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PW3

Dynamics of Rural Labour Markets: Evidence from Longitudinal Panel Data in India

A Amarender Reddy

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Abstract

Given the slow structural transformation of employment in rural areas in India, this paper tries to probe into the structural transformation in semi-arid tropics of India, by using high frequency longitudinal panel data from 1975 to 2010. The results show that, up to early 1980s, structural transformation was very slow and most of the workers dependent on agriculture for their livelihoods. Most of the workers are spent more days in self-employment in agriculture with very few days in paid work. Both men and women have more leisure time during the 1970s compared to early 2000s. However, from 2001 onwards, there has been an increase in non-farm employment opportunities in both self-employment and also paid work mostly for rural male, but most of the rural women remained in farm sector. Results also shows that even though education improves chances of getting higher remunerative employment, still rural labour markets are segmented based on social groups to

some extent. The high unemployment among educated youth indicates that the skills acquired by the educational system are not meeting the needs of the rural economy. However, many parents are investing heavily in children's education with the expectation of getting higher paid urban jobs. Over the period, gender and caste differences in wage rates decreased slightly, but are not eliminated wholly. Men work days are more than women work days per year, however If we take domestic work into consideration women work more days than men. Attached labourer are almost eliminated with the implementation of bonded labour abolition act and most of them shifted to different occupations including cultivation or casual agricultural labourer or took up petty businesses. There is significant increase in farm mechanisation in recent years due to scarcity of labour and higher wage rates. The results also show that the real wage rates started increasing much before the introduction of a major employment guarantee program (MGNREGA) and mostly driven by increased non-farm employment opportunities, rural-urban linkages, migration and increased agricultural productivity.

Introduction

Even though the share of non-farm sector in GDP is increasing at a faster rate, the labour movement from agricultural sector to non-agricultural sector is at a much slower rate and the labour force participation rates are still low for women. However, all that is changing in the recent decade. India's economy has accelerated sharply since the late 1980s, but agriculture has not. The rural population and labour force continue to rise, and rural-urban migration remains slow. Despite a rising labour productivity differential between non-agriculture and agriculture, limited rural-urban migration and slow agricultural growth, urban-rural consumption, income, and poverty differentials have not been rising. Urban-rural spillovers have become important drivers of the rapidly growing rural non-farm sector, which now generates the largest number of jobs in India. Rural non-farm self-employment is especially dynamic with farm households diversifying into the sector to increase income. The bottling up of labour in rural areas means that farm sizes will continue to decline, agriculture will continue its trend to feminisation, and part-time farming will become the dominant farm model. (Binswanger, 2013).There are visible signs of increased dynamism in rural labour markets with increased rural-urban linkages, rising real wage rates, shortage of labour as perceived by farmers in most of the villages, migration, wider adoption of farm mechanization, implementation of employment guarantee act (MGNREGA Act, 2005), and increased share of educated labour force and more importantly growing participation of women in farm sector. The dynamism in rural labour markets has increased due to the presence of diversified employment opportunities within and outside the villages. Educated and skilled manpower is trying to migrate to urban areas; mostly working in non-farm sector leaving behind less educated, aged, women and unskilled workers in the villages resulted in widening gap in agricultural and non-agricultural employment opportunities and wage rates between rural and urban areas.. Poverty persisted in some sections of the society who are excluded by the new growth engines. High inequality between rural and urban earnings, educated and uneducated wage rates, less resource-

endowed and more resource-endowed regions and among people etc. is still a major concern. Farm sector in dis-advantaged areas is trapped in low productivity, resulted in higher poverty among farmers and farm labourer. It is reflected in NSSO data that more people are in poverty than actually unemployed, indicating the low quality of employment and underemployment. This paper examined the panel data collected from six villages in Semi-Arid Tropics from 1975 to 2010, to explore the changes in the labour market dynamics, structure of work force, wage rates, choice of occupations and employment status such as farm and non-farm employment among vulnerable sections including youth, women and the most disadvantage sections of the society.

Objectives of the study

Rural areas are transforming rapidly from agricultural to a diversified economy in developing countries as they develop. Kuznets (1957) collected a large amount of evidence in support of this observation, and also documented the simultaneous decline of the labour force employed in agriculture over time and the large increase in the share of the labour force employed in the non-farm sector. Other surveys on sectoral development process conducted in recent times have confirmed the validity of the patterns described by Kuznets and importance of non-farm sector and rural-urban linkages in employment and prosperity of rural economy (Chenery and Syrquin, 1975; Mundlak et al., 1997; Long, 2011 and Bdul, 2012; Ravallion and Datt 1996; Lanjouw and Lanjouw 2001; Barrett, et al., 2001). The increased diversity of rural economy leading to the diverse pathways of development in each local context based on the local resource endowments and geographical location (Start, 2001; Long, 2011; Reardon, 1997; Himanshu, et al., 2013; Reddy and Kumar 2006; Reddy and Kumar 2011; Reddy 2010; Reddy 2011; Reddy and Bantilan 2013). However, it is indicated in the literature that the benefits are not equal among different sections of the society, with majority of them still dependent on low productive employment with lower wages. It is important to understand labour dynamics among men and women both in economic and non-economic activities for evolving appropriate policies. Keeping the unequal progress among different sections and sectors the paper tries to probe in to the following objectives (i) to assess the structural changes in employment status, occupational structure and wage rates among sample households since 1975, (ii) to know the changes in employment structure by socio-economic status and gender, (iii) to assess the changes in wage disparities among men and women in different occupations over the period and (iv) to examine the policy options for better labour markets.

Data and Methodology

There is significant difference in our definition of employment and unemployment situation followed in the study compared to the definitions of NSSO surveys.. Mainly the difference comes from the high frequency of data collected by our residence investigators. We have collected the data for each day in a year; hence we have record for all 365 days whether a person worked for wages or not, if he worked

how many hours and at what wage rate. This high frequency data provide details about the number of days spent by each person in all the 365 days of the year. The details include paid-work days (including different occupations, with wage rate), work on own-farm, own-domestic work (like utensils cleaning, washing clothes etc.,), work on own- livestock, other-own-works, days with seriously ill (sick-days) and unemployed-days (days seeking employment, but not worked). We have recorded the hours worked in each of these categories and converted in to standard days of 8 hours and reported as reported-days. For example, if women spent 3 hours daily on domestic-work for 200 days that will be recorded as 75 standard-days worked in domestic-work of each 8 hours. As a result, the total reported-days may vary depending on the number of hours reported by each person in the above category of work-status. Sometimes, domestic and paid-work days together may exceed 365 days for individuals who work for more than 8 hours for at least some days, so that the standard reported-days exceeds 365 days. Many times the standard reported-days may be less than 365 days, hence we added one more work status indicator that is days with no-work which is calculated by deducting the reported-days from 365 days which indicate the days with no-reported-work-status. These definitions do not coincide with the NSSO definitions of work force participation, labour force participation, as Labour Force Participation Rate (LFPR i.e. ratio of labor force to population), Workers Population Ratio (WPR), Proportion Unemployed (PU i.e. percentage of unemployed in population) and Unemployment Rate (UR i.e. the ratio of unemployed to labour force) in NSS surveys, persons are classified into various categories on the basis of activities pursued by them during certain specified reference periods. Three reference periods used in NSS surveys are (i) one year, (ii) one week and (iii) each day of the reference week. This data is collected once in a year, and collects daily activities for a reference week only. The usual status (yearly status) is not based on actual day's records but based on recall of major activity in the past year. In many respects, our dataset is more rich and superior in quality as compared to NSSO data which collects data only once in year.

