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R E S E A R C H   N O T E S  
A N D   S T A T I S T I C S

## A Note on Recent Trends in Wage Rates in Rural India

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### INTRODUCTION

This is a short note on recent trends in wage rates for agricultural and rural labour, as reported by the Labour Bureau, Government of India, in *Wage Rates in Rural India (WRRI)*. There are two data sources relating to agricultural and non-agricultural wages in rural India. One is the well-known *Agricultural Wages in India (AWI)*, collected and reported by the Directorate of Economics and Statistics, Ministry of Agriculture; and the other is the one that is taken up here for study. *AWI* has a long history, and has been widely used for analysing long-term changes in the wage rates of agricultural and rural labour. However, since these data are collected through a local-level administrative institution, the *AWI* has several limitations, which pose substantial difficulties to users.<sup>1</sup> In addition, the *AWI* is presently available for up to 2004–05 only, and it is therefore not possible to look at recent trends in agricultural wages, and to measure any impact of macroeconomic growth or of schemes under the widely propagated NREGA (National Rural Employment Guarantee Act).

*WRRI* data, on the other hand, have been collected since 1986–87, although they were not published for some time, and the Labour Bureau took up the compilation of wage rate statistics from the agricultural year 1995–96. One of the merits of the *WRRI* data is that they are available for up to 2008–09, and hence are more appropriate to study recent trends. The purpose of this note is to review the *WRRI* data, and to find the salient features of recent trends in agricultural and non-agricultural wage rates.

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1 Chavan and Bedamatta (2006) discuss five such limitations of the *AWI* data: the definition of wage, reporting errors by untrained agencies, lack of standardization of data collection, small sample size, and frequent changes in centres/villages.

### *WRRI: METHODOLOGICAL PROBLEMS*

In accordance with the recommendation made by the Technical Working Group on Rural Retail Prices set up by the National Sample Survey Organization (NSSO), the wage rates of 18 agricultural and non-agricultural occupations have been collected every month, from a fixed set of 600 sample villages spread over 20 States, since 1986-87. The wage rate data are collected by the NSSO along with the rural retail price data in schedule No. 3.01 (R).

The primary data sources are village functionaries like the Panchayat Secretary, Progress Assistant, Patwari, and other village or block-level officials. The data on normal working hours and on wage rates for the reported working hours are collected sex-wise for each of the 18 selected occupations. The wage rates thus collected are then normalized for an eight-hour working day. In the next stage, the simple arithmetic average of these normalized daily wage rates is worked out for each State. The daily wage rates at the all-India level until 1999-2000 were derived by taking a simple average of State figures, but after 2000-01, by taking a simple average of all the sample villages. The all-India figures before and after 2000 are therefore not compatible.

Compared with the *AWI* data, the collection and compilation of the *WRRI* data are regarded as methodologically more reliable with respect to sampling method, in the fact that data are collected by trained NSS investigators and in the estimation of average wage rates. Nevertheless, there is a problem with the *WRRI* data that it shares with the *AWI* data, namely that the wage rates are not always reported from all the sample villages. This is for the following reasons:

- (i) the activity connected with the occupation was not undertaken in the village;
- (ii) the activity was out of season in the village; or
- (iii) the particular category of workers (i.e. men/women/children) was not engaged in that occupation.

This fact, that the number of sample villages may vary, causes a serious problem, particularly in a State where wage rates differ greatly across sample villages due to reasons such as closeness to urban centres. The State's average wage rate falls when no wage rates are reported from some of the high wage rate villages, and vice-versa. Fluctuation of the monthly wage rate is therefore not always real, but because of variations in the number of reporting sample villages. In an attempt to avoid this problem, State-wise average daily wage rates are not reported in the *WRRI* if the reporting number is less than five. However, this does not solve the problem. Irregular fluctuations can be observed in the movement of monthly wage rates in any occupation, particularly in small States like Himachal Pradesh and Jammu & Kashmir.

Varieties of crops are grown depending on the agro-climatic and economic conditions of a region. Agricultural operations are seasonal. An operation like sowing or

harvesting, for example, is performed for different crops in different seasons and in different regions, and, as a result, the mode and amount of payment may differ from one crop to the other. Nevertheless, it is common for wage rates to be reported throughout the year even if it is unlikely that a particular operation for a particular crop is performed every month. It is therefore plausible that seasonal fluctuations in wage rates, where they occur, reflect operations for different crops.

In addition, there are several outliers that are likely to be errors at some stage in the data collection or in the data entry.

In order to avoid (not solve) these problems, we took annual averages for the agricultural year (July to June) instead of monthly data. We worked out the arithmetic means only for those years for which data were available for four months or more. This was on the assumption that the average wage rate of certain operations in a particular State indicates operations for a set of crops or a crop mix in the State.

There is another problem that enters here. The demarcation of the agricultural year corresponds mainly with harvesting. Operations like ploughing, sowing, and transplanting of the kharif crop, however, are usually performed in the months of May–August. Thus, if we adopt the average based on agricultural year for these operations, it would reflect the wage rate for kharif crops of the succeeding year. Therefore we took the 12-month period from May to April to work out the average wage rates of ploughing, sowing, and transplanting.

In order to cover the major operations in farming and other important occupations in rural areas, and considering data availability, the wage rates of five agricultural operations, i.e. ploughing (male), sowing (male), transplanting (male and female), weeding (female), and harvesting (male and female), and of four rural labour occupations, i.e. carpenter (male), blacksmith (male), mason (male), and unskilled labour (male and female), are taken up for this study. Looking at the wage rates for various occupations allows us to examine the relationships among them. To compute real wage rates, the nominal wage rates are deflated by the consumer price index for agricultural labourers (CPIAL) and the consumer price index for rural labourers (CPIRL) (1986–87 = 100).<sup>2</sup>

### *LEVELS AND GROWTH OF REAL WAGES FOR AGRICULTURAL AND RURAL LABOURERS*

Table 1 indicates the State-wise real wage rates for major occupations from 1998–99 to 2008–09 in rural India. Based on these wage rates, we will look into some aspects of recent trends in wage rates of agricultural and rural labour.

<sup>2</sup> There have been debates as to whether the CPIAL reflects the actual price levels in rural India. The CPIRL, which stands for consumer price index for rural labourers, is published by the Labour Bureau.

Table 1 *State-wise real wage rates for major occupations in rural India*

(A) Ploughing (Male)		1998–99	1999–2000	2000–01	2001–02	2002–03	2003–04	2004–05	2005–06	2006–07	2007–08	2008–09
Andhra Pradesh	17.30	16.49	17.31	17.76	18.22	17.29	16.86	18.09	18.79	20.50	22.75	
Assam	20.32	20.18	20.25	20.91	19.60	20.21	19.56	18.78	18.71	19.65	18.96	
Bihar	14.48	14.89	16.77	17.99	18.55	18.67	18.54	18.33	18.31	18.62	18.99	
Gujarat	17.76	17.78	18.70	20.11	20.08	20.26	21.10	20.78	20.02	20.49	21.35	
Haryana	22.40	24.87	26.33	24.75	25.37	24.73	25.15	24.57	24.90	25.34	26.30	
Himachal Pradesh	31.15	31.45	32.76	34.28	33.70	36.91	39.53	37.69	38.98	44.41	48.16	
Jammu & Kashmir	29.15	28.68	33.96	35.47	35.50	35.11	34.94	34.55	32.38	31.29	29.91	
Karnataka	15.10	15.45	17.75	18.65	18.02	17.46	16.85	17.80	17.48	17.71	18.80	
Kerala	58.94	57.11	59.83	70.32	74.76	71.15	61.03	60.80	61.24	68.18	64.07	
Madhya Pradesh	14.85	14.60	14.38	15.44	15.59	15.81	15.63	14.82	14.15	14.89	15.52	
Maharashtra	16.83	17.70	19.49	19.43	19.46	18.88	17.80	17.68	18.17	18.95	19.46	
Manipur	18.35	18.55	20.40	20.46	20.25	22.22	22.87	21.93	21.16	24.68	26.96	
Meghalaya	17.54	17.05	16.74	16.56	19.74	22.59	22.52	22.08	20.91	20.11	18.61	
Orissa	14.09	12.50	15.34	17.81	18.41	17.18	17.81	17.71	16.66	15.89	16.39	
Punjab	21.33	21.44	na	na	na	na	na	na	na	na	na	
Rajasthan	25.37	24.43	26.57	28.78	27.54	25.70	26.66	23.52	22.29	25.99	26.07	
Tamil Nadu	30.24	34.81	37.06	37.62	34.81	33.49	32.47	32.00	32.41	34.57	32.73	

