

# Gender Inequality and Trend Analysis of Wages in the Selected Agricultural Occupations: A Study of Indian Agricultural Workers

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## Abstract

This research paper examined the gender inequalities in the agricultural occupations by using national representative data on wages related to twelve occupations for the period from 2013-14 to 2020-21. Firstly, we have examined that wages over the period have increased. Secondly, there is a considerable growth rate found both for male and female workers, but the female growth rate is higher for female workers. Further, we have examined the wage gap and found that there exists a considerable wage gap for male and female workers but over the period this gap is declining except for three male-dominated agricultural occupations.

**Key words:** Gender inequality, Wage inequality, Agricultural occupations, India, Wage trend analysis

In India, most labourers and their families work on agricultural related work, and they depend on agricultural wages for their livelihood. As per the latest PLFS report, the total workforce employed in the agricultural sector has increased from 42.5 per cent in 2018-19 to 45.6 per cent in 2019-20 [9]. The green revolution has boosted agricultural growth, and studies on the trends in agricultural wages assumed that it has created a significant change in Indian agricultural productivity. Structural change in employment has been slow, particularly in agriculture, and agriculture's share in income has declined faster than employment has transitioned. This shift requires us to focus on the trends in agricultural wages because most agricultural labourers in rural India depend on farm work and agricultural wages for their livelihoods-people in rural India are poor and have few assets and employment opportunities. A lot of research has been conducted on the rising trend of labour scarcity and wages, and also on the factors affecting rising wages, especially after the launch of the MGNREGA on 1 April 2008 [1]. Rising prices have been accomplished by increasing wages [7]. The impact of Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA) on agricultural wages has been studied and found that the real wages of farm and non-farm workers exhibit upward trends [5-6], [8], [12]. The rising trends in wages are a significant indicator of the well-being of the agricultural-dependent population, but dimensions such as sectors (farm and non-farm), operations (ploughing, sowing, and harvesting), and gender (male and female) need to be explored, and the spatial dimension of wages to needs investigation given the country's large size and the variation in economic development. We analyze the all-India data on

agricultural wages for selected agricultural occupations. The variation in agricultural wages is influenced by non-agricultural factors such as the presence of non-farm employment, trade unions, and per capita income [11].

The temporal movements and spatial and gender disparities were observed in the wage rates [4]. The gender and location disparity in wages is significant from the viewpoint of balanced growth and social justice. Labour is one of the main components of crop production and agricultural-related products, and labour cost makes up 40% of the total production cost [5], [10]. Therefore, an increase in the production cost leads to inflationary pressure on the economy and raises market prices. The levels and trends in agricultural wages of male and female labourers in the major states of India and finds that inter-state differences have been widening over time [2], [4]. This study extends from the period 2013-14 to 2020-21 and examines the trends in agricultural wages across agricultural occupations and gender. This study firstly explained the growth rate in nominal wages of both males and females in selected agricultural occupations, then it will explain the female to the male wage gap and at last this study is explained the unadjusted wage gap for male and female workers in selected agricultural occupations.

## MATERIALS AND METHODS

The principal source of data used in this study has been agriculture wages in India (AWI) annually published by the directorate of Economics and Statistics, Ministry of Labour and Employment, Government of India.

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Nationally representative monthly wages data for both Men and Women examined on as many as 12 occupations in the present study including Watering and Irrigation Workers, sowing workers, Ploughing/Tilling workers, Plant protection workers, Picking, packing labours, Horticulture workers (including nursery growers), Animal husbandry workers, Loggers and woodcutters, General agricultural labour, Harvesting/Winnowing/Threshing Workers, and Fishermen (Coastal and Deep Sea).

The period of review is from 2013-14 to 2020-21. The agriculture year, i.e., starting from June to July has been retained as the basic unit for analyzing the wage trend.

Wage rates compiled in the study are those of male and female workers working in the field of agriculture operations. Monthly average rates of different fields' labour operations such as watering and irrigation workers, sowing workers, ploughing/tilling workers, plant protection workers, picking, packing labours, horticulture workers (including nursery growers), animal husbandry workers, loggers and woodcutters, general agricultural labour, harvesting/winnowing/threshing workers, and fishermen (coastal and deep-sea).

Firstly, the growth rate in wages for men and women has been calculated by using the formula:

$$\text{Growth rate}_{i,t} = \frac{CVW - PVW}{PVW} * 100$$

Where, CVw = Current year wages; PVw = Previous year wages; i = occupation; t = time

Secondly, female to male wage gap has been calculated by using the formula:

$$\text{Wage gap}_{i,t} = \frac{A_mW - A_fW}{A_mW} * 100$$

Where,  $A_mW$  = Average male wages;  $A_fW$  = Average female wages; i = occupation; t = time

Unadjusted log wage gap is calculated by using equal pay gap:

$$\text{Wage gap}_{i,t} = \text{Log} \left[ \frac{(A_mW - A_fW)}{A_mW} * 100 \right]$$

Where,  $A_mW$  = Average male wages;  $A_fW$  = Average female wages; i = occupation; t = time

## RESULTS AND DISCUSSION

Before examining the wage rates, it is worthwhile taking a look at the quantitative dimensions of the agricultural labour force, i.e., those to whom wage employment in agriculture is the principal source of income within various occupations in India. This will also help us to distinguish and differentiate those occupations in the agriculture sector wherein the incidence of wage labour is comparatively higher. Accordingly, in (Table 1) we have furnished.