Occupational structure

The VDSA survey tracks individual households since 1975; it gives an opportunity to track the major occupational shifts among the households and individuals over the four decades. For easy representation we have given occupational shift of men for five points in time that is 1975, 1984, 1989, 2005 and 2010 for both men and women for cultivators and casual agricultural labourer. The share of non-farm workers among rural male workers increased from 12% to 37 % (Table 1), where as among women it increased from 8% to 11% in the SAT villages. During 1975, the major occupations were cultivator, casual labourer in agriculture and attached labourer. There is minimal shift in major occupation of individuals from 1975 to 1984. The general trends from 1975 to 2010 are that, the cultivation as the major occupation slightly declined over the period. The decline in the share of attached labourer (more exploited section of labourer who work as bonded labourer) by 1984 is

significant, and in 2005 only 2% of men are in this occupation and by 2010 the share of attached labourer reduced to 1% among men. Even though abolition of bonded labour act introduced in the year 1976, its proper implementation at village level is hindered by feudal forces, landlords, and local administration. Hover, with the overall development by early 1980s and 1990s, implementation of the law is becoming effective and gradually attached labourer disappeared by early 2000s. The growing segment in the villages is small petty business, non-farm labourer and other non-farm sector. The opportunities in non-farm sector picked up during the early 2000s and continued throughout. Among non-agriculture, the salaried/regular employed and non-agricultural labourer increased steeply from 1975 to 2010 among men.

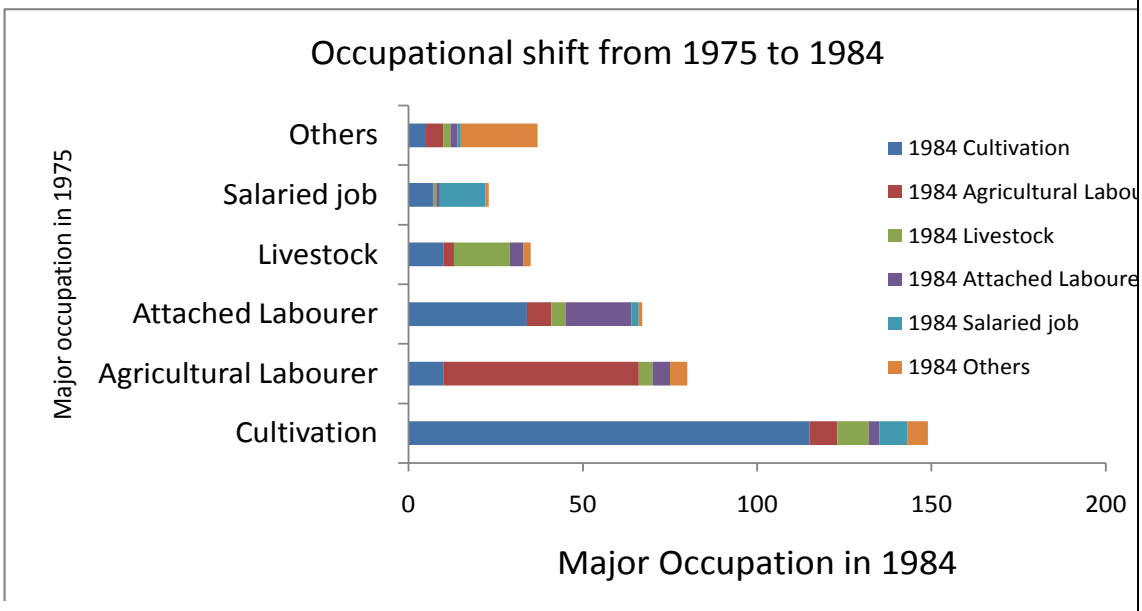
Table 1. Changes in employment structure between 1975 and 2010 (% of households)

	Agriculture					Non-agriculture					
Year/ gender	Total	Cultivator	Livestock	Casual Labourer	Attached labourer	Total	Labourer	Regular/ Salaried	Business	Others	Total
Male											
1975	88	41	6	21	19	12	2	4	1	6	100
1984	83	50	5	20	8	17	2	9	1	5	100
1989	79	48	4	19	7	21	2	11	4	4	100
2005	73	46	5	20	2	27	6	12	6	2	100
2010	63	48	4	10	1	37	13	10	5	8	100
Female											
1975	92	29	3	56	4	8	1	0	2	5	100
1984	91	32	4	54	0	9	1	1	4	4	100
1989	93	31	13	48	0	7	1	3	1	1	100
2005	90	40	4	46	0	10	2	5	2	2	100
2010	89	45	14	29	0	11	3	3	2	3	100

Table 2 presents occupational mobility matrix whose major occupation is cultivators and agricultural labourer (male members) in the year 1975 in the study villages. Even though occupational mobility from cultivation and agricultural labourer to other occupations is sluggish between 1975 and 1984, since 1984 there has been a considerable mobility in the major occupation among men. For example, the male members whose major occupation is farming in the year 1975, only 77% are in the cultivation by 1984, and by 2010 only 44% are still in cultivation. That means, about 56% left cultivation and mainly working as salaried, engaged in petty business, working as labour in agriculture or non-agriculture and some are into livestock rearing. Among agricultural labourer, only 18% are working as agricultural labourer by 2010, about 32% are engaged in crop cultivation, about 16% are engaged in livestock, about 14% are engaged in non-agricultural labourer, 9% shifted to salaried and another 7% shifted to business. Overall, occupational mobility is higher among agricultural labourer compared to cultivators, as the former can easily shift from one occupation to another without any attachments to land etc, which is not possible for the later.

Similarly, about 60% of the attached labourer in 1975 shifted to other occupations by 1984, and by 2010 all these workers shifted to other occupations mostly into cultivation (self-employed in agriculture) or agricultural labourer (Graph 1). Most of the male members whose major occupation is casual labourer in agriculture, cultivation, livestock rearing, business and caste occupations in the year 1975 did not shifted to other occupations even by the year 1984, except attached labourer. However, by the year 2010, more than two-thirds in each group of occupation shifted to different occupations based on the opportunities available in the villages and nearby towns. Most of the cultivators, agricultural labourer and members of traditional caste occupation shifted to salaried jobs, non-farm occupations and demand driven modern sectors like trade, petty business, PCOs, repair centres, input dealers and milk collection centres. The driving forces behind these shift are mostly spillovers from urban growth, construction boom in the nearby towns and cities, growing purchasing power locally through welfare schemes, MGNREGA, government subsidies, government employment opportunities, etc. This transformation is mostly facilitated by educated youth in the villages, who commute frequently between urban and rural areas.