		1998-99	1999-2000	2000-01	2001-02	2002-03	2003-04	2004-05	2005-06	2006-07	2007-08	2008-09
(B) Sowing (Male)												
Tripura	14.81	16.09	16.55	18.31	18.49	22.88	20.74	22.85	23.76	22.29	23.70	
Uttar Pradesh	15.79	16.87	18.44	18.02	18.16	18.11	17.96	17.40	16.58	17.02	18.34	
West Bengal	20.03	23.00	23.92	23.73	25.44	26.26	24.92	27.22	27.76	27.49	26.48	
India	21.90	22.35	21.72	22.26	22.37	22.18	21.25	21.35	21.00	21.82	22.06	
Andhra Pradesh	13.53	12.88	14.18	14.46	14.78	14.57	14.98	15.15	16.27	18.12	18.83	
Assam	14.61	15.09	16.63	17.07	16.83	18.46	18.32	18.67	18.62	19.48	19.04	
Bihar	14.42	14.65	16.39	17.19	18.06	17.86	17.53	17.24	16.55	16.36	16.50	
Gujarat	16.95	17.03	17.75	18.96	18.97	19.17	19.61	18.72	18.48	18.66	18.94	
Haryana	21.26	24.41	25.03	25.04	25.30	23.72	24.08	25.16	24.67	24.73	26.29	
Himachal Pradesh	27.08	30.60	35.34	34.00	33.38	33.95	na	na	na	36.44	37.52	
Jammu & Kashmir	24.73	24.25	27.51	31.34	32.05	34.02	34.53	33.14	28.28	30.76	29.79	
Karnataka	15.06	15.39	16.85	17.30	16.51	15.88	15.39	14.56	16.12	16.03	16.44	
Kerala	43.89	48.39	52.70	55.15	53.31	51.26	53.04	51.68	54.36	53.08	52.60	
Madhya Pradesh	13.86	14.68	14.32	14.80	14.86	15.51	15.18	13.99	13.20	13.25	13.66	
Maharashtra	15.87	16.08	17.56	18.29	18.19	18.05	16.98	16.60	16.86	17.37	18.13	
Manipur	17.60	16.66	19.30	18.04	16.72	18.74	19.32	18.52	17.97	18.18	19.39	
Meghalaya	16.29	15.46	16.40	16.27	18.17	20.34	20.76	20.31	19.65	19.03	18.02	
Orissa	13.88	12.03	13.71	15.50	16.96	16.35	16.40	16.98	15.80	14.40	15.80	

(Continued)

Table 1 *State-wise real wage rates for major occupations in rural India-Cont'd*

	1998-99	1999-2000	2000-01	2001-02	2002-03	2003-04	2004-05	2005-06	2006-07	2007-08	2008-09
(B) Sowing (Male)											
Punjab	22.13	22.23	23.10	24.97	na	25.19	24.16	22.43	21.50	22.35	23.01
Rajasthan	24.57	24.00	27.20	30.80	29.05	25.47	25.80	24.09	20.54	22.03	21.65
Tamil Nadu	21.61	21.90	22.48	23.51	21.48	20.99	21.73	21.17	22.03	22.95	22.52
Tripura	14.81	16.09	16.42	18.31	18.43	21.08	20.74	22.85	23.76	22.27	23.70
Uttar Pradesh	15.47	16.37	17.98	17.79	17.64	17.63	17.41	16.60	15.76	16.71	17.80
West Bengal	14.17	15.43	16.87	17.09	17.64	16.81	16.62	17.85	18.57	18.29	18.19
India	19.22	19.84	19.52	19.87	19.58	19.63	19.40	19.17	18.95	18.93	19.32
(C) Transplanting (Male)											
	1998-99	1999-2000	2000-01	2001-02	2002-03	2003-04	2004-05	2005-06	2006-07	2007-08	2008-09
Andhra Pradesh	14.42	12.85	13.62	15.81	16.07	15.01	15.09	14.87	16.13	16.43	20.88
Assam	15.18	16.39	16.94	17.79	18.04	18.76	18.44	18.65	18.72	19.13	18.19
Bihar	13.47	12.72	14.83	15.33	16.86	16.71	16.53	15.81	14.63	14.37	15.03
Gujarat	14.08	13.71	13.38	15.19	15.15	15.07	15.11	14.34	14.03	14.24	14.20
Haryana	20.00	24.52	26.10	24.88	25.65	23.82	24.00	25.26	24.72	24.47	25.89
Himachal Pradesh	27.03	28.17	na								
Jammu & Kashmir	22.43	25.90	na	na	na	32.68	na	30.72	29.45	28.27	28.22
Karnataka	14.28	14.83	16.01	16.95	16.25	15.73	15.76	16.53	16.15	15.99	15.13

Kerala	29.82	na									
Madhya Pradesh	14.32	14.92	na	11.35	11.73	14.65	14.94	14.97	na	12.73	13.32
Maharashtra	16.13	16.36	20.11	20.40	19.55	19.80	19.14	18.08	17.64	17.06	16.32
Manipur	16.97	17.97	21.31	na	19.69	19.26	19.32	18.52	17.97	18.18	19.35
Meghalaya	16.60	15.88	15.78	16.34	19.61	22.82	23.42	na	20.02	na	18.61
Orissa	13.62	12.68	13.97	14.00	15.58	16.27	16.76	17.18	15.90	15.19	16.31
Punjab	22.13	23.41	23.87	24.06	25.20	25.43	24.94	23.08	22.64	20.98	24.04
Rajasthan	na										
Tamil Nadu	18.40	19.30	22.00	21.88	20.45	19.16	19.53	20.47	20.23	20.55	21.69
Tripura	14.81	16.09	16.42	18.31	18.43	22.09	20.74	22.87	23.76	22.27	23.70
Uttar Pradesh	15.04	15.92	16.78	17.66	16.91	16.59	16.55	16.27	15.36	15.99	16.21
West Bengal	13.72	15.23	16.95	17.15	17.54	16.81	16.77	17.97	19.07	18.89	18.95
India	17.44	17.79	17.09	17.63	17.90	17.95	18.16	18.30	17.96	17.79	17.84

## (D) Transplanting (Female)

	1998-99	1999-2000	2000-01	2001-02	2002-03	2003-04	2004-05	2005-06	2006-07	2007-08	2008-09
Andhra Pradesh	10.20	10.45	10.64	10.92	10.20	9.75	10.15	10.44	11.05	12.16	15.26
Assam	13.84	15.38	14.74	15.20	15.54	14.59	15.21	15.72	15.83	15.77	15.40
Bihar	12.20	11.24	13.71	14.34	15.54	15.42	15.60	14.96	13.75	13.40	13.63
Gujarat	13.23	13.21	12.59	14.82	14.53	14.69	14.71	14.05	13.64	13.54	13.77
Haryana	13.04	19.31	na	na	25.68	na	21.17	23.17	23.81	23.00	25.07

(Continued)

Table 1 *State-wise real wage rates for major occupations in rural India-Cont'd*

(D) Transplanting (Female)	1998-99	1999-2000	2000-01	2001-02	2002-03	2003-04	2004-05	2005-06	2006-07	2007-08	2008-09
Himachal Pradesh	24.91	27.60	na								
Jammu & Kashmir	na	na	na	na	na	na	na	na	na	na	na
Karnataka	11.24	11.38	12.50	13.12	12.40	11.69	12.00	12.35	11.90	12.09	12.31
Kerala	25.21	28.91	29.24	30.36	30.20	29.10	28.96	29.49	29.33	29.36	29.36
Madhya Pradesh	13.53	13.46	na	10.25	na	na	na	13.06	na	11.09	12.00
Maharashtra	13.74	12.10	13.53	13.84	13.44	13.53	12.49	12.30	12.44	11.59	10.84
Manipur	15.51	15.95	na	na	16.34	17.63	na	17.15	na	16.25	17.41
Meghalaya	13.01	11.83	11.11	10.88	13.16	15.03	15.42	14.07	14.46	14.15	12.29
Orissa	11.90	10.76	11.76	11.32	12.69	13.69	14.10	14.87	12.73	10.81	12.42
Punjab	16.87	18.14	na								
Rajasthan	na	na	na	na	na	na	na	na	na	na	na
Tamil Nadu	12.19	12.84	13.16	12.36	11.50	10.94	11.61	12.01	12.53	13.12	14.02
Tripura	11.47	13.54	14.48	na							
Uttar Pradesh	12.82	13.95	14.58	15.06	13.75	14.77	14.79	13.36	12.95	14.38	14.83
West Bengal	12.40	13.66	15.29	15.44	16.05	15.68	15.43	16.64	17.06	16.76	16.49
India	14.36	15.45	14.90	14.95	15.04	14.65	14.89	15.04	14.64	14.81	15.25

