RESEARCH NOTES AND STATISTICS

Wage Rates in Agriculture

A. V. Jose*

https://doi.org/10.25003/RAS.12.01.0010

The Government of India has long been reporting agricultural wages in different States. Academic scholars have followed the data to study regional differences and long-term movement of wages (the discussion in this article is of daily wage rates; "wages" refers throughout to wage rates and not wage earnings). One reason for giving close attention to the wages of people at the lower end of rural India is that they help us understand the employment and living standards of the poorest in the country.

This author has benefited from examining agricultural wages in India through the past several decades and providing periodic updates on the movement of wages. One of the oldest sources of data used for the purpose is *Agricultural Wages in India* (AWI), an annual publication of the Ministry of Agriculture, Government of India. This article uses AWI data to build a comparative profile of the wages of men and women in Indian States and to show how far they have changed over the years in real terms.

There are 18 States considered in this study, each with a population above five million. They are Andhra Pradesh, Assam, Bihar, Chhattisgarh, Gujarat, Haryana, Himachal Pradesh, Jammu and Kashmir, Jharkhand, Karnataka, Kerala, Madhya Pradesh, Maharashtra, Odisha, Punjab, Rajasthan, Tamil Nadu, Uttar Pradesh, and West Bengal. In addition, we have the average wages for the whole of India given in the AWI sources. Table 1 presents the yearly money wages earned by men and women engaged in field labour operations from 2015-16 to 2019-20. The final year reported in the table is probably the last "normal" year noted in Indian labour markets before the Covid-19 pandemic. The Table includes yearly averages and median wages, standard deviation, and coefficients of variation among the 18 States.

^{*} Former Head, Education Programme, International Institute for Labour Studies, International Labour Office (ILO), and Honorary Fellow, Gulati Institute of Finance and Taxation (GIFT), avjose11@gmail.com

Table 1 Average agricultural wage rate for field labour, men and women, States of India, 2015-16 to 2019-20 rupees per day

State	Average agricultural wage rate for field labour										
	Men					Women					
	2015- 16	2016- 17	2017- 18	2018- 19	2019- 20	2015- 16	2016- 17	2017- 18	2018- 19	2019- 20	
1	2	3	4	5	6	7	8	9	10	11	
Andhra Pradesh	295	321	331	362	381	200	224	239	256	272	
Assam	245	275	278	288	318	200	227	229	232	252	
Bihar	215	235	246	270	297	203	216	227	244	264	
Chhattisgarh	181	201	200	214	234	134	142	135	153	170	
Gujarat	176	211	219	228	251	156	187	196	203	228	
Haryana	388	390	416	440	453	322	320	350	373	385	
Himachal Pradesh	276	278	300	322	338	252	266	279	300	312	
Jharkhand	182	226	263	256	258	170	202	232	230	239	
Karnataka	272	326	354	384	366	245	280	310	357	336	
Kerala	576	582	613	673	701	427	454	482	506	525	
Madhya Pradesh	213	230	246	249	265	184	199	210	213	226	
Maharashtra		132	261	278	328	209	90	131	209	225	
Orissa	224	239	270	280	307	173	191	227	239	257	
Punjab	373	395	403	412	425						
Rajasthan	300	314	336	357	368	247	261	269	302	303	
Tamil Nadu	334	327	346	372	392	142	153	167	180	195	
Uttar Pradesh	238	233	241	260	269	216	212	223	236	248	
West Bengal	259	267	274	279	305	219	225	236	236	256	
All India Average	281	296	315	330	348	218	228	244	262	276	
Standard Deviation	96.11	96.32	93.69	104.59	104.48	68.75	77.38	80.29	82.38	79.84	
Average of States	279.24	287.89	310.94	329.11	347.56	217.59	226.41	243.65	262.88	276.06	
Coefficient of variation	34.42	33.46	30.13	31.78	30.06	31.59	34.18	32.95	31.34	28.92	
Median Wage	259	271	276	284	323	203	216	229	236	256	

Source: Agricultural Wages in India

Note: Entries in Bold: States with wages above the median; Entries in italics: States with wages below the median

Inter-State Differences

The variation in wages for men and women among the States of India is pronounced. Kerala has the highest wage for men (columns 2-6) and women (columns 7-11) as given in Table 1. This observation applies not only for the years under review but also for several decades in the past (Jose 2017, 2018). Other States consistently on top of the ranking are Haryana, Punjab, Tamil Nadu (for men only), Karnataka and Himachal Pradesh (for women only). The relative positioning of States suggests that the ordering of men's wages roughly corresponds to the ordering of women's wages, and that the overall ranking in both cases has mostly remained unchanged.