Graph 1. Occupational shift from 1975 to 1984 and 2010 (male members in number)



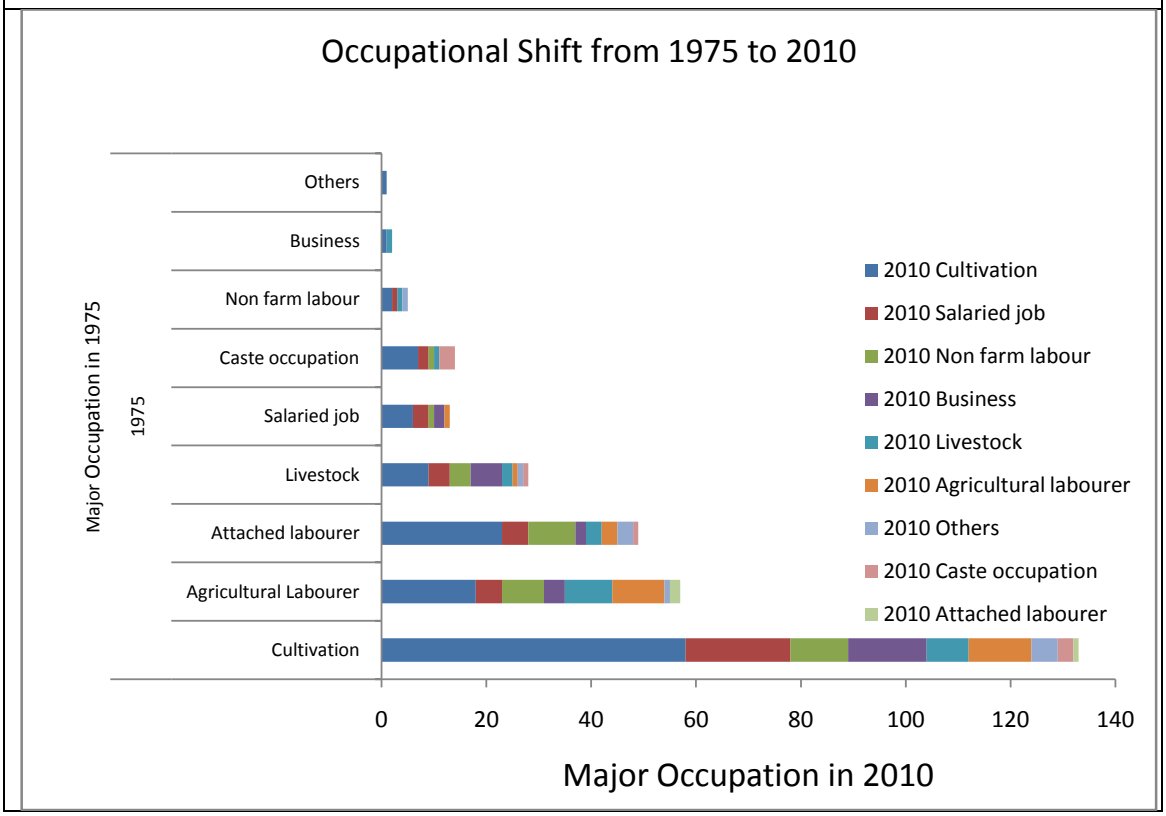


Table 2. Occupational Mobility Matrix (% of male workers) for whose occupation is cultivation and agricultural labourer in 1975 (males)

	Cultivators in 1975									
	Shift to agriculture sector				Shift to non-agriculture					
Year	Cultivators	Livestock	Agricultural Labourer	Attached labourer	Non-farm labour	Caste occupation	Business	Salaried	Others	Total
1975	100									100
1984	77	6	5	2	1	2	0	5	1	100
2004	59	3	10	3	1	1	5	17	3	100
2010	44	6	9	1	8	2	11	15	4	100
	Casual labourer in agriculture in 1975									
	Shift to agriculture sector				Shift to non-agriculture					
	Cultivators	Livestock	Agricultural Labourer	Attached labourer	Non-farm labour	Caste occupation	Business	Salaried	Others	Total
1975	0	0	100	0	0	0	0	0	0	100
1984	13	5	70	6	3	3	1	0	0	100
2004	46	8	20	2	4	0	4	12	4	100
2010	32	16	18	4	14	0	7	9	2	100

Education and caste

There are a large number of studies, which looked at occupational structure and social group, but mostly they are cross sectional studies. There are only few studies which looked at occupational structure and social group with a panel data. Table 3 presents the share of male and female members of households by social group in these occupations both in year 1975 and 2010. Majority of male members are the households of forward caste and other backward castes are still dependent on agriculture. The former were more in farming, while the later were working as agricultural labourer. Among other social groups, dependence on farming declined from 1975 to 2010. The share of agricultural labourer reduced from 64% in 1975 to 32% in 2010, while their share in non-agriculture increased from 10% to 47% among men. Women share of non-agriculture increased significantly from almost negligible level to 29%. The dependence on salaried employment increased in all social groups by 2010 compared to earlier periods due to the increased level of education and skills, increased employment opportunities in government employment and also some petty business. The dependence of female members of backward castes and forward castes on cultivation increased from 1975 to 2010. Scheduled caste female members' dependence on agricultural labourer increased during the same period. Overall, very few women are engaged in salaried jobs, mostly from forward caste.

Table 3. Major occupation of workers (% of total workers) by Social status

	Year 1975					Year 2010				
Occupational structure	OBC	ST	SC	Others	Total	OBC	ST	SC	Others	Total
Males										
Agriculture (I)	**92**	**94**	**90**	**88**	**91**	**76**	**69**	**53**	**85**	**74**
Cultivation	45	47	19	59	44	48	47	16	56	47
Livestock	14	18	7	16	14	6	9	5	5	7
Agricultural labourer	33	29	64	13	33	22	13	32	24	20
Non-agriculture (II)	**8**	**6**	**10**	**12**	**9**	**24**	**31**	**47**	**15**	**26**
Non-agricultural labourer	0	0	1	1	0	17	12	37	15	16
Salaried	2	5	5	6	3	6	3	11	0	4
Business	1	1	2	3	2	1	1	0	0	1
Others	4	0	2	2	3	1	15	0	0	6
Total (III)	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**
Females										
Agriculture (I)	**100**	**84**	**100**	**100**	**93**	**76**	**72**	**75**	**71**	**74**
Cultivation	49	38	0	8	35	47	48	24	55	46
Livestock	9	0	0	0	3	2	4	3	3	3
Agricultural labourer	42	46	100	92	55	27	20	48	13	25
Non-agriculture (II)	**0**	**16**	**0**	**0**	**7**	**24**	**28**	**25**	**29**	**26**
Non-agricultural labourer	0	0	0	0	0	1	1	2	0	1
Salaried	0	0	0	0	0	8	16	12	15	11
Business	0	4	0	0	2	4	4	1	9	5
Others	0	12	0	0	5	11	6	10	5	9
Total (III)	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**
Notes: OBC: Other Backward Caste; SC: Scheduled Caste; ST: Scheduled Tribes										

Among men and women of age 15 and above, only 61.2% and 38.4% completed critical educational level respectively by 2010 (Table 4). Still about 21.3% men and 45.3% of women are illiterate, even though illiteracy reduced significantly. The high proportion of population both among men and women who lacks critical level of education is a major bottleneck to diversify employment and income opportunities. Even though share of higher educated (above 10^{th} standard) is only 25.9% for men and 13% for women, their employability in the high-return non-farm sector is not realised either due to the lack of employment for higher educated or due to lack of skills.

A few high school educated men are settled in military as soldiers in many villages, while women preferred to work as teachers, tailors and health workers. The recent information technology also provided good employment opportunities among grand children of sample farmers selected in the year 1975. The educated youth are looking for employment opportunities in IT sector especially in Aurepalle and Dokur villages which are near to Hyderabad. In the sub-urban villages, a few farmers also engaged in commercial diary, sericulture and poultry on a large scale. Some are successful in upgrading themselves and became role models for others, but most of them are stopped up in the recent years due to labour shortage, high cost of operation etc.