## (E) Weeding (Female)

	1998-99	1999-2000	2000-01	2001-02	2002-03	2003-04	2004-05	2005-06	2006-07	2007-08	2008-09
Andhra Pradesh	8.53	9.37	9.98	9.48	9.24	9.44	9.75	9.94	10.84	12.20	15.06
Assam	15.27	17.00	na	na	16.23	16.63	16.18	16.58	16.13	16.13	16.19
Bihar	10.86	10.99	12.32	13.19	14.37	14.29	13.09	13.15	12.05	12.08	13.07
Gujarat	14.72	14.62	14.93	16.16	15.41	15.14	15.67	15.33	14.51	15.11	15.69
Haryana	19.61	20.80	21.06	23.62	22.96	22.09	23.14	na	na	na	24.51
Himachal Pradesh	25.71	26.72	na								
Jammu & Kashmir	na	na	na	na	na	na	na	na	na	na	na
Karnataka	10.08	10.59	11.49	11.27	11.25	10.62	10.75	10.92	10.63	10.88	10.85
Kerala	25.70	30.81	31.53	32.55	30.88	29.21	29.06	29.47	29.33	29.52	30.58
Madhya Pradesh	11.05	11.21	11.19	11.77	11.56	11.50	11.19	10.72	10.42	10.34	10.50
Maharashtra	10.64	9.70	10.86	10.80	10.55	10.15	9.51	9.81	9.96	10.21	10.02
Manipur	13.82	12.82	na	na	15.00	17.59	17.74	16.77	16.32	16.33	17.44
Meghalaya	12.73	11.78	11.25	11.56	13.12	14.65	14.89	14.70	14.15	13.08	12.57
Orissa	11.22	10.59	11.86	11.60	15.01	12.52	14.58	12.96	14.20	na	12.19
Punjab	18.72	20.15	na								
Rajasthan	17.13	17.70	20.33	20.05	13.69	15.03	15.22	15.62	15.31	15.18	18.46
Tamil Nadu	10.98	12.24	12.20	11.96	11.18	11.37	11.62	12.36	12.78	13.00	14.03
Tripura	11.61	14.26	na								

(Continued)

Table 1 *State-wise real wage rates for major occupations in rural India-Cont'd*

(E) Weeding (Female)		1998-99	1999-2000	2000-01	2001-02	2002-03	2003-04	2004-05	2005-06	2006-07	2007-08	2008-09
Uttar Pradesh	11.91	13.26	15.08	14.26	14.76	15.33	14.04	13.82	13.58	14.39	15.11	
West Bengal	12.69	13.78	14.99	15.17	15.69	15.39	15.31	15.89	16.20	16.34	16.27	
All India	14.40	15.19	13.96	13.94	13.90	13.81	13.66	13.68	13.61	13.97	14.72	
(F) Harvesting (Male)		1998-99	1999-2000	2000-01	2001-02	2002-03	2003-04	2004-05	2005-06	2006-07	2007-08	2008-09
Andhra Pradesh	14.26	14.07	14.24	14.45	14.15	14.24	14.59	15.64	16.12	17.76	20.67	
Assam	16.05	15.79	16.51	17.30	17.10	19.24	18.67	18.12	19.24	18.99	18.39	
Bihar	12.75	13.18	15.30	15.87	17.76	17.63	17.31	16.74	15.48	15.07	15.69	
Gujarat	15.95	15.42	15.96	16.41	16.52	16.22	16.36	16.01	15.63	16.06	15.48	
Haryana	22.79	25.67	26.73	26.95	27.73	26.96	27.21	27.48	26.25	26.32	27.84	
Himachal Pradesh	27.29	27.40	na	na	na	32.81	na	32.94	31.14	36.20	36.58	
Jammu & Kashmir	26.46	26.03	29.93	32.53	31.91	33.16	31.90	31.70	29.16	29.29	30.26	
Karnataka	14.00	14.53	16.16	16.71	15.88	15.31	15.76	15.82	15.42	15.85	16.97	
Kerala	36.89	36.56	na	na	na	na	na	na	na	33.58	33.84	
Madhya Pradesh	12.79	13.28	13.81	14.51	14.06	14.15	14.32	13.63	12.56	13.17	13.48	
Maharashtra	14.36	15.38	17.32	17.69	17.88	17.17	16.64	16.17	16.73	17.35	17.62	
Manipur	17.22	17.14	na	na	17.44	19.70	19.54	18.46	17.97	18.62	19.61	

	1998-99	1999-2000	2000-01	2001-02	2002-03	2003-04	2004-05	2005-06	2006-07	2007-08	2008-09
Meghalaya	16.98	15.79	na	na	18.76	24.22	21.51	21.17	21.45	20.24	na
Orissa	14.05	12.26	13.96	14.09	16.13	15.46	16.01	16.48	14.16	14.15	16.77
Punjab	23.20	23.08	23.88	25.05	25.81	25.42	25.45	24.05	24.40	23.17	25.06
Rajasthan	22.18	21.04	25.04	25.05	19.43	20.49	19.13	19.79	17.48	19.06	22.83
Tamil Nadu	18.47	19.96	22.11	21.60	19.11	19.17	19.85	20.33	20.43	21.29	22.99
Tripura	14.90	16.01	16.68	18.51	18.46	22.82	21.02	23.27	23.47	22.11	24.14
Uttar Pradesh	16.22	17.39	17.69	17.55	17.88	18.17	17.96	17.06	15.75	16.84	17.44
West Bengal	13.73	15.36	16.89	16.84	17.07	16.77	16.74	17.83	18.33	18.30	18.45
All India	18.61	18.97	17.78	18.10	17.96	18.11	18.11	18.17	17.64	18.04	18.84
(G) Harvesting (Female)											
Andhra Pradesh	11.29	11.07	11.58	11.42	10.45	10.60	10.90	12.22	13.00	13.94	16.59
Assam	15.42	15.93	16.00	16.86	15.52	15.93	16.62	16.80	17.77	16.42	15.73
Bihar	11.63	11.90	13.69	14.56	16.25	16.22	16.00	15.62	14.23	13.96	14.64
Gujarat	15.45	15.08	15.37	15.87	16.25	15.96	16.15	15.52	14.93	15.54	15.08
Haryana	21.16	23.53	26.59	25.83	26.80	26.63	27.14	26.85	25.50	25.78	27.02
Himachal Pradesh	25.19	26.89	na								
Jammu & Kashmir	na	na	na	na	na	na	na	na	na	na	na
Karnataka	10.46	10.74	11.57	11.74	11.26	10.73	10.72	11.07	11.00	11.71	12.69
Kerala	24.58	27.55	27.22	29.39	29.06	28.74	28.83	28.90	28.68	29.20	30.05

(Continued)

Table 1 *State-wise real wage rates for major occupations in rural India-Cont'd*

(G) Harvesting (Female)		1998-99	1999-2000	2000-01	2001-02	2002-03	2003-04	2004-05	2005-06	2006-07	2007-08	2008-09
Madhya Pradesh	11.48	11.71	12.03	12.52	12.42	12.41	12.34	11.79	10.94	11.59	11.76	
Maharashtra	10.27	10.67	11.60	11.88	11.81	10.87	10.53	10.27	11.26	10.82	10.96	
Manipur	14.92	15.13	na	na	15.26	18.04	17.97	17.03	16.62	16.56	17.56	
Meghalaya	13.87	13.10	na	na	14.19	16.02	14.99	14.96	14.43	13.89	13.08	
Orissa	12.00	10.52	11.69	11.44	13.29	12.82	13.37	14.22	10.77	10.14	14.02	
Punjab	18.51	17.82	na	na	na	na	na	na	na	na	na	
Rajasthan	19.29	18.13	21.55	19.81	14.26	16.24	16.41	17.10	15.39	16.96	21.02	
Tamil Nadu	13.43	14.05	15.20	14.33	13.33	14.15	14.25	14.43	14.41	15.20	15.43	
Tripura	11.61	13.57	na	na	na	na	na	na	na	na	na	
Uttar Pradesh	14.34	15.13	15.52	15.09	15.01	16.29	15.58	14.32	13.47	15.24	15.57	
West Bengal	12.57	14.15	15.46	15.50	15.98	15.62	15.21	16.33	16.78	16.67	16.65	
All India	15.39	15.92	14.75	14.75	14.82	14.97	14.91	14.82	14.35	14.94	15.49	
(H) Carpenter (Male)		1998-99	1999-2000	2000-01	2001-02	2002-03	2003-04	2004-05	2005-06	2006-07	2007-08	2008-09
Andhra Pradesh	20.83	22.44	23.78	24.25	23.45	23.25	22.46	22.80	22.20	22.71	25.22	
Assam	26.34	25.51	25.72	28.01	30.18	29.38	30.49	31.22	31.30	31.90	32.03	
Bihar	22.56	22.88	26.69	28.35	31.46	31.09	31.07	29.32	27.27	27.39	27.71	