The low-wage States – Chhattisgarh, Jharkhand, Madhya Pradesh, and Uttar Pradesh – are in the heartland of India, while the high-wage States are in the south and north-west. It appears that some of the more urbanised and industrially advanced States – Gujarat, Maharashtra, West Bengal, and for women in Tamil Nadu – have reported low agricultural wages.

At the same time, State-wise variation has tended to diminish over the years, as indicated by the coefficients of variation. An earlier study (Jose 2018, Tables 1 and 2) suggests that such variation in wages for men and women has been declining from 2009-10 onwards. In India, where the markets are being connected through an increased flow of goods, services, and migrant workers across States, one would expect a convergence of wages over the years. Such convergence seems to be under way over the years reviewed in this study.

The regional variation in wages is an exciting subject of study, and requires explanations beyond the scope of this paper. I shall only flag some plausible explanatory variables without making any attempt to establish a statistical relationship between these variables. They are the State Domestic Product per capita

Table 2 *Ratio of women's wage rates to men's wage rates* in per cent

State	Ratio of Women's Wage to Men's Wage							
	2015-16	2016-17	2017-18	2018-19	2019-20			
	2	3	4	5	6			
Andhra Pradesh	67.80	69.78	72.21	70.72	71.39			
Assam	81.63	82.55	82.37	80.56	79.25			
Bihar	94.42	91.91	92.28	90.37	88.89			
Chhattisgarh	74.03	70.65	67.50	71.50	72.65			
Gujarat	88.64	88.63	89.50	89.04	90.84			
Haryana	82.99	82.05	84.13	84.77	84.99			
Himachal Pradesh	91.30	95.68	93.00	93.17	92.31			
Jharkhand	93.41	89.38	88.21	89.84	92.64			
Karnataka	90.07	85.89	87.57	92.97	91.80			
Kerala	74.13	78.01	78.63	75.19	74.89			
Madhya Pradesh	86.38	86.52	85.37	85.54	85.28			
Maharashtra	66.90	68.18	50.19	75.18	68.60			
Orissa	77.23	79.92	84.07	85.36	83.71			
Punjab								
Rajasthan	82.33	83.12	80.06	84.59	82.34			
Tamil Nadu	42.51	46.79	48.27	48.39	49.74			
Uttar Pradesh	90.76	90.99	92.53	90.77	92.19			
West Bengal	84.56	84.27	86.13	84.59	83.93			
All India Average	77.58	77.03	77.46	79.39	79.31			

Source: Agricultural Wages in India

Note: Values above 75 marked in bold, those below 75 in italics

(SDPPC) in current prices, products per worker in agriculture and the rural non-farm sectors and the minimum wages prevalent in each State under the National Rural Employment Guarantee Act (NREGA). A structured assessment of the impact of various explanatory factors awaits the attention of scholars.

Gender Disparity

Is there any semblance of gender equality in agricultural wages of Indian States? Do men and women receive equal wages for work of equal value? We can study the question of whether wage disparities exist, have widened or narrowed down. To this end, Table 2 presents the ratios of women's wages to men's (in per cent) for the five years under review.

We should expect minimal differences in the farm sector because of the unskilled nature of jobs in many field-crop cultivating regions of India. In such regions, such as the Indo-Gangetic plain, where field crops under riparian irrigation systems are cultivated intensively, we come across a low work participation of women in agriculture. As cropping intensity increased in these States, wage disparity might have narrowed. But there are many States in India with a historically significant share of rural labour households dependent on wage employment and vast disparities in wages. Some south Indian States, notably Tamil Nadu and Andhra Pradesh, conform to this pattern.

Has the disparity widened or narrowed over the years? Table 2 suggests that it has narrowed or remained stable in most States. More States holding a significant share of the total agricultural population of India, have women workers receiving three quarters or more of the wages of their male counterparts. The prevalence of better ratios noted in many heartland States could be the result of an increase in agricultural output and cropping intensity, causing a rise in seasonal demand for labour and an increase of women's wages. In States where the disparity has stubbornly persisted, it could be due to a continuing legacy of excess supply of workers not fully absorbed into wage employment.

Wage Growth in Real Terms

We followed a standard methodology to trace the long-term movement of wages (Krishnaji 1971, Jose 2017). First, the index numbers of yearly increase or decrease in money wages of both men and women in all States and India were computed with 2005-06 as a base year equal to 100. The price series used was the Consumer Price Index for Agricultural Labourers (CPIAL). The earlier studies had shown that the 1980s and 1990s were decades of impressive growth, when real wage rates for men and women increased at annual rates of two to three per cent in many States (Jose 2017, 2018). The south Indian States have forged ahead with respect to the growth of real wage rates. There was, however, a relative under-performance and erratic

movement of wage indices during the first half of the 2000s. The present study traces the movement of wages during the succeeding years until 2019-20.