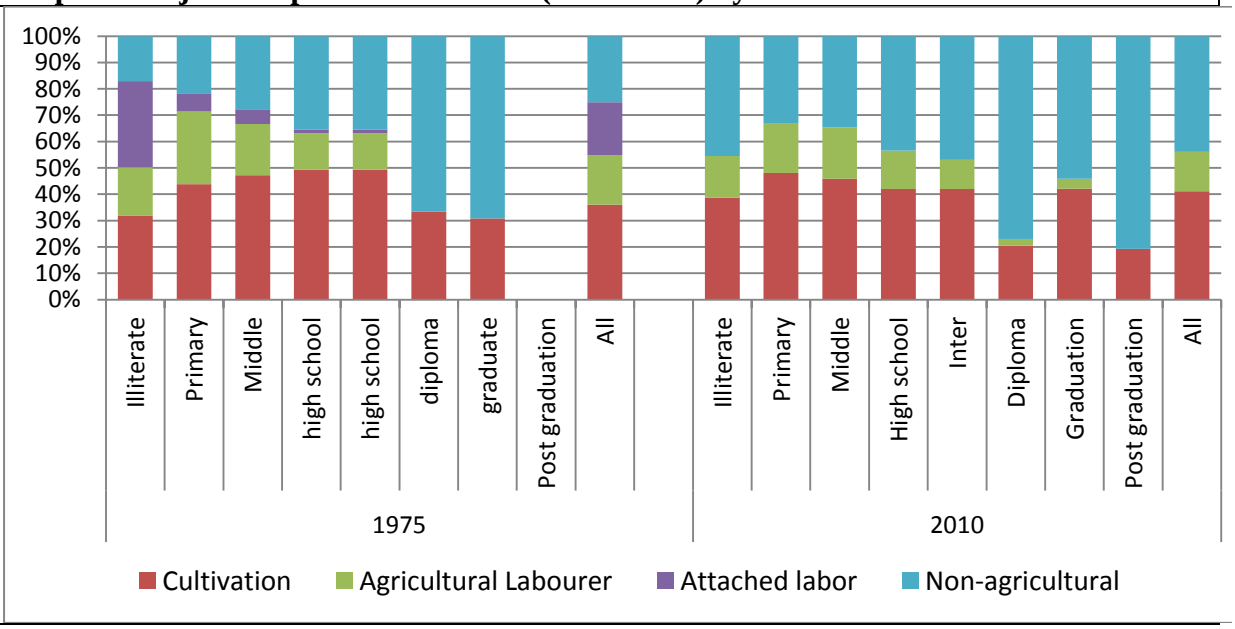
Table 4. Education level by of persons in 1975, 2004 and 2010

	Male (% of male)			Female(% of female)		
Education level	1975	2004	2010	1975	2004	2010
Illiterate	51.8	26.9	21.3	81.0	52.0	45.3
Primary	23.5	18.4	17.5	12.0	16.5	16.3
Secondary and above	24.7	54.7	61.2	7.0	31.5	38.4
Secondary	8.5	11.2	8.6	3.1	8.8	8.3
Higher secondary	3.8	10.8	11.3	2.4	9.7	6.8
High school	5.1	14.7	15.2	0.5	7.5	10.2
(above 10^{th} standard)	7.4	18.0	25.9	1.0	5.5	13.0
Inter	4.0	10.1	13.8	0.5	4.7	7.7
Degree	2.6	5.6	8.6	0.5	0.7	4.1
PG	0.8	2.3	3.5	0.0	0.1	1.2
Total	100	100	100	100	100	100

In rural India, during the mid 1970s majority of the rural males are illiterate and their main occupation is cultivation, livestock rearing and allied activities. Regular farm servant (attached labourer) is also prevalent (Graph 2). Majority of the cultivators and agricultural labourer are illiterate, some have higher secondary school level. Very few are higher educated of which most of them are engaged in cultivation, a few are also engaged in petty business and salaried employment as main occupation. Overall, most of the men are in cultivation, agricultural labourer and attached labourer in 1975.

By 2010, the average education level increased significantly among male members across all occupational categories, while there is slight increase in female education levels (Graph 2). Some of the higher educated males are also engaged in cultivation. A few of the lower and middle educated are also engaged in agricultural labour. Higher educated males are mostly engaged in either agriculture or salaried jobs in mid 1970s. By 2010, educated male members are spread across all occupations, although their participation is higher in salaried jobs, business and others. The growth of educated youth is much faster than the growth in commensurate employment, resulting in higher unemployment. There is also mismatch between skills required in the growing economy and the skills provided by the education system, resulted in the shortage for skilled people even though there are many unemployed educated youth.

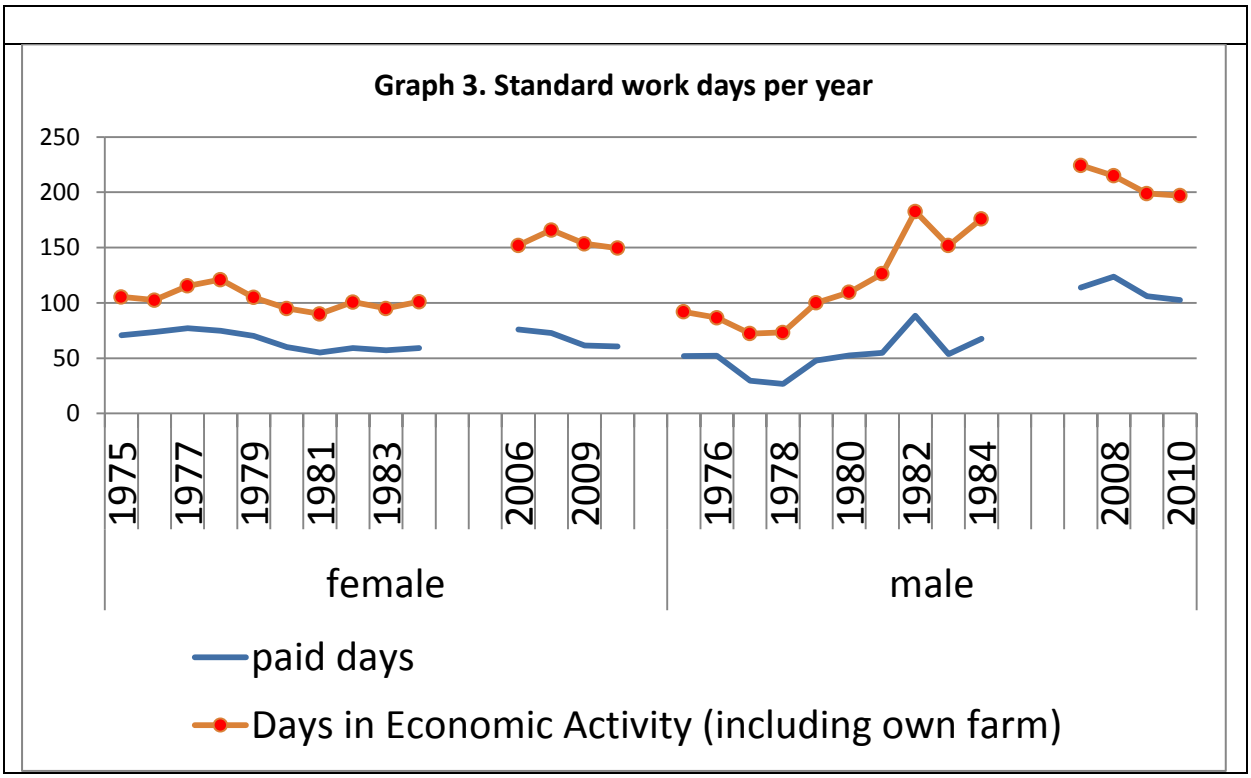
Graph 2: Major occupation of workers (Male in %) by education



In general among women, dependence on farm sector gradually declined from 1984 and the non-farm sector employment contribution is increased by 2010. The average educational level of women also slightly increased, with majority educated up to primary and middle educational level and mostly dependent on agricultural and allied activities (cultivation and agricultural labourer).Most of the educated women are unemployed (or engaged in domestic duties) as most of them willing to work only in higher status non-farm sector like tailoring, teaching and other services. Overall, nearly 30 per cent of the females are engaged in different non-farm sector (non-farm labour and petty business, regular/salaried jobs) employment in rural areas by the year 2010 from almost negligible level in 1975.