Gujarat	36.57	35.52	37.05	37.94	37.85	37.21	37.74	36.15	34.26	33.78	33.51
Haryana	39.45	44.69	44.87	41.28	42.66	41.46	40.01	39.71	37.46	38.59	41.36
Himachal Pradesh	47.83	48.79	54.15	55.00	55.61	54.24	55.05	55.57	54.83	56.78	55.38
Jammu & Kashmir	49.92	47.72	49.93	50.95	49.96	50.07	51.90	50.50	47.36	46.00	47.14
Karnataka	22.36	25.71	30.12	31.25	30.58	28.86	27.62	28.86	27.71	27.74	27.51
Kerala	52.53	54.23	54.29	56.58	58.08	56.94	56.02	57.29	59.55	59.57	60.19
Madhya Pradesh	23.08	24.33	24.13	24.66	24.85	25.23	25.16	24.28	23.03	23.13	22.02
Maharashtra	25.55	27.01	28.37	29.78	30.06	29.29	28.91	28.38	27.43	27.72	27.04
Manipur	23.62	23.05	23.94	25.52	26.84	27.31	27.27	25.59	24.98	29.51	30.62
Meghalaya	28.25	27.16	27.38	26.45	30.52	29.68	30.93	34.01	32.95	31.81	30.59
Orissa	25.96	24.62	28.90	31.09	33.54	32.63	33.80	34.24	32.05	31.12	30.70
Punjab	46.84	46.50	48.63	47.20	46.51	45.55	44.49	43.55	41.95	41.92	40.71
Rajasthan	42.28	41.73	43.16	47.72	47.00	46.81	42.75	38.03	36.80	37.07	39.25
Tamil Nadu	31.61	33.76	36.92	37.00	34.49	34.38	36.63	36.07	35.88	36.17	37.72
Tripura	23.59	22.64	24.19	27.01	29.36	30.21	30.65	32.46	32.15	30.03	31.32
Uttar Pradesh	29.33	31.30	34.15	34.13	34.66	34.57	34.58	33.49	31.55	31.23	31.47
West Bengal	22.66	24.92	27.39	28.25	28.56	27.09	26.39	27.39	27.96	27.69	26.81
All India	32.07	32.99	31.91	33.01	33.10	32.57	32.55	32.31	31.27	31.16	31.30

(Continued)

Table 1 *State-wise real wage rates for major occupations in rural India-Cont'd*

(I) Blacksmith (Male)		1998-99	1999-2000	2000-01	2001-02	2002-03	2003-04	2004-05	2005-06	2006-07	2007-08	2008-09
Andhra Pradesh	17.57	19.63	21.08	21.47	20.92	20.66	19.84	19.43	18.46	19.04	19.54	
Assam	16.86	16.86	17.20	19.27	20.60	22.09	22.28	21.95	21.24	20.03	19.18	
Bihar	20.07	20.17	23.04	24.66	26.90	26.09	25.83	24.56	22.67	22.40	23.75	
Gujarat	34.48	39.10	39.08	na								
Haryana	34.92	39.60	40.13	35.66	36.11	34.84	32.59	32.83	31.15	31.27	29.63	
Himachal Pradesh	41.22	43.48	48.26	51.23	50.32	49.26	51.00	47.29	50.21	54.85	52.96	
Jammu & Kashmir	36.80	32.82	33.66	35.85	36.06	36.51	35.95	36.83	34.73	35.42	33.02	
Karnataka	18.82	20.46	24.24	25.32	24.07	22.15	21.98	22.58	21.13	20.74	21.05	
Kerala	46.78	47.84	46.58	48.05	49.89	49.33	50.63	53.83	55.75	56.13	59.30	
Madhya Pradesh	19.32	20.49	20.23	20.46	20.36	21.05	20.60	20.23	19.53	19.03	18.47	
Maharashtra	21.48	22.10	24.12	24.59	24.19	23.97	24.22	24.27	22.47	22.70	22.08	
Manipur	17.42	17.06	18.77	21.02	22.54	22.81	22.66	21.70	21.34	21.67	21.49	
Meghalaya	21.05	18.73	19.58	20.56	22.28	23.66	23.14	23.24	22.18	22.87	22.48	
Orissa	24.63	20.83	22.11	27.59	29.98	27.08	26.38	25.84	22.56	22.27	21.34	
Punjab	45.67	45.97	47.68	45.50	45.84	44.38	43.55	44.70	41.91	40.36	38.59	
Rajasthan	26.64	23.13	30.13	na	na	na	na	na	na	24.60	23.52	
Tamil Nadu	28.36	30.59	32.78	32.67	30.19	29.92	31.99	32.26	31.30	29.30	30.00	

	1998–99	1999–2000	2000–01	2001–02	2002–03	2003–04	2004–05	2005–06	2006–07	2007–08	2008–09
(i) Mason (Male)											
Andhra Pradesh	24.76	26.32	28.03	28.35	27.97	28.53	27.93	28.30	27.70	30.30	33.46
Assam	26.61	26.41	26.61	29.81	30.66	31.63	32.83	33.46	33.16	33.09	32.72
Bihar	26.33	26.81	30.28	32.89	34.68	34.95	34.74	33.37	30.78	31.70	31.74
Gujarat	40.11	39.75	41.23	44.10	42.46	41.65	40.25	38.16	36.95	37.19	38.94
Haryana	43.53	47.71	49.23	49.22	48.92	47.94	48.46	48.17	46.97	47.33	48.91
Himachal Pradesh	48.36	48.84	53.79	54.12	54.62	54.85	55.33	54.15	52.99	55.02	52.49
Jammu & Kashmir	51.22	49.61	50.82	52.60	51.04	53.22	52.88	51.07	47.24	45.26	46.49
Karnataka	26.19	27.18	31.41	33.14	31.68	29.89	30.94	32.45	30.68	29.95	30.73
Kerala	51.24	52.75	53.22	55.90	55.39	53.88	54.51	57.02	57.84	59.15	59.87
Madhya Pradesh	28.94	29.48	29.06	29.69	29.60	30.35	29.84	29.03	27.48	27.82	26.92
Maharashtra	27.42	29.21	30.36	32.49	33.25	32.91	33.17	32.88	31.44	31.68	32.30
Manipur	24.20	23.71	24.43	26.15	26.39	27.03	26.97	25.76	25.31	na	36.20
Meghalaya	28.95	26.70	24.83	24.63	28.21	27.03	28.51	31.29	28.82	27.44	26.76
Orissa	28.35	27.61	31.36	33.66	35.85	35.64	35.94	34.96	32.98	31.68	32.05

(Continued)

Table 1 *State-wise real wage rates for major occupations in rural India-Cont'd*

(J) Mason (Male)		1998-99	1999-2000	2000-01	2001-02	2002-03	2003-04	2004-05	2005-06	2006-07	2007-08	2008-09
Punjab	46.32	47.38	48.88	47.42	46.92	45.88	44.96	43.56	42.01	41.34	40.40	
Rajasthan	45.11	44.53	46.77	46.98	46.18	48.05	43.97	40.29	39.49	40.88	42.68	
Tamil Nadu	34.18	36.02	39.42	40.10	37.99	37.55	38.48	38.64	39.01	39.98	42.76	
Tripura	23.59	22.62	24.13	27.01	28.59	30.59	30.65	32.46	32.22	30.08	31.08	
Uttar Pradesh	32.69	35.06	37.94	38.13	38.47	38.23	38.21	36.47	34.77	34.22	33.94	
West Bengal	23.09	25.80	28.74	29.33	30.02	29.11	28.13	28.67	29.25	28.60	27.87	
All India	34.06	34.89	34.76	35.88	35.80	35.64	35.50	35.12	33.99	34.22	34.70	
(K) Unskilled labour (Male)		1998-99	1999-2000	2000-01	2001-02	2002-03	2003-04	2004-05	2005-06	2006-07	2007-08	2008-09
Andhra Pradesh	13.44	14.40	14.94	14.78	14.22	14.19	13.99	14.33	14.44	16.18	19.13	
Assam	13.78	14.65	15.48	16.48	16.61	17.79	18.60	18.05	17.88	17.83	19.06	
Bihar	12.86	12.77	14.41	15.68	16.21	16.30	16.40	15.95	15.01	15.42	15.96	
Gujarat	14.98	14.11	14.51	15.54	15.71	15.48	14.62	13.78	13.61	14.60	15.21	
Haryana	22.78	23.71	26.53	26.61	26.28	25.60	24.81	24.89	24.25	25.49	27.14	
Himachal Pradesh	26.01	26.93	30.56	31.63	31.56	31.58	32.23	31.49	30.01	31.73	32.35	
Jammu & Kashmir	28.41	26.47	28.13	29.21	29.27	31.13	31.36	29.85	28.16	28.28	29.43	
Karnataka	12.22	12.08	13.63	13.95	13.79	13.27	13.36	14.15	13.64	13.89	14.54	

