supply to farmers has resulted in changing cropping pattern in favour of commercial crops. This will have a serious impact on food security in the long run. A greater investment in agriculture and rural economy for improving farm production and creating off-farm services, agribusiness, and so forth will not only help in achieving food security and regulating out-migration of distressed workers, it will also ease the pressure on urban centres. Furthermore, MGNREGA must be implemented in partnership with local farmers in such a way that the local farmers will gain the labour supply through MGNREGA, and the State will also share the fiscal burden with the local farmers in the season of crops, and only in the off season can the State venture into development of local infrastructure.

MGNREGA is not just increasing wages and setting a standard minimum wage, it also has splintering effects like least supervision, less physical drudgery, which will result in behavioural changes in labourers to shirk from labour, which is natural and obvious. That is why MGNREGA must be implemented in such a way that local farmers are also benefited, and the State will only incur a transaction cost of supervision that farmers pay competitive wages to the beneficiaries of the Act, and thus reduce the huge burden on the public exchequer. This argument can be substantiated with the criticism on the nature of work done under MGNREGA - that till how long can a village develop its infrastructure once such work is completed, be it construction of roads or tanks and so forth. This will, in turn, provide an incentive for small and marginal farmers to sustain their interests in agriculture as an occupation in the era of glaring opportunities in secondary and tertiary sectors.

Summary and Conclusion

The paper commenced with the introduction of the changing employment scenario in rural India with a snapshot of NSS data for various rounds. Subsequently, the cause for farm labour shortage has been discussed with a special focus on MGNREGA and migration. In the following section, the consequences of this trend among rural labour households were considered, highlighting the impact of shortage of labour on agricultural development. Finally, probable prospects before the state were identified as a solution. A complex picture of unfolding trends in rural employment has been presented in the preceding discussion. In the process, the arguments presented in this paper will aid to draw implications for the crucial role of the Government in creating the environment for particular patterns to emerge, and thereby mould the specific changes in employment behaviour among rural labourers.

Research Implications

Moving on to the implications of this research work, firstly, it can be noted that at the theoretical level, labour supply is always viewed to be basically determined by wage differentials, but this traditional notion needs to be revised and new theories highlighting the other major categorical factors needs to be established. Secondly, at the methodological level, most of the studies on labour supply are based on secondary data, especially NSSO data, and are quantitative in nature, but micro level case studies attempting to comprehend the deeper nuances of the labour supply issues need to be undertaken.

References

- Alha, A., & Yonzon, B. (2011). Recent developments in farm labour availability in India and reasons behind its short supply. *Agricultural Economics Research Review*, 24 (2), 381-390.
- Aiyappa (2013, June 16). New rice scheme to fuel labour shortage in Karnataka. *The Times of India*. Retrieved from <http://timesofindia.indiatimes.com/>
- Angba, A.O. (2003). Effect of rural-urban migration of youths on agricultural labour supply in Umuahia north local government area of Abia State, Nigeria. *Journal of Agriculture and Social Research*, 3 (2), 77-83.
- Balaji, R. (2011, April 4). Sugar output in TN set to slip for third year in a row. *The Hindu Business Line*. Retrieved from <http://www.thehindubusinessline.com/>
- Devi, I. P. (2012). Dynamics of Farm Labour Use - An Empirical Analysis. *Agricultural Economics Research Review*, 25 (2), 317-326.
- Harish, B.G., Nagaraj, N., Chandrakanth, M.G., Murthy P.S.S., Chengappa, P.G., & Basavaraj, G. (2011). Impacts and implications of MGNREGA on labour supply and income generation for agriculture in central dry zone of Karnataka. *Agricultural Economics Research Review*, 24 (3), 485-494.
- IISR (2012). *IISR at a Glance: 2011 Annual Report*. Lucknow: Indian Institute of Sugarcane Research.
- Jetley, S. (1987). Impact of male migration on rural females. *Economic and Political Weekly*, 22 (44), 47-54.
- Kannan, A. (2011, November 7). Shortage of farm labour a cause of concern. *The Hindu*. Retrieved from <http://www.thehindu.com/>
- Khan, M. S. (2011). Rural labour - non preference for agricultural employment. *Indian Development Review*, 9 (2), 205-209.
- Korra, V. (2011). Labour migration in Mahabubnagar: Nature and characteristics. *Economic and Political Weekly*, 46 (2), 67-70.
- Kumar, P. (2011). *Impact of NREGA on wage rate, food security and rural-urban migration in Karnataka*. Presented at Project Completion Seminar at ISEC Bangalore, August 1, 2011.
- Lanjouw, P., & Shariff, A. (2004). Rural non-farm employment in India: Access, incomes and poverty impact. *Economic and Political Weekly*, 39 (40), 4429- 4446.
- Mukherjee, D., & Sinha, U.B. (2010) *Understanding NREGA: A simple theory and some facts*. Retrieved from <http://www.eSocialSciences.com/workingpapers-id-3099>
- Paris, T., Singh, A., Luis, J., & Hossain, M. (2005). Labour outmigration, livelihood of rice farming households and women left behind: A case study in Eastern and Uttar Pradesh. *Economic and Political Weekly*, 40 (25), 2522-2529.

- Papola, T.S., & Sahu, P. P. (2012). *Growth and structure of employment in India: Long-term and post-reform performance and the emerging challenge - A report* (p. 36). New Delhi: Institute for Studies in Industrial Development, New Delhi.
- Rew, R. H. (1913). *An Agricultural Faggot*. Westminster: King and Son Orchard house Publishers.
- Rodgers, G., & Rodgers, J. (2011). Inclusive development- Migration, governance and social change in rural Bihar. *Economic and Political Weekly*, 46 (23), 43-50.
- Sharma, A. N. (2005). Agrarian relations and socioeconomic change in Bihar. *Economic and Political Weekly*, 40 (10), 960-72.
- Sharma, A.K. (2008). Analysis of long-term trend in yield and economics of sugarcane cultivation in important cane growing states of India. In *IISR Annual Report 2007- 2008* (pp. 57-58), Lucknow : Indian Institute of Sugarcane Research.
- Sharma, A. K., & Prakash, B. (2011). Causes and consequences of supply-demand gap for labour in sugarcane in India. *Agricultural Economics Research Review*, 24 (Conference Number), 401-407.
- Shome, S., Shetty, R. Joseph, T. J., & Dash, M. (2012). Impact of workfare programmes on quality of life: A case study of national rural employment guarantee act in India. *Stryvling - Stirling International Journal of Postgraduate Research*, 1 (1), 17-45.
- Srivastava, (2012). Changing employment conditions of the Indian workforce and implications for decent work. *Global Labour Journal*, 3, (1), 63-90.
- Vyas, V.S. (1976). *The agricultural labour market: A synoptic view*. Working Paper No. 1976/114, Vikram Sarabhai Librari, IIM Ahmedabad.