Work day's male and female

The number of work days is lower during 1975 to 1984 compared to late 2000s, in both the periods, work days (only economic activities excluding domestic work) are higher for male compared to female (graph 3). Over the period, number of activities (in non-farm sector and others) increased for both men and women, when compared to mid-1970s. In addition to this, the Favourable monsoon during 2004 to 2010 increased the demand for labour in the agriculture and allied activities, resulting in higher work days among both men and women. The increase in economic activities for men started way back during 1978 and 1984, but for women it is a recent phenomenon (except 1983).



Wage rates and paid work in Farm and Non-Farm Sector

The farm sector provided more working days for women compared to men, but the women wage rate per day is less compared to men in year 2010 (graph 4). At the same time the non-farm sector provided more work-days and more wages per day for men, compared to women. As a result the huge gap in cash incomes between men and women persist.

Graph 4. Paid work days and wage rates by gender in farm and non-farm sector, 2010

Self-employment and wage rates: Impact of irrigation

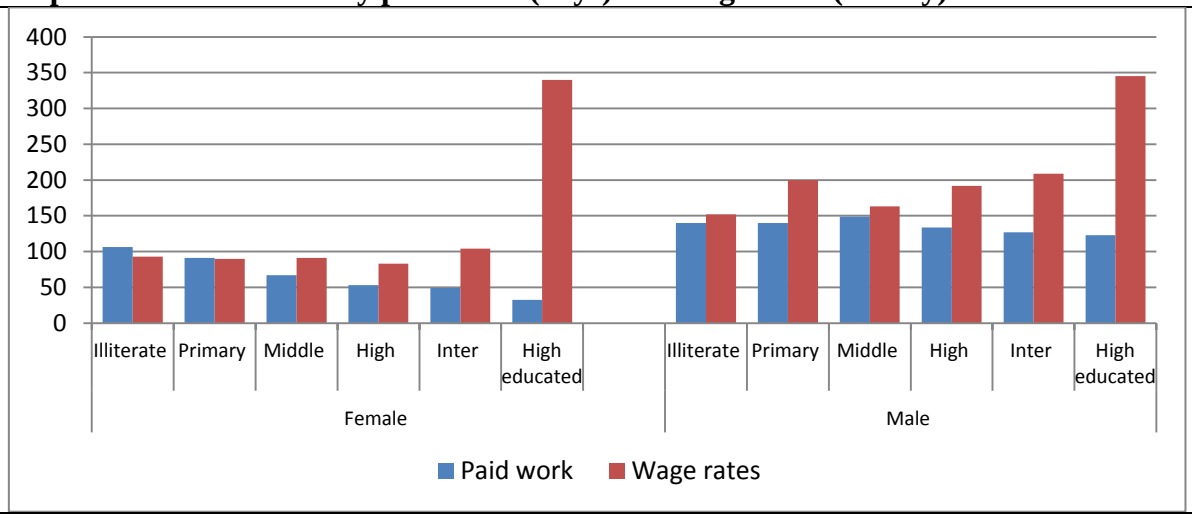
The irrigated area provided more employment opportunities on their own-farm for both men and women compared to un-irrigated area (graph 5). In addition, for both men and women, wage rates are higher for households owning irrigated lands. This indicates that, the average wage rates in the villages with more irrigated land are higher than the un-irrigated lands. As with the irrigation, demand for labourer in different economic activities will increase through multiplier effect of productivity increase of agricultural sector.

Graph 5: Self-employment (days) and wage rates (Rs/day)

Paid work and wage rates: Impact of education

Paid work days decreased with education level among women, but among men, there is no relation between education level and paid work days. It indicates that, in villages, there is little employment opportunities for educated women, some of them are educated and willing to work for commensurate paid work. Wage rates are increased as educational level increased for both men and women. The male paid work and wage rates are higher compared to female in all occupations. Primary, high and intermediate educated male persons wage rate is high compared to respective female wage rates (graph 6).

Graph 6:Education level by paid work (days) and wage rates (Rs/day) in 2010

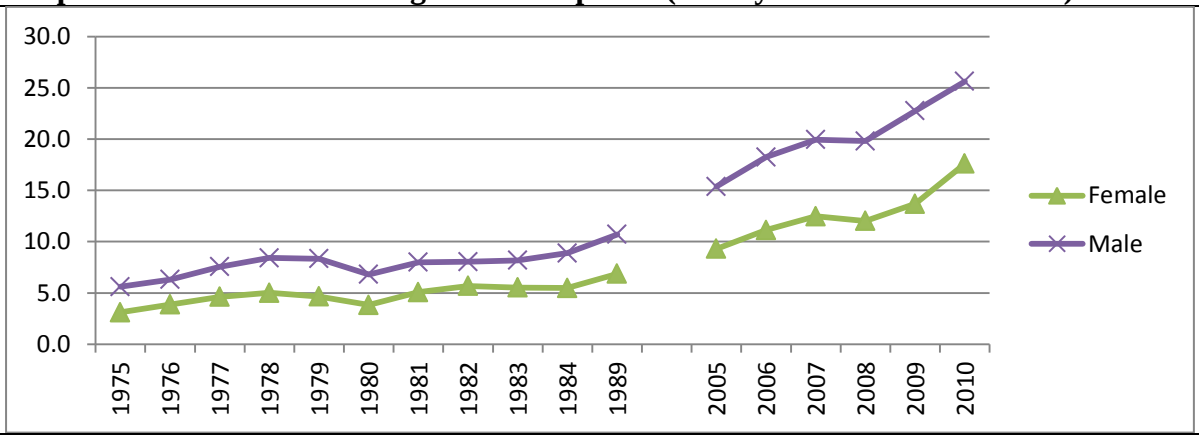


Changes in real wages over the decades

Farm sector

The male wage rates are above female wage rates since mid 1970s. The female and male real wage rates constantly increased from 2005 onwards, the machine labour (tractor hours) hours rates drastically reduced from 2006 to 2010 (graph 7). The bullock real wage rates in farm sector also reduced in 1980s after that in recent years it increased again. Overall, the machine labour is becoming cheaper in the recent years, consequently farm mechanisation increased significantly in many villages.