Kerala	38.42	39.96	39.84	42.06	42.57	42.16	41.57	41.93	43.32	43.63	46.18
Madhya Pradesh	11.36	11.96	11.62	11.51	11.66	11.72	11.42	11.13	10.40	10.63	10.99
Maharashtra	14.28	14.20	14.61	15.21	14.95	14.78	14.45	14.10	14.01	14.10	14.67
Manipur	15.33	14.44	15.32	15.66	15.32	16.90	16.97	16.09	15.62	16.15	17.40
Meghalaya	15.51	14.33	14.10	14.47	16.72	16.64	17.48	19.27	19.24	18.54	17.38
Orissa	12.89	11.98	13.38	13.64	15.12	14.81	14.83	15.43	15.16	14.65	15.92
Punjab	23.95	24.03	24.88	24.83	24.70	24.29	23.51	22.40	22.93	22.85	24.87
Rajasthan	20.28	20.61	22.10	22.54	21.68	22.27	20.39	19.13	18.59	19.95	22.58
Tamil Nadu	17.99	20.25	21.91	22.10	20.48	20.83	21.30	21.77	22.51	22.58	24.57
Tripura	16.03	16.34	17.12	18.87	19.28	21.63	21.70	23.90	24.19	22.56	25.30
Uttar Pradesh	16.00	16.52	17.68	17.56	17.49	17.61	17.51	16.57	16.03	16.87	18.34
West Bengal	13.05	14.45	15.89	16.13	16.41	15.98	15.62	16.38	16.24	16.12	16.52
All India	18.01	18.34	17.37	17.77	17.77	17.77	17.62	17.50	17.17	17.54	18.71

## (L) Unskilled labour (Female)

	1998-99	1999-2000	2000-01	2001-02	2002-03	2003-04	2004-05	2005-06	2006-07	2007-08	2008-09
Andhra Pradesh	9.81	10.17	10.56	10.85	10.56	10.46	9.93	10.37	10.49	11.70	13.72
Assam	12.27	12.70	13.48	13.86	13.81	13.21	13.28	12.16	12.50	13.65	13.99
Bihar	11.20	11.06	12.65	13.35	14.78	14.76	14.65	14.53	13.27	13.60	14.57
Gujarat	13.85	12.81	13.82	14.69	15.34	14.99	13.99	13.19	13.08	14.07	14.86
Haryana	19.90	21.15	24.50	24.65	24.50	24.43	23.83	23.99	23.01	23.68	26.65

(Continued)

Table 1 State-wise real wage rates for major occupations in rural India—Cont'd

(L) Unskilled labour (Female)	1998-99	1999-2000	2000-01	2001-02	2002-03	2003-04	2004-05	2005-06	2006-07	2007-08	2008-09
Himachal Pradesh	21.43	22.32	na	34.14							
Jammu & Kashmir	na	na	na	na	na	na	na	na	na	na	na
Karnataka	9.29	8.95	10.14	10.50	10.25	9.95	9.84	10.07	9.89	10.24	10.84
Kerala	25.47	27.87	27.72	30.54	29.90	30.27	31.36	32.63	33.91	33.44	34.06
Madhya Pradesh	10.10	10.65	10.12	9.94	9.86	9.92	9.68	9.52	8.95	9.21	9.47
Maharashtra	9.95	9.70	9.63	9.79	9.72	9.48	9.22	8.97	8.84	9.21	9.48
Manipur	13.64	13.50	13.70	14.62	14.74	15.82	15.88	14.69	14.16	14.13	15.31
Meghalaya	13.46	12.01	na	na	na	na	na	12.62	12.03	12.21	11.78
Orissa	11.37	10.75	12.03	12.19	13.49	12.88	12.58	12.95	12.57	12.10	13.48
Punjab	15.59	16.68	na	na	na	na	na	19.75	na	na	na
Rajasthan	17.65	17.43	19.25	19.48	18.78	19.54	18.26	17.13	16.96	17.84	20.60
Tamil Nadu	11.99	13.46	14.67	15.00	13.86	14.17	14.73	15.06	16.00	16.84	17.85
Tripura	14.56	15.68	na								
Uttar Pradesh	13.11	13.50	14.20	13.57	14.41	14.99	14.76	13.69	13.30	14.05	14.92
West Bengal	11.49	12.49	14.34	14.72	14.58	14.35	14.20	14.74	14.37	14.28	14.87
All India	14.19	14.46	12.99	13.26	13.36	13.28	13.06	13.13	12.86	13.29	14.21

Notes: The CPIAL and CPIRL (1986-87 = 100) are used as deflators.

na: not available.

Source: GOI, Wage Rates in Rural India, various issues.

### *Levels of Real Wages*

Regional variations in real wage rates are significant. When we look at men's real wage rates in 2008–09, we find that it is the highest in Kerala for most occupations, followed by the north-western States of Jammu & Kashmir, Himachal Pradesh, Punjab, and Haryana. These five States almost invariably have been at the top throughout the period. Wage rates are very low in Madhya Pradesh, Bihar, Orissa, Uttar Pradesh, and Karnataka. This pattern of regional variation is very similar to that noted by Chavan and Bedamatta (2006).

It is seen that the wage rate for ploughing in Kerala is so high (Rs 64.07) that it surpasses the wage rates for carpenter (Rs 60.19) and mason (Rs 59.87). The difference in the wage rate for ploughing between Kerala and the other States is more than Rs 15. In the wage rates for transplanting and harvesting, in which women also participate, on the other hand, the difference between Kerala and the other States is not much: less than Rs 5. A similar tendency can be observed in Tamil Nadu too. It is also noticed that West Bengal improved its ranking in 2008–09, compared to 1998–99.

Though women's wage rates are not available for Himachal Pradesh, Jammu & Kashmir, and Punjab, the ranking of States according to female wage rates is similar to that of males. At the bottom lie Maharashtra, Madhya Pradesh, Karnataka, Orissa, and Meghalaya. The female wage rate in Andhra Pradesh, which was at the bottom in the late 1990s, rose substantially by 2008–09. West Bengal and Tamil Nadu also improved their ranking during this period.

### *Growth of Real Wages*

Taking into account the implementation of NREGA 2005, the period under study is divided into two sub-periods: 1998–99 to 2004–05 and 2005–06 to 2008–09. Table 2 shows the average annual rate of growth of wages for major agricultural and rural labour occupations during the two sub-periods.

The annual growth rate of real wages differs significantly across regions, among occupations, and also between the sub-periods.

During the first sub-period (1998–99 to 2004–05), agricultural wage rates rose as a whole. There were some cases of negative growth, but they are not statistically significant. Not only high wage rate regions, like Kerala, Himachal Pradesh, and Jammu & Kashmir, but also low wage rate regions, such as Bihar, Gujarat, Orissa, Tripura, and West Bengal, recorded positive growth in men's wage rates for major agricultural operations. Wage rates did not rise or remained stagnant in some States, including Maharashtra, Madhya Pradesh, Tamil Nadu, and Karnataka.

Table 2 *Average annual rate of growth of wages for major occupations in rural India in per cent*

	Ploughing (Male)				Sowing (Male)				Transplanting (Male)				Transplanting (Female)			
	1998-99	2005-06	1998-99	2005-06	1998-99	2005-06	1998-99	2005-06	1998-99	2005-06	1998-99	2005-06	1998-99	2005-06	1998-99	2005-06
	2004-05	2008-09	to	to	2004-05	2008-09	to	to	2004-05	2008-09	to	to	2004-05	2008-09	to	to
	Growth rate	Growth rate	Growth rate	Growth rate	Growth rate	Growth rate	Growth rate	Growth rate	Growth rate	Growth rate	Growth rate	Growth rate	Growth rate	Growth rate	Growth rate	Growth rate
Andhra Pradesh	0.24	7.74**	2.12**	7.61**	2.18	10.37*	-0.69	12.35**								
Assam	-0.51	0.78	3.91**	1.05	3.27**	-0.54	0.82	-0.64								
Bihar	4.63**	1.23*	3.85**	-1.43	4.60**	-1.70	5.34**	-3.06								
Gujarat	3.03**	1.05	2.65**	0.45	1.87*	-0.15	2.41**	-0.69								
Haryana	1.06	2.22**	1.17	1.34	1.68	0.65	2.02									
Himachal Pradesh	3.79**	8.66**	3.87*													
Jammu & Kashmir	3.54**	-4.66**	6.54**	-2.35			-2.95*									
Karnataka	2.10	1.77	0.38	3.58	1.53	-2.75*	0.87	0.05								
Kerala	2.74	2.64	2.48*	0.30												
Madhya Pradesh	1.40**	1.89	1.50**	-0.68												
Maharashtra	1.06	3.30**	1.68	2.93**	3.10*	-3.41**	-0.25	-4.49*								
Manipur	3.62**	7.73	1.33	1.49			1.44									
Meghalaya	5.28**	-5.52**	4.92**	-3.90**	7.05**	4.14	-4.27									
Orissa	5.44**	-2.81	4.73**	-3.08	4.39**	-2.02	3.81**	-7.03								