The total workforce in India including Agri-workforce and non-Agri workforce from 1991 to 2011 has been shown in (Table 1). The breakdown of the numbers of agriculture workforce by total population and agriculture workforce is also given in the table. From 630.6 million in 1991, the rural population increased to 833.5 million in 2011, an increase of 8.32 per cent. The number of agricultural labourers in agricultural labour households, however, increased from 185.3 million to 263.0 million, an increase of 29.54 per cent [12].

Table 1 Population and agricultural workers in India (1991, 2001 and 2011) (In Millions)

Years	Total population	Average annual exponential growth rate (%)	Rural population	Agricultural workers		
				Cultivators	Agricultural labourers	Total
1991	846.40	2.20	630.60 (74.5)	110.70 (59.7)	74.60 (40.3)	185.30 (59.0)
2001	1028.70	2.00	742.60 (72.2)	127.30 (54.4)	106.80 (45.6)	234.10 (58.2)
2011	1210.60	1.50	833.50 (68.8)	118.70 (45.1)	144.30 (54.9)	263.00 (54.6)

Source: India Stat; Note: Percentage share in parenthesis

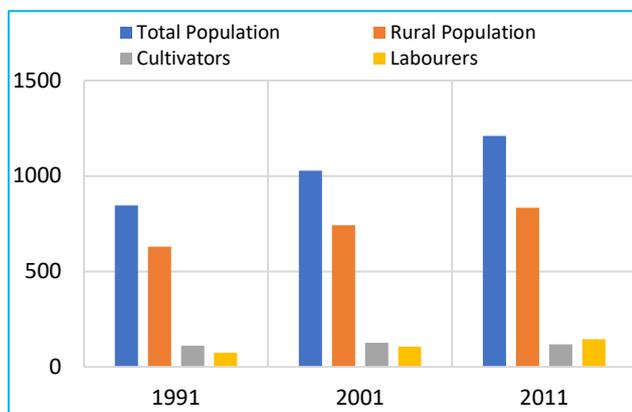
The number of agriculture and non-agricultural workforce is depicted in (Table 2). From 397 million in the year 1999-2000, the total workforce in India has been increased to 467 million in 2011-12 (an increase of 17 per cent), the number of agricultural labours decreased from 238 million in 1999-2000 to 228 million in 2011-12 (a decrease of -4.2 per cent). The number of the non-agriculture workforce has increased from 159 million in 1999-2000 to 239 million in 2011-12 (an increase of 50 per cent) this means that the workforce in India is attractive to non-agricultural sectors. The percentage share of the agriculture workforce to the total workforce has decreased from 59.9 per cent in 1999-2000 to 48.8 per cent in 2011-12 (a fall of 11.1%).

Graph 3 shows the percentage of labour force participation for rural males as well females, first increased from 84.7 per cent to 86.2 per cent in 1993-94, then the percentage share of rural male's labour force participation in agriculture fell to 71.1 per cent in 2018-19. Female labour force participation in agriculture occupations has been continually falling from 1987-88 until 2018-19 and reached 53.2 per cent. The reasons behind this continuous fall in labour force participation in agriculture occupations may be labour in the rural area attracting higher wages in urban industries. Rural agricultural labour force participation shows a growth rate of 2.2 per cent since 2018-19 [13]. This may be due to Covid-19 restrictions throughout India.

Table 2 Number of Agricultural and Non-Agricultural Workforce in India (1999-2000, 2004-2005, 2009-2010 and 2011-2012) (In Millions)

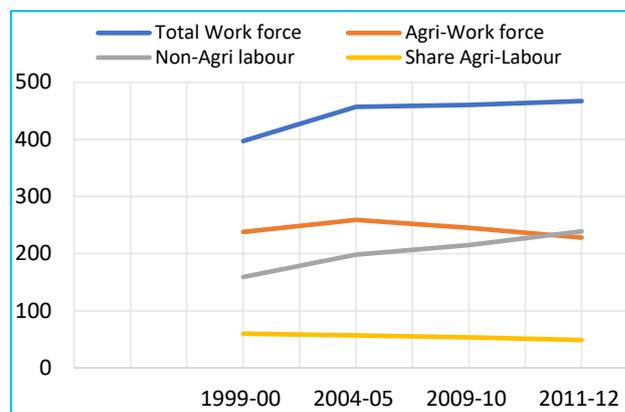
Years	Total work force	Agri-work force	Non-agri-work force	Share of agri-labour force
1999-00	397	238	159	59.90
2004-05	457	259	198	56.70
2009-10	460	245	215	53.30
2011-12	467	228	239	48.80