We can measure the performance of States on the real wages front using the rates of growth for men and women in consecutive years as reported in Table 3. Growth rates for men and women are consistently above the average in Andhra Pradesh, Assam, Bihar, Chhattisgarh, Madhya Pradesh, Odisha, Uttar Pradesh, and West Bengal. In Tamil Nadu, men's wages have grown at above average rates in most years, while the same holds good for women's wages in Rajasthan. One can surmise that men's wages rose visibly in the traditionally low-wage States of India, and so did women's wages, perhaps even better.

Table 3 Annual rates of growth of real wage rates of agricultural labourers, selected Indian States, 2015-16 to 2019-20 in per cent

State	Annual growth rate of wage-rates										
	Men					Women					
	2015-	2016-	2017-	2018-	2019-	2015-	2016-	2017-	2018-	2019-	
	16	17	18	19	20	16	17	18	19	20	
1	2	3	4	5	6	7	8	9	10	11	
Andhra Pradesh	7.07	6.60	6.11	5.76	5.28	6.66	6.16	5.77	5.44	5.00	
Assam	6.27	6.46	6.26	5.98	5.70	8.07	8.17	7.85	7.39	6.91	
Bihar	6.50	6.37	6.24	6.16	5.94	7.95	7.73	7.51	7.27	6.89	
Chhattisgarh	6.20	6.30	6.13	5.97	5.82	5.84	5.86	5.51	5.42	5.36	
Gujarat	0.87	1.20	1.48	1.64	1.72	1.46	1.69	1.93	2.03	2.11	
Haryana	4.30	3.82	3.57	3.39	3.08	4.70	4.11	3.86	3.69	3.40	
Himachal Pradesh	4.48	4.23	4.12	4.08	3.96	4.88	4.92	4.86	4.84	4.69	
Jharkhand*	3.85	4.88	5.89	6.10	5.81	4.32	5.10	5.90	6.06	5.81	
Karnataka	4.45	4.57	4.66	4.87	4.58	3.77	3.80	3.91	4.34	4.18	
Kerala	3.83	3.37	2.99	2.86	2.71	5.45	4.88	4.40	4.05	3.70	
Madhya Pradesh	6.93	6.92	6.90	6.66	6.36	7.15	7.06	6.94	6.64	6.30	
Maharashtra	2.39	1.31	2.84	3.81	4.44	-0.26	-1.26	-0.61	1.06	1.99	
Orissa	7.85	8.00	8.11	7.93	7.66	6.28	6.79	7.34	7.49	7.40	
Punjab	6.17	5.84	5.44	5.03	4.55						
Rajasthan	4.68	4.55	4.58	4.50	4.21	5.94	6.11	6.14	6.18	5.85	
Tamil Nadu	6.64	5.87	5.19	4.72	4.18	4.50	4.04	3.70	3.49	3.23	
Uttar Pradesh**	5.77	5.35	5.09	4.84	4.45	6.29	5.85	5.62	5.30	4.88	
West Bengal	6.86	6.75	6.37	5.97	5.68	6.65	6.59	6.32	5.95	5.66	
All India	5.37	5.12	4.93	4.72	4.39	5.22	5.02	4.89	4.79	4.52	

Source: Agricultural Wages in India

Notes: (1) Growth rates derived from log values of index numbers of real wage rates for different periods, estimated by the author.

^{(2) *}Base year for men and women 2006-07; ** Base year for women only 2006-07.

⁽³⁾ Growth rates above all-India average marked in **bold** and those below in *italics*

The States showing lower growth, Kerala, Haryana, Rajasthan and Karnataka have historically had higher money wages and top rankings in the league tables. On the other hand, some low-growth States such as Gujarat, Maharashtra, and Tamil Nadu (for women) have had lower money wage-rates. The exceedingly low growth rates noted for both men and women in Gujarat and Maharashtra point to a general under-performance with respect to agricultural wage-rates in the industrially fastgrowing States of India. Factors underlying the variation in wage rates and their long-term growth in real terms call for detailed statistical analysis, a topic for further work.

In this context, it is essential to distinguish between States that are either net exporters or net importers of migrant labour. Rural wage rates have grown faster for men and women in labour-exporting States. Assam, Bihar, Chhattisgarh, Madhya Pradesh, Odisha, UP and West Bengal are examples of States where labour shortages arising from emigration has led to an increase of wages for local workers and the absorption of more women into paid employment. Remittances of emigrants to their States of origin have contributed to higher incomes and a higher reserve price of labour in such States. The growth of wage rates reported in columns 2 to 6 and 7 to 11 of Table 3 reflect this phenomenon. On the other hand, in Gujarat, Haryana, Kerala, and Maharashtra, growth has consistently stayed below the national average, decelerated, or even turned negative. It could be that the influx of migrant workers has had a dampening effect on wages in the labour-receiving States. Kerala, with high nominal wages and a better growth of real wages in the past (Jose 2018), is a case in point.