	Harvesting (Male)						Harvesting (Female) Weeding (Female)						Carpenter (Male)					
	1998-99	2005-06	1998-99	2005-06	1998-99	2005-06	1998-99	2005-06	1998-99	2005-06	1998-99	2005-06	1998-99	2005-06	1998-99	2005-06	1998-99	2005-06
	to	to	to	to	to	to	2004-05	2008-09	2004-05	2008-09	2004-05	2008-09	2004-05	2008-09	2004-05	2008-09	2004-05	2008-09
	Growth	Growth	Growth	Growth	Growth	Growth	rate	rate	rate	rate	rate	rate	rate	rate	rate	rate	rate	rate
Punjab	4.62	1.18	-2.50				2.06**		0.47									
Rajasthan	1.03	-0.41	2.27	0.33	1.89	-2.15*												
Tamil Nadu	0.26	5.95**	0.45	6.28**	0.43													5.10**
Tripura	6.52**	1.73*	2.67	1.34	0.28													
Uttar Pradesh	1.83*	2.48*	0.41	2.97*	1.50	3.50**												4.16
West Bengal	3.51**	-0.92	0.22	-0.87	0.54													-0.45
All India	1.36																	
Andhra Pradesh	0.31	9.33**	-1.05	0.88**	1.22	13.65**												3.27
Assam	3.16**	0.32	0.70	-2.77														3.15**
Bihar	5.88**	-2.22	6.24**	-2.14	4.43**	-0.17												0.96*
Gujarat	0.76*	-0.74	1.07**	-0.45	1.03	1.10												-1.65
Haryana	2.38**	0.41	3.58**	0.30	2.51**													-2.42*
Himachal Pradesh		4.65																1.52
Jammu & Kashmir	3.96**	-1.35																0.25
																		-2.36

(Continued)

Table 2 *Average annual rate of growth of wages for major occupations in rural India in per cent—Cont'd*

	Harvesting (Male)			Harvesting (Female) Weeding (Female)			Carpenter (Male)		
	1998-99	2005-06	1998-99	2005-06	1998-99	2005-06	1998-99	to	2005-06
	to 2004-05	2008-09	to 2004-05	2008-09	to 2004-05	2008-09	to 2004-05	to 2008-09	to 2008-09
	Growth rate	Growth rate	Growth rate	Growth rate	Growth rate	Growth rate	Growth rate	Growth rate	Growth rate
Karnataka	1.58	2.37	0.17	4.73*	0.64	0.06	3.14		-1.42
Kerala			2.24**	1.35	0.86	1.18	1.28**		1.48
Madhya Pradesh	1.73**	0.14	1.30**	0.50	0.44	-0.71	1.29**		-2.89*
Maharashtra	2.47	2.94**	0.47	1.57	-0.98	0.91	2.11**		-1.35
Manipur							3.16**		7.05
Meghalaya					3.78*	-5.47**	1.99*		-3.54**
Orissa	3.57**	0.52	3.03*	-1.03	4.84**		5.37**		-3.56*
Punjab	1.96**	0.72					-0.86		-2.24**
Rajasthan	-2.68	5.15	-3.99	7.16	-3.85	4.93	1.25		1.02
Tamil Nadu	-0.04	4.10*	0.22	2.54*	-0.23	3.96**	1.46		1.42
Tripura	6.58**	0.51					5.56**		-1.76
Uttar Pradesh	1.44**	1.34	1.30*	3.74	2.72*	3.27	2.53**		-1.97
West Bengal	2.79*	1.00	2.86*	0.52	2.96**	0.80	2.38		-0.73
All India		1.32		1.74		2.47			-0.98

	Blacksmith (Male)		Mason (Male)		Unskilled Labour (Male)		Unskilled Labour (Female)	
	1998-99	2005-06	1998-99	2005-06	1998-99	2005-06	1998-99	2005-06
	to 2004-05	to 2008-09	to 2004-05	to 2008-09	to 2004-05	to 2008-09	to 2004-05	to 2008-09
	Growth rate	Growth rate	Growth rate	Growth rate	Growth rate	Growth rate	Growth rate	Growth rate
Andhra Pradesh	1.64	0.48	1.86**	5.93	0.15	9.81*	0.34	9.48*
Assam	5.56**	-4.64**	4.04**	-0.69**	4.85**	1.60	1.21	5.08**
Bihar	5.09**	-1.13	5.35**	-1.21	4.76**	0.30	5.49**	0.32
Gujarat			0.48	0.67	0.69	3.67*	1.60	4.31*
Haryana	-2.03	-3.03*	1.16	0.53	1.43	3.08	2.96*	3.44
Himachal Pradesh	3.32**	4.28	2.33**	-0.56	3.55**	1.37		
Jammu & Kashmir	0.76	-3.08	0.86*	-3.25	2.36**	-0.38		
Karnataka	2.21	-2.29	2.49	-1.88	1.67	0.98	1.41	2.55
Kerala	1.31**	2.97**	0.96*	1.69**	1.46**	2.96**	3.09**	1.14
Madhya Pradesh	0.90*	-2.99**	0.60**	-2.14	-0.08	-0.17	-1.06*	0.15
Maharashtra	1.88**	-2.74	3.21**	-0.46	0.49	1.24	-0.95**	2.04
Manipur	5.54**	-0.15	2.38**		2.21**	2.69	3.02**	1.22
Meghalaya	3.15**	-0.69	0.38	-5.18**	2.96	-3.47*		-1.92
Orissa	3.70	-5.87*	4.84**	-3.01	3.45**	0.60	2.78**	0.84

(Continued)

Table 2 *Average annual rate of growth of wages for major occupations in rural India in per cent—Cont'd*

	Blacksmith		Mason		Unskilled Labour		Unskilled Labour	
	(Male)		(Male)		(Male)		(Female)	
	1998–99	2005–06	1998–99	2005–06	1998–99	2005–06	1998–99	2005–06
to	to	to	to	to	to	to	to	to
2004–05	2008–09	2004–05	2008–09	2004–05	2008–09	2004–05	2008–09	2008–09
Growth rate	Growth rate	Growth rate	Growth rate	Growth rate	Growth rate	Growth rate	Growth rate	Growth rate
Punjab	-0.90*	-4.79**	-0.69	-2.42**	-0.15	3.10		
Rajasthan			0.22	2.07	0.54	5.67	1.09	6.04
Tamil Nadu	0.84	-2.84	1.43	3.28*	1.77	3.66*	2.37	5.62**
Tripura	9.90**	1.43	5.57**	-1.99	5.68**	1.00		
Uttar Pradesh	2.45**	-2.90**	2.34**	-2.32*	1.39**	3.56	2.07**	3.12
West Bengal	0.89	1.46*	3.13*	-1.08	2.76*	0.18	3.32**	0.19
All India		-2.47**		-0.29		0.18		2.71

Note: (1) Since the all-India averages in 1998–99 and 1999–2000 are simple arithmetic means of the figures for 20 States and hence not compatible with the later years, the growth rate is not computed here.

(2) \* and \*\* stand for significance level at 10 and 5 per cent, respectively.

Source: GOI, *Wage Rates in Rural India*, various issues.

Female wage rates rose markedly in Bihar, Orissa, West Bengal, and Meghalaya, while they declined or remained stagnant in Karnataka, Maharashtra, Andhra Pradesh, Tamil Nadu, and Rajasthan. There is no correlation between the growth rate and initial wage rate for agricultural operations.

Wage rates for non-agricultural occupations grew not only in the States that recorded a high growth rate for agricultural wages, but also in the States where agricultural wages remained stagnant or declined, namely Karnataka, Maharashtra, Uttar Pradesh, and West Bengal. On the other hand, wage rates for non-farm occupations declined or remained stagnant in Punjab, Haryana, Jammu & Kashmir, Gujarat, Rajasthan, and Madhya Pradesh. Thus, an inverse relation can be observed between the growth rate and initial level of wages for non-agricultural occupations, which led to a narrowing of the regional wage gap.

During the second sub-period (2005–06 to 2008–09), most of the estimated growth rates are statistically insignificant due to the smaller number of samples and a large fluctuation inbetween. It is therefore quite difficult to find any definite trends, except in a few cases. One exception is Andhra Pradesh, where a rapid growth of agricultural wages was recorded. The wage rates for all farm operations and non-farm occupations in Andhra Pradesh rose very rapidly, at more than 10 per cent a year. Tamil Nadu also recorded an improvement in agricultural wage rates, though not as fast as in Andhra Pradesh. In Maharashtra, agricultural wage rates grew for all operations except transplanting. On the other hand, Jammu & Kashmir and Meghalaya recorded negative growth in ploughing and sowing.

According to the growth rates based on the wage rates of the initial and terminal years, 13 States, including Andhra Pradesh, Haryana, Himachal Pradesh, Karnataka, Kerala, Maharashtra, Manipur, Punjab, Rajasthan, Tamil Nadu, Tripura, Uttar Pradesh, and West Bengal, recorded positive growth for a majority of farm operations. The remaining 7 States recorded negative growth rates for a majority of farm operations.