Source: Ministry of Agriculture, GOI



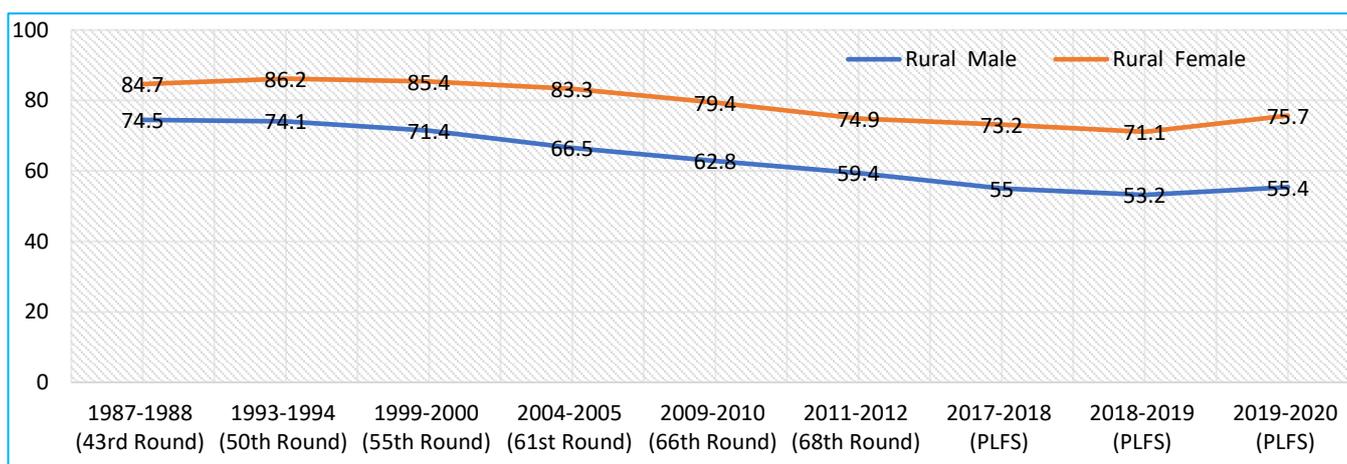
Source: Ministry of Agriculture, GOI

Graph 1 Total population and agricultural population in India (1991 to 2011) (in Millions)



Source: Ministry of Agriculture, GOI

Graph 2 Number of agricultural and non-agricultural workforce in India (1999-2000 to 2011-12) (in millions)



Source: NSSO; Abbr.: PLFS: Period Labour Force Survey

Graph 3 Percentage distribution of workers in agriculture in usual status (PS+SS) in India (1987-1988 to 2019-2020)

Table 3 Percentage distribution of workers in agriculture in usual status (PS+SS) in India (1987-1988 to 2019-2020)

Years	Rural		Urban	
	Male	Female	Male	Female
1987-1988	74.50	84.70	9.10	29.40
1993-1994	74.10	86.20	9.00	24.70
1999-2000	71.40	85.40	6.60	17.70
2004-2005	66.50	83.30	6.10	18.10
2009-2010	62.80	79.40	6.00	13.90
2011-2012	59.40	74.90	5.60	10.90
2017-2018	55.00	73.20	5.40	9.10
2018-2019	53.20	71.10	4.90	7.80
2019-2020	55.40	75.70	5.00	8.20

Source: NSSO; Abbr.: PLFS: Period Labour Force Survey

Table 4 Average number of days of employment of agricultural households in India\* (1987-1988, 1993-1994, 1999-2000, 2004-2005 and 2009-2010)

Gender	Nature of Employment	Agricultural labour households				
		1987-88	1993-94	1999-2000	2004-05	2009-10
Male	Wage employed	243	240	226	192	245
	Agricultural	231	247	238	230	238
	Non-agricultural	12	8	7	10	1010
	Self-employed	43	57	56	42	65
	Employed on salary basis	-	6	14	62	7
Female	Wage employed	162	212	199	141	211
	Agricultural	157	220	214	186	188
	Non-agricultural	7	4	3	4	-
	Self-employed	23	48	49	88	70
	Employed on salary basis	-	4	5	29	6

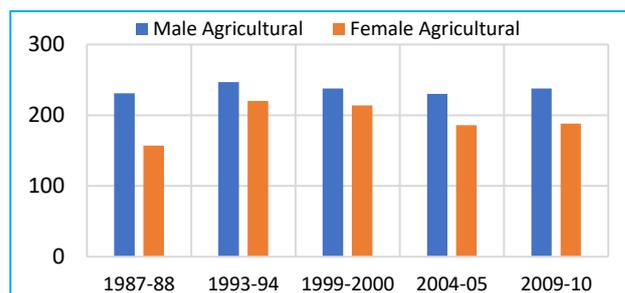
Source: NSSO

The percentage distribution of workers in agriculture by rural and urban as well as gender-wise in usual status in India is given in (Table 3). In the year 1987-88, the percentage share of males in the agricultural workforce to the total workforce was 74.5 per cent which decreased to 55.4 per cent in 2019-20, with a negative growth rate of 25.6 per cent. Similarly, the