Graph 7: Farm sector real wages at 1986 prices (Rs/day for male and females)

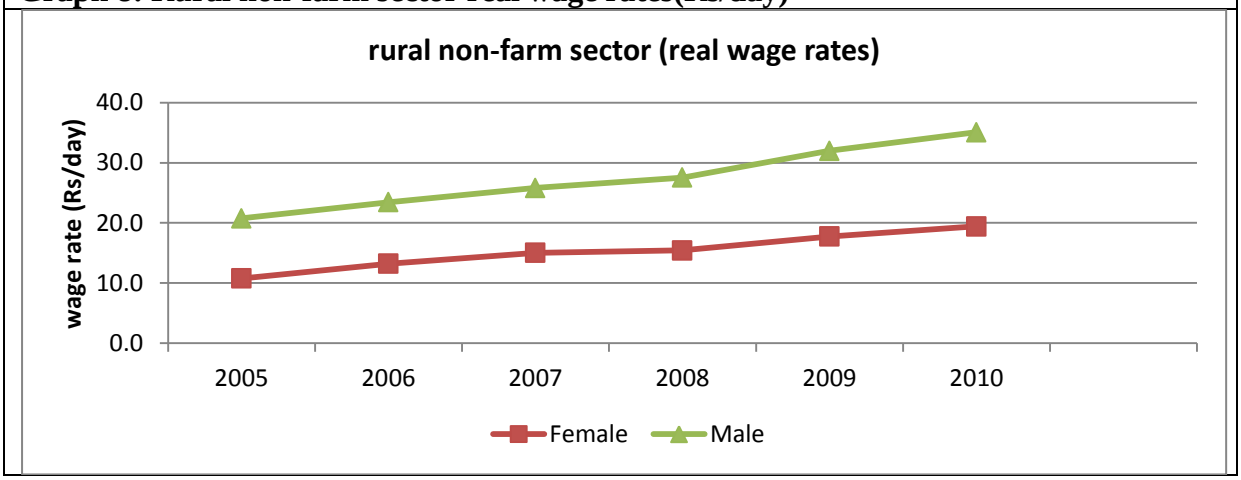


Rural non-farm sector

Presently the non-farm sector is providing more employment opportunities to the male and female workers. Macro employment scenario indicates that out of every ten new jobs created, six are in non-farm sector. For this reason rural non-farm sector wage rates increased

especially for skilled jobs. Similarly non-farm wage rates for bullock labour also increased. However, the tractor hours rate decreased in the recent past (graph 8).

Graph 8: Rural non-farm sector real wage rates(Rs/day)

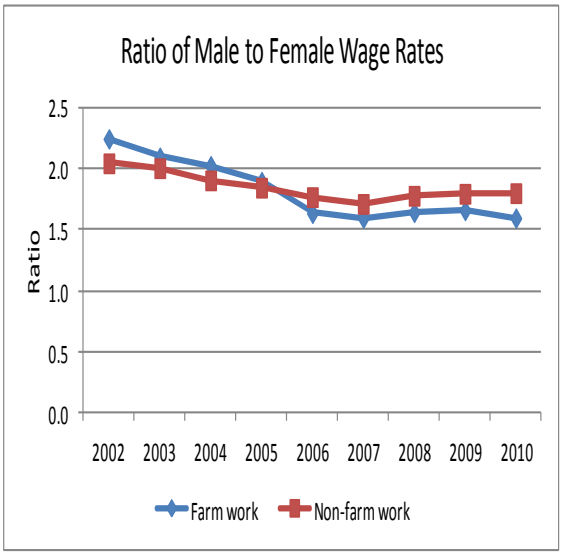


Gender wage disparities in farm and non-farm sector

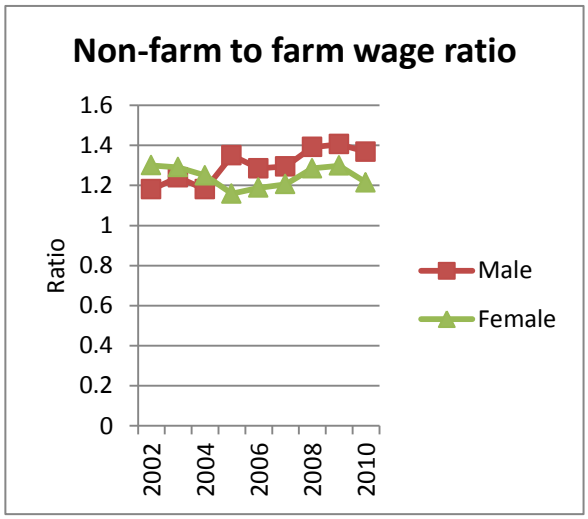
The gender disparities in wage rates have been reducing since 2002, however, in the farm sector there is faster decline compared to non-farm sector. The male wage rates are about 50% more than female workers both in farm and non-farm for similar work in the casual labourer (graph 9). The main reason for reducing wage disparities are improving the female skills and education levels comparable with men, increased awareness and bargaining skills and also offering equal wage rates for both men and women in public works programs like MGNREGA.

Graph 9: Ratio of male to female wage rates

Ratio of male to female wage rates



Ratio of non-farm to farm wage ratio



Ratio of non-farm to farm wage rates

In general, non-farm wage rate is higher than the farm wage rate since 2002 for both men and women. Among males, wage rates of non-farm sector increased faster than the farm sector. But among females the ratio of non-farm to farm wage rates is stagnant over the period with significant decline in recent years. This is mainly due to faster growth of wage rates for women in the farm sector. The rising real wages may be due to the Favourable monsoon from 2003 onwards, resulted in increased agricultural labour productivity, rising prices of farm produce and shift to high value crops. Growth in rural non-farm sector, public investment and subsidies, expansion of rural welfare programs and to some extent expansion in MGNREGA program are also reasons for rising wages. In response to rising wages, farm mechanisation is increasing across India, at the same time, it increased bargaining power of landless labourers (Rosenzweig 1978; Foster and Rosenzweig, 2004).

Farm mechanisation

In the past decade, the machine labour has become cheaper compared to bullock labour. Most of the occupations are mechanised in major crops like paddy, wheat, chickpea, etc. There are many subsidy programs for purchase of farm machinery under different agricultural development programs like National Food Security Mission (NFSM), ISOPOM (Integrated Scheme on Oilseeds, Pulses, Oilpalm and Maize) and under the Rashtriya Krishi Vikas Yojana (RKVY) to replace scarce bullock labour and human labour during the peak season. The graph 10 depicts charges for bullock pair days and tractor hours for similar operations in the study villages, which shows that over the period, tractor labour has become cheaper compared to bullock labour, which is the main driving force for replacement of bullock labour with tractors in many farm operations. It is also revealed from the high and significant negative correlation between use of tractor labour and bullock labour among sample farmers. It is also noted that there is no significant correlation between tractor use and human labour use (Table 5).