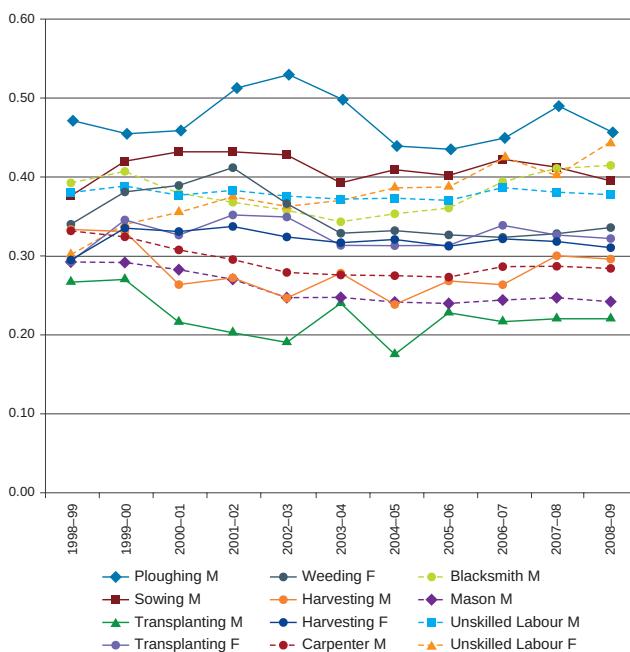
In contrast to the first sub-period, the second sub-period saw negative growth in wage rates for non-agricultural occupations in many States. The growth rates of wages for carpenters, blacksmiths, and masons were negative in most of the States, and about a half of these are statistically significant. On the other hand, the growth rates for both male and female unskilled labour were positive in most of the States, though only a few are statistically significant. The growth rates of unskilled labour wages, based on the wage rates of the initial and terminal years, were positive for all States other than Madhya Pradesh and Meghalaya. It is noteworthy that the wage rates for female unskilled labour grew more rapidly than that for males in Andhra Pradesh, Assam, Gujarat, Haryana, Karnataka, Rajasthan, and Tamil Nadu.

How has the regional variation changed? Figure 1 shows the coefficient of variation (CV) of wage rates for major occupations. Note that the CV depends on availability of Kerala data. The CV of wage rate for ploughing corresponds closely to the fluctuation of the wage rate in Kerala, and the lower CVs for transplanting and harvesting than for ploughing and sowing are mainly due to non-availability of Kerala data. In spite of this limitation, we can safely say that regional disparities in wage rates narrowed in the first sub-period, that is, from 1998–99 to 2004–05. By contrast, the CVs ceased to decline, and the CVs of wage rates for blacksmith and female unskilled labourer rose during the second sub-period. In other words, regional disparities in non-farm wage rates widened from 2005–06 to 2008–09.

### WAGE DIFFERENTIALS BETWEEN AGRICULTURAL LABOUR AND RURAL NON-FARM LABOUR

One of the merits of the WRRI data is that they allow us to analyse the wage differentials between various occupations. In order to examine the pattern of wage differentials between agricultural labour and rural non-farm labour, the ratio of the wage rate for mason and unskilled labourer to the wage rate for ploughing and harvesting for males, and the ratio of the wage rate for unskilled labourer to weeding and harvesting for females, are worked out. A three-year average is taken for comparison of the beginning and end of the period under study.

Figure 1 *Change in regional variation of wage rates*



Source: GOI, *Wage Rates in Rural India*, various issues.

Table 3 *Wage differentials between agricultural labour and rural non-farm labour*

	Male 1998–99 to 2000–01				Male 2006–07 to 2008–09				Female 1998–99 to 2000–01				Female 2006–07 to 2008–09			
	Mason/ Ploughing	Unskilled/ Ploughing	Mason/ Harvest	Unskilled/ Harvest	Mason/ Ploughing	Unskilled/ Ploughing	Mason/ Harvest	Unskilled/ Harvest	Unskilled/ Weeding	Unskilled/ Harvest	Unskilled/ Weeding	Unskilled/ Harvest	Unskilled/ Weeding	Unskilled/ Harvest	Unskilled/ Weeding	
Andhra Pradesh	1.55	0.84	1.86	1.00	1.47	0.80	1.68	0.91	1.10	0.90	0.94	0.83				
Assam	1.31	0.72	1.65	0.91	1.73	0.96	1.75	0.97	0.79	0.81	0.82	0.80				
Bihar	1.81	0.87	2.02	0.97	1.69	0.83	2.04	1.00	1.02	0.94	1.11	0.97				
Gujarat	2.23	0.80	2.56	0.92	1.83	0.70	2.40	0.92	0.91	0.88	0.93	0.92				
Haryana	1.91	0.99	1.87	0.97	1.87	1.00	1.78	0.96	1.07	0.92	1.00	0.94				
Himachal Pradesh	1.58	0.88	1.84	1.02	1.22	0.72	1.54	0.91	0.83	0.84	na	na				
Jammu & Kashmir	1.65	0.90	1.84	1.01	1.49	0.92	1.57	0.97	na	na	na	na				
Karnataka	1.76	0.79	1.90	0.85	1.69	0.78	1.89	0.87	0.88	0.87	0.96	0.88				
Kerala	0.89	0.67	1.43	1.07	0.91	0.69	1.75	1.32	0.92	1.02	1.13	1.15				
Madhya Pradesh	2.00	0.80	2.19	0.88	1.85	0.72	2.10	0.82	0.92	0.88	0.88	0.81				
Maharashtra	1.61	0.80	1.85	0.92	1.69	0.76	1.85	0.83	0.94	0.90	0.91	0.83				
Manipur	1.26	0.79	1.40	0.87	1.27	0.68	1.64	0.88	1.02	0.91	0.87	0.86				
Meghalaya	1.57	0.86	1.64	0.89	1.39	0.93	1.33	0.88	1.07	0.94	0.91	0.87				

(Continued)

Table 3 *Wage differentials between agricultural labour and rural non-farm labour-Cont'd*

	Male 1998-99 to 2000-01			Male 2006-07 to 2008-09			Female 1998-99 to 2000-01			Female 2006-07 to 2008-09		
	Mason/ Ploughing	Unskilled/ Ploughing	Mason/ Harvest	Unskilled/ Harvest	Mason/ Ploughing	Unskilled/ Ploughing	Mason/ Harvest	Unskilled/ Harvest	Weeding	Harvest	Weeding	Harvest
Orissa	2.08	0.91	2.17	0.95	1.98	0.93	2.15	1.01	1.01	1.00	0.96	1.09
Punjab	2.22	1.14	2.03	1.04	na	na	1.70	0.97	0.83	0.89	na	na
Rajasthan	1.79	0.82	2.00	0.92	1.66	0.82	2.07	1.03	0.99	0.92	1.13	1.04
Tamil Nadu	1.07	0.59	1.81	0.99	1.22	0.70	1.88	1.08	1.13	0.94	1.27	1.13
Tripura	1.48	1.04	1.48	1.04	1.34	1.03	1.34	1.03	1.17	1.20	na	na
Uttar Pradesh	2.07	0.98	2.06	0.98	1.98	0.99	2.06	1.02	1.01	0.91	0.98	0.95
West Bengal	1.16	0.65	1.69	0.94	1.05	0.60	1.56	0.89	0.92	0.91	0.89	0.87
India	1.57	0.81	1.87	0.97	1.59	0.82	1.89	0.98	0.96	0.90	0.95	0.90

Source: GOI, *Wage Rates in Rural India*, various issues.

When compared to agricultural wages, the wage rate for mason is seen to be much higher than the wage rate for ploughing in all States except Kerala, where the latter wage rate is higher than the former. The wage rate for mason is almost double the wage rate for ploughing in Gujarat, Orissa, and Punjab. The difference is comparatively small in West Bengal and Tamil Nadu.

The wage rate for unskilled labourer is generally lower than the wage rate for ploughing, though the former is higher in Punjab, and both are almost at the same level in Haryana, Tripura, and Uttar Pradesh. When the wage rates for unskilled labourer and harvesting are compared, both are seen to be at almost the same level in all States except in Karnataka, Madhya Pradesh, Maharashtra, and Manipur, where the wage rate for unskilled labourer is lower by more than 10 per cent.

For female workers, the wage rate for unskilled labourer is almost at the same level as the wage rate for harvesting and weeding, except in Kerala and Tamil Nadu.

It is thus observed that the wage rate for a skilled labourer such as a mason is much higher than an agricultural wage, but the wage rates for unskilled labourers, both male and female, are at almost the same level as agricultural wages.