The number of workdays available per week, a crucial component of wage income, is the lowest in Kerala for both men and women. As per estimates derived from the Periodic Labour Force Survey of 2019-20, male casual labourers in Kerala worked 4.1 days per week in rural areas and 3.9 in urban areas. The corresponding averages for women were 4.5 and 4.2, respectively. The Kerala averages are far lower than the corresponding all-India averages, 5.7 and 5.4 days for men and 5.5 and 5.3 for women respectively (PLFS, 2019-20, Average of four rounds in Table 45). Despite fewer days of work, the wage rates are sufficiently high in Kerala to keep the monthly income of casual labourers among the highest in India. As a result, Kerala remains a preferred destination of migrant workers. However, the dynamics of domestic labour markets, where high wages can co-exist with fewer days of work, call for a clear-cut explanation.

Table 3 points to a consistent deceleration of growth rates of wage rates paid to men and women in most States and the whole of India in every year since 2015-16. The figures indicate a decline in real wage rates for men and women during the period from 2015-16 to 2019-20. The decline is possibly the outcome of a visible under-performance of the Indian economy in the post-demonetisation years. More specifically, the decline can also be associated with the failure to expand the scale and reach of NREGA in many Indian States (CPR 2021). The trend is likely to continue until the economy starts to recover. The finding underscores the importance of national policies, especially rural employment creation, for a sustained growth of rural wages.

Summing Up

This note aims to compare wage rates paid to men and women in major Indian States and to trace their growth over the years in real terms. The variation in wage rates between States is pronounced. Their ranking in terms of money wage rates is roughly the same for men and women and has remained unchanged in recent years. The low-wage States are in the heartland of India, while the high-wage States are in the south and north-west. There is an ongoing convergence of wage rates among States, possibly the outcome of an increased flow of goods, services, and migrant workers. The ratio of women's wages to men's suggests that gender disparity has declined or at least remained stable in most States, and that there are more States in India where women are paid three-quarters or more of the wages of male agricultural workers.

Money wage rates, when deflated by the consumer price index numbers of agricultural labourers, show that the real wage rates paid to men and women in traditionally lowwage States have risen visibly during the past decade and a half. On the other hand, those with lower growth have historically had higher money wages and top rankings in the league tables. There is a general under-performance with respect to agricultural wage rates in the industrially fast-growing States. Real wage rates have grown faster among the labour-exporting States, while growth in the destination States has been below average. Kerala, which is in the latter group has moved down the league tables, now showing lower growth in wage rates. Despite a visible shortage of employment opportunities, the State remains an attractive destination for migrant workers. Finally, there is a consistent deceleration in the growth of real wage rates in most States after 2015-16, implying an outright decline of wage rates since then. This can be attributed to the under-performance of the Indian economy since demonetisation and the scaling down of the national rural employment programme. This worrying trend may continue in the coming years.

REFERENCES

Agricultural Wages in India, Directorate of Economics and Statistics, Ministry of Agriculture, Government of India, available at http://eands.dacnet.nic.in/AWIS.htm, viewed on May 2, 2022.

Centre for Policy Research (CPR) (2021), "Mahatma Gandhi National Rural Employment Guarantee Scheme (MGNREGS) GoI, 2020-21," Budget Briefs, Vol 12/Issue 1, New Delhi, available at https://cprindia.org/wp-content/uploads/2021/12/MGNREGS-2020-21-2-2.pdf, viewed on May 2, 2022.

Dasgupta, S., and Sudarshan, R. (2011), "Issues in Labour Market Inequality and Women's Participation in India's National Rural Employment Guarantee Programme," Working Paper No. 98, Policy Integration Department, International Labour Organization, Geneva.

Jose A. V. (2017), "Real Wages in Rural India", in Kannan, K. P., Mamgain, Rajendra, and Rustagi Preet (eds.) Labour and Development, Essays in Honour of Professor T. S. Papola, Academic Foundation, New Delhi.

Jose A. V. (2018), "Agricultural Wages in Indian States," The Indian Journal of Labour Economics, available at https://doi.org/10.1007/s41027-018-0111-x, viewed on May 2, 2022.

Krishnaji, N. (1971), "Wages of Agricultural Labour," Economic and Political Weekly, vol. VI, no. 39, Sep 25.

Periodic Labour Force Survey (PLFS) (2019-20), Ministry of Statistics and Programme Implementation, Government of India, available at https://www.mospi.gov.in/documents/ 213904/301563/Annual_Report_PLFS_2019_20m1627036454797.pdf/18afb74a-3980-ab83-0431-1e84321f75af, viewed on May 2, 2022.

Date of submission of manuscript: January 17, 2022 Date of acceptance for publication: March 20, 2022