Graph 10. Changes in the ratio of tractor to bullock charges

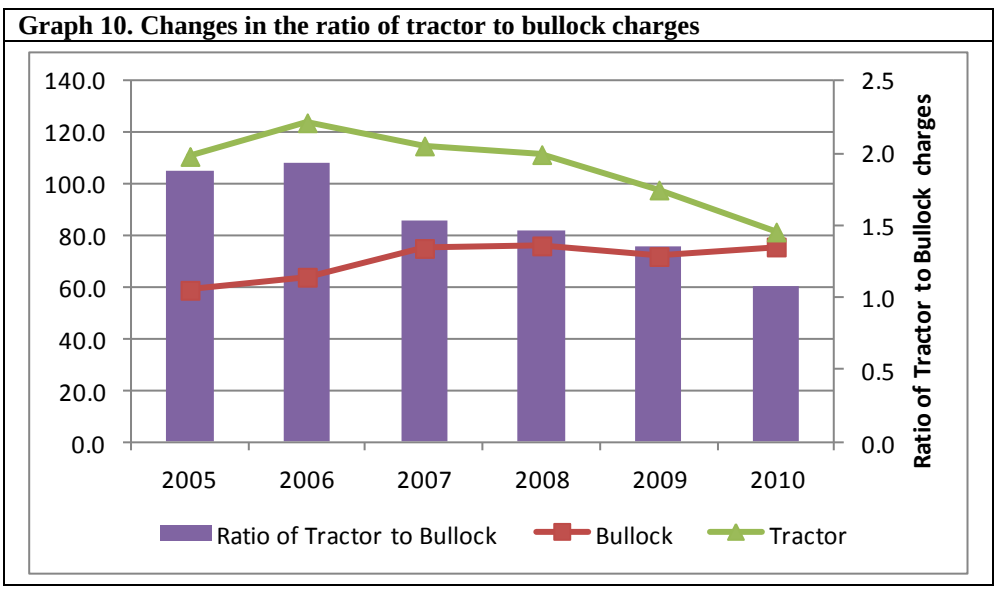


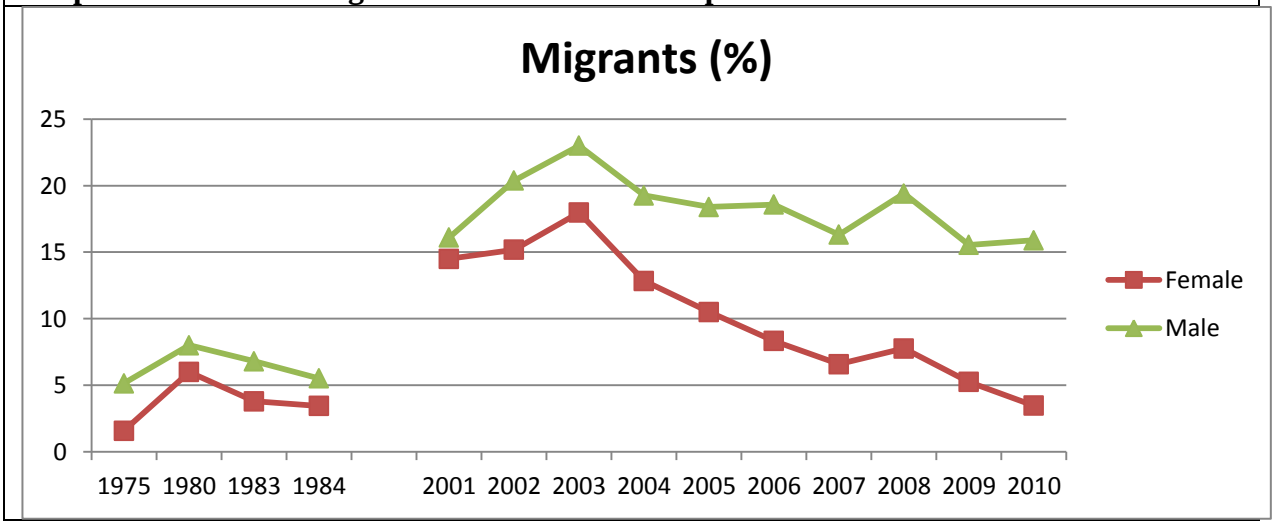
Table 5.Correlation coefficient among labour market variables in 18 villages (per acre)

	Operational holding	Standard man hours	Bullock hours	Tractors hours
Operational holding	1	-0.164	0.130	0.541
Standard man hours		1	-0.014	0.310
Bullock hours			1	-0.552
Tractor hours				1

Migration

Graph11shows that the migration levels, both among men and women, are higher during 2001-2010 compared to 1970s and 1980s. However, it came down drastically since 2003 till 2010 due to Favourable monsoon and also some positive impact on employment generation by the MGNREGA program introduced in 2006 mainly among women. The favourable monsoon reduced distress migration and increased wage rates in agricultural sector especially in peak seasons. Women migration reduced mainly due to the phenomenon of feminisation of agriculture, increased wage rates for women especially as a result of MGNREGA program. The migration among men is peaked at about 23% in the drought year 2003 in all the study villages, then after migration among men also decreased due to exceptionally favourable climate for agriculture and increased non-farm employment opportunities and public works programs in MGNREGA.

Graph 11. Percent of migrant members in the sample households



Service delivery: Credit and social groups

With renewed interest in the proper functioning and reach of the public delivery system among academicians, practitioners of public policy, this section deals with access to credit by the sample households both from formal and informal sources. Most of the villagers were

dependent on both formal and informal sources for their credit needs in 2010. Informal sources are dominated by commission agents, landlords, relatives and friends and input suppliers. By 2010, even though formal sources were with lower interest rates and for long duration, due to the procedural formalities and collateral security requirement to access loans, majority of the vulnerable sections (SC/ST, landless and small farmers) are not able to get loans. Hence, most of them still dependent on informal sources even though the interest rates are high and for shorter period. The disadvantaged groups were unable to produce collateral documents and not able to wait for time taking procedures as their needs are urgent. As it is noted that the vulnerable sections take loans mostly for urgent needs like treatment for ill health, purchase of consumer goods like food and oil etc. Among the different land categories, most of the small farmers borrowed from informal sources, while large farmers borrowed from both formal and informal sources. The data revealed that majority of the small farmers belongs to SCs and STs. Multiple borrowings are common in the rural credit markets, mostly from informal sources. Forward caste households are able to get multiple loans from formal sources. Irrespective of the social group and farm size class, all households are able to get loans from informal sources, while access to formal sources is restricted to some extent based on landholding, caste etc.

Large farmers are able to get loans at lower interest rates both from formal and informal sources. Households in the other caste groups are also able to get loans at lower interest rates. Overall, large farmers and forward caste households are able to get loans at favourable terms both from formal and informal sources. Scheduled caste households are able to get at lower interest rates from RRBs and cooperatives. This indicates that there is a need for increased emphasis on service delivery to vulnerable sections of the society within villages for equitable distribution of public services.

Salient developments in the labour markets and policy options

Slow structural transformation in rural employment

Now the farm sector contributes only 14% of GDP, share of industry is below 30%, but the share of services is more than 50%. However, service sector led growth cannot absorb the growing rural labour force at 2-3% annum. It is a big challenge to provide employment to rural educated youth. Even though there is a rapid growth of the economy, there is slow growth in structural transformation in labour market as compared for example China. Still poverty persists among rural labour and socially backward castes. Men are moving out from agricultural sector in search for employment in non-farm and urban sectors, left behind the women and old aged to take care of farm sector. Historically rural-urban migration rates in India are lower than China and other developing countries. There is faster growth of labour productivity in non-farm sector compared to farm sector, resulted in growing disparities in wage rates between non-farm and farm sector.

Increasing divergence in wage rates and raising wage rates

There is divergence in wage rates between urban and rural wage rates until recently, due to rapid growth in urban non-farm sector. The rapid growth in non-farm sector especially service, construction, transports etc. pulling up wage rates in urban areas along with labour from farm sector. This resulted in increased demand for skilled labourer in rural areas. Real wages started increasing since 2002 well before the introduction of MGNREGA for both men and women. There is also a trend

of convergence between farm and non-farm wages in rural areas and also convergence of wages of men and women.