#### *MALE-FEMALE WAGE DIFFERENTIALS*

The WRRI data allow us to compare the wage gap between men and women for the same occupation. The ratios of female to male wage rates for transplanting, harvesting, and unskilled labour are worked out. To compare with the female WPR (work participation rates) estimated by the Employment and Unemployment survey of the NSS (National Sample Survey), three-year averages are taken for 1998–99 to 2000–01 and 2003–04 to 2005–06. To see recent changes, the three-year average for the end of the period is added.

First, transplanting and harvesting. There is a substantial regional variation in the male–female wage disparity. The ratios indicate that the male–female wage disparity is relatively large in Andhra Pradesh, Karnataka, Kerala, Maharashtra, Meghalaya, and Tamil Nadu, while it is rather small in Bihar, Gujarat, Haryana, Manipur, and West Bengal. Male–female wage disparities have persisted over the last 10 years.

The regional pattern of the male–female wage gap for unskilled labour is similar to that for transplanting and harvesting: it is larger in Andhra Pradesh, Assam, Karnataka, Kerala, Maharashtra, Meghalaya, and Tamil Nadu than elsewhere.

Excluding the exceptional cases of Gujarat and Himachal Pradesh, the coefficient of correlation between the female–male wage differential for harvesting and female WPR is 0.66 for 1999–2000 and 0.65 for 2004–05, while that for transplanting is 0.61 for 1999–2000 and 0.73 for 2004–05. The male–female disparity is higher in States where female WPR is higher.

Table 4 *Change in female-male wage ratios*

	1999–2000		1998–99 to 2000–01		2004–05		2003–04 to 2005–0606		2006–07 to 2008–09		
	Female WPR	Harvesting WPR	Trans- planting	Unskilled Labour	Female WPR	Harvesting	Trans- planting	Unskilled Labour	Harvesting	Trans- planting	Unskilled Labour
Andhra Pradesh	478	0.80	0.77	0.71	483	0.76	0.67	0.72	0.72	0.80	0.72
Assam	151	0.98	0.91	0.88	209	0.88	0.82	0.71	0.84	0.88	0.73
Bihar	173	0.90	0.91	0.87	199	0.93	0.94	0.90	0.93	0.93	0.89
Gujarat	413	0.97	0.95	0.93	427	0.98	0.98	0.96	0.96	0.97	0.97
Haryana	202	0.95	0.69	0.90	317	0.99	0.91	0.96	0.96	0.97	0.95
Himachal Pradesh	471	0.95	0.95	0.79	506	na	na	na	na	na	na
Jammu & Kashmir	327	na	na	na	267	na	na	na	na	na	na
Karnataka	380	0.73	0.78	0.75	459	0.69	0.75	0.73	0.77	0.73	0.74
Kerala	238	0.72	0.93	0.69	256	na	na	0.75	na	0.87	0.76
Madhya Pradesh	382	0.88	0.92	0.88	396	0.87	0.88	0.85	0.89	0.87	0.86
Maharashtra	434	0.69	0.75	0.68	474	0.63	0.67	0.64	0.68	0.64	0.64
Manipur	253	0.87	0.84	0.91	351	0.92	0.91	0.93	0.91	0.90	0.89
Meghalaya	418	0.82	0.74	0.87	478	0.69	0.64	0.71	0.71	0.66	0.65

Orissa	299	0.85	0.85	0.89	322	0.84	0.85	0.85	0.76	0.77	0.83
Punjab	280	0.78	0.76	0.66	322	na	na	0.84	na	na	na
Rajasthan	388	0.86	na	0.86	407	0.84	na	0.89	na	0.90	0.91
Tamil Nadu	430	0.70	0.64	0.67	461	0.72	0.58	0.69	0.64	0.70	0.73
Tripura	73	0.79	0.83	0.92	85	na	na	na	na	na	na
Uttar Pradesh	201	0.88	0.87	0.81	266	0.87	0.87	0.84	0.89	0.89	0.83
West Bengal	160	0.92	0.90	0.88	178	0.92	0.93	0.90	0.88	0.91	0.89
India	299	0.83	0.85	0.78	327	0.82	0.82	0.75	0.83	0.82	0.76

Note: WPR refers to female workers per 1,000 females.

Source: GOI, *Wage Rates in Rural India*, various issues.

Table 5 *Comparison between the average wage paid under MGNREGA and the wage rate for unskilled labour in WRRI*

	MGNREGA	Wage rate for unskilled labour, WRRI	
	Average wage paid	Male	Female
Andhra Pradesh	na	86.90	61.92
Assam	77.58	83.32	61.28
Bihar	87.97	68.97	62.72
Gujarat	81.90	68.19	66.57
Haryana	138.74	128.16	124.01
Himachal Pradesh	101.08	133.01	142.29
Jammu & Kashmir	71.67	127.14	
Karnataka	78.97	63.92	47.59
Kerala	123.99	198.70	147.12
Madhya Pradesh	77.19	48.97	42.01
Maharashtra	89.92	66.48	42.83
Manipur	81.35	67.64	59.68
Meghalaya	69.98	82.41	56.21
Orissa	88.19	65.86	55.65
Punjab	114.83	119.14	
Rajasthan	84.35	104.03	93.81
Tamil Nadu	71.99	106.07	77.04
Tripura	86.88	102.13	
Uttar Pradesh	99.84	82.31	67.37
West Bengal	81.57	69.93	62.95

Source: <http://nrega.nic.in/netnrega/home.aspx>, Ministry of Rural Development; and GOI, *Wage Rates in Rural India*, various issues.

#### COMPARISON WITH AVERAGE WAGE RATES IN MGNREGA

The fixed wage and average wage paid under the Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA) in 2008–09 are reported for each State on the website of the MGNREGA.<sup>3</sup> The MGNREGA average wage is calculated by dividing the total wage bill by total employment. Wage rates under the MGNREGA are supposed to be the same for men and women, but the average wage paid is much lower than the fixed wage in many States.

<sup>3</sup> Home page of the MGNREGA, <http://nrega.nic.in/netnrega/home.aspx>, viewed on 22 March 2011.

The average wage paid under MGNREGA is much higher than the wage rates for male unskilled labour in ten States, and it is lower than the male wage rates but higher than the female wage rates in Assam and Meghalaya. Surprisingly, the average wage paid under MGNREGA is lower than the wage rates for female unskilled labour in Himachal Pradesh, Kerala, Rajasthan, and Tamil Nadu.

It is assumed that creation of employment opportunity in manual works at a comparatively higher wage rate under MGNREGA will cause the market wage rate, in particular the wages for female unskilled labour, to rise. If so, a positive correlation is expected between the ratio of MGNREGA average wage to market wage rate, on the one hand, and the growth rate of female unskilled labour wages, on the other. The correlation coefficient between the two indicators was  $-0.37$  in 15 states for which data are available, while it was  $-0.88$  in 8 states where the wage rate grew faster than 2 per cent per annum. The growth of wage rate for female unskilled labour was slower in States where the average wage paid under MGNREGA is higher than the market wage rate.

If the MGNREGA has had a positive impact on wage rates in agriculture, that impact is yet to be seen in the data published by the Labour Bureau in the *WRRI* series.<sup>4</sup>

### CONCLUSIONS

In spite of various limitations, the *WRRI* provides a useful data-set with which to analyse recent trends in agricultural and non-agricultural wages. The annual real wage rates for ploughing, sowing, transplanting, weeding, and harvesting for agricultural labour, and that of carpenter, blacksmith, mason, and unskilled labour, are tabulated for 1998–99 to 2008–09 using the CPIAL and CPIRL (1986–87 = 100). During the first sub-period (1998–99 to 2004–05), agricultural and rural non-farm wage rates rose in most States. Not only high wage rate regions, but also low wage rate regions recorded positive growth in real wage rates, and regional disparities in terms of coefficients of variation decreased. The second sub-period (2005–06 to 2008–09), on the other hand, saw a decline in real wage rates in most occupations and in many States, except for a few like Andhra Pradesh. This was partly due to the fact that nominal wage rates grew fast, but the deflator, i.e. CPIAL and CPIRL, rose much faster. A comparison between the real wage rates of agricultural and non-farm labour shows that the wage rate for unskilled labour is at a level almost similar to that for agricultural labour. It is also noticed that the male–female wage gap in agricultural labour is correlated to the female worker–population ratio. Thus, in spite of growing agricultural production and implementation of MGNREGA 2005,

<sup>4</sup> Chandrasekhar and Ghosh (2011) have recently argued that the MGNREGA has had a favourable impact on female wages, leading to a reduction in the gender gap. The above discussion confirms that the wage rate for female unskilled labour grew faster during the second sub-period. I believe, however, that further detailed analysis is required to see if the MGNREGA is the cause for this rise in the female wage rate.

the real wages of agricultural labourers and non-farm manual labourers have not yet shown any rise, and regional wage gaps remained stagnant or even widened for female unskilled labourers.

**Keywords:** agricultural wages in India, wage rates for rural labourers, MGNREGA, male-female wage gap

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