Stagnation in labour productivity in agriculture

The farm productivity was negligible during 1970s and 1980s, but picked up in late 1980s and 1990s again declined in early 2000s and picked up very recently from 2004 onwards due to good monsoon. In general, productivity in non-agricultural sector is 6 times more than farm sector. With an accelerated labour productivity in non-farm sector that started in 1990s, structural transformation started but at slower pace. Skilled labourer moving to urban sector and non-farm sector and hence, wage gap started increasing. Still about 60% of India's poor are agricultural labourer. This indicates the concentration of poor in agricultural labourer with lower level skill who have minimum access to non-farm employment.

Shift in engines of growth from farming to non-farm sector

Till 1991, growth in farm sector is the main source of employment in rural areas, but later on urban growth is the main source of growth and employment mainly due to increased urban –rural spill-overs in terms of non-farm sector growth in rural areas, migration and remittance income. Non-farm employment mostly in petty business, construction, government work contracts increasing. Six out of ten new jobs in rural areas are now in the non-farm sector. They offer significantly higher wages (40-50% higher) than farm sector. Most jobs are casual jobs. These jobs go mostly to young men with adequate education and skills. Trade, transport, construction, village small scale industries and services are major employment creators. The rural non-farm sector and new technology related jobs are growing faster at the cost of caste occupations, farm labourer etc. Most of the non-farm employment in rural areas is in self-employment mode. The share of households with non-farm self-employment is significant (most of the farmers also). Their non-farm income is increased significantly since 2001.

New employment opportunities with new technology

Labour force participation of both men and women increased significantly. Although women participation in economic activities (both paid and self-employment) is very low compared to men. Overall employment growth in farm sector declined since 1990s. Rural manufacturing sector is almost absent in the study villages. Further, demand for construction work, petty business, technology related repair shops, PCOs etc is rising, where there is very little scope for women work participation in non-farm sector. Almost all the employment in rural areas is informal except a few teachers, soldiers and other small government employment. Urban employment prospects for majority of workers are bleak, except in construction works in the big cities like Hyderabad, Mumbai etc. Women are not able to shift to these works easily and hence they stay in the villages to look after children and farming and sometimes work as farm labourer.

Conclusion

During the mid 1970s the agriculture sector and allied activities are predominately dominated in rural India, with less work days (standard days of eight hours each), the real wages are also very low for both men and women. Almost all operations are done by manual labour with little mechanisation. About 90% of the area was under rain fed with only single crop grown per year. The gradual mechanisation started in early 1990s with simultaneous employment diversification to non-farm sector mostly into petty business, trade, construction, transport and communications increased

employment and income opportunities in multiple occupations mainly driven by large urban demand, growing rural-urban linkages and development within rural areas. Women are still mostly dependent on the farming as the men try to engage in non-farm sector either in rural or urban areas. The women belonging to down trodden sections are mostly engaged as agriculture labourer , while other backward and forward caste women mostly engaged in cultivation. Except few forward caste women there is very little engagement of women in high-end salaried employment by 2010. But among men, employment diversification to non-farm sector is faster and mostly towards the salaried, petty business and other professional employment among higher educated, which are undoubtedly high income earning opportunities.

Still, most of the employment in non-farm sector is in self-employment mode which demands a moderate level of education at least up to the secondary or high school, but requires skills like carpentry, goldsmith, plumber and tailor etc. There is no rise in demand for higher educated in rural areas except few government jobs. However, educational level of young men and women in rural areas increased significantly by 2010 resulted in unemployed educated youth especially among women. By 2010 nearly 30% of the females are engaged in the non-farm sector (non-farm labour and others) and among males more than 50% are now dependent on non-farm sector. However, most of these non-farm workers also own some land and work on their own farms as part-time employment. For most of the men and women, identifying which is the part-time employment is a difficult task. It mostly based on the monsoon, as in favourable monsoon farming is profitable, while during agriculturally un-favourable years non-farm sector is more profitable. Farming is acting as a buffer to absorb shocks in the non-farm sector employment and income, it is also a source of investment for setting up of own non-farm activities wherever non-farm employment opportunities exists. In some locations, family heads (mostly men) are searching for non-farm employment, while female members are looking after day-to-day management of farms and involved in domestic work. Most of the farm operations being mechanised, it is possible to opt for multiple occupations within the family, with women taking over farming and men engaging in non-farm or urban oriented employment which fetches higher income than the farming. The better educated, upper caste and persons with higher socio-economic status and well-connected persons mostly men are able to capture most of the benefits emanating from the very few higher earning non-farm employment opportunities.

On the other hand, socially, educationally and economically backward classes are not able to capture these benefits and mostly stick to their traditional occupations like cultivation, agricultural labourer and caste occupation. These households who stay back in the villages with little social and physical capital are not able to upgrade their economic status over the period and not able to participate in the India's growth story. The wage rates of these people are far lower than the urban and non-farm wage rates. The productivity of labour is also low, as there are no efforts to increase productivity of these groups of population in the past. There is a need for right polices to effectively address this excluded population.

Very few with urban connections are able to migrate to urban centres first on temporary basis and later on if they are able to get good employment they choose for permanent migration to small towns and urban centres. These households who migrate to urban centres and small towns are benefiting through multiple opportunities like better public health, education, transport facilities, recreation facilities etc. in addition to multiple and ready source of employment.

Even now benefits from most of the government programs are flowing to forward caste and large landholder than the backward castes and disadvantaged social groups (landless and small farmers). For example, social disadvantaged (SCs and STs) groups are more dependent on informal sources of credit than formal sources of credit. The disadvantaged groups are unable to provide collateral documents required to meet the procedural requirements of the formal financial sources like banks, cooperatives and regional rural banks. Most of the small farmers borrowed money from the informal sources compared to large landholders. The analysis revealed that majority of the small farmers belongs to SCs and STs, which reinforce the problem of delivery of public services.

Major policy reforms suggested from the study are (i) Productivity growth needs to be sustained at very high levels by strengthening research and through effective extension strategies, (ii) Measures to be taken to ensure, wider adoption of appropriate farm mechanisation to address farm efficiency and labour shortage, (iii) Promotion of special economic zones in prospective rural areas may increase labour intensive manufacturing units to create mass employment within rural India. That is massive investment in rural non-farm sector, (iv) Efforts needed to carry out to improve work conditions, affordability, and quality of employment in non-farm sector in rural India and provide diverse sources of income and lifestyles in small towns, (v) Ensure mobile connectivity, national e-governance policy; rural roads (Pradhana Mantri Grama Sadak Yojana) played a major role in increasing non-farm incomes. Now non-farm employment contributes more than 50% of rural income. More investments are required to improve connectivity of rural areas, (vi) Provide economic incentives to set up industries in small towns that might help in equal distribution of growth between rural and urban areas. Urban centres should be within the reach of all the villages, through district planning committee. So that the choices in work and lifestyles, public health, education, transport and basic needs are available to all villagers, (vii) Education policy should address the burgeoning skill gaps and sufficing the demand for skilled human resources. Enable better policies, institutions and programs to target vulnerable sections of the society, (viii) Commissioning decentralised participatory mode of administration of rural development programs for efficient delivery of public services to the vulnerable sections of the society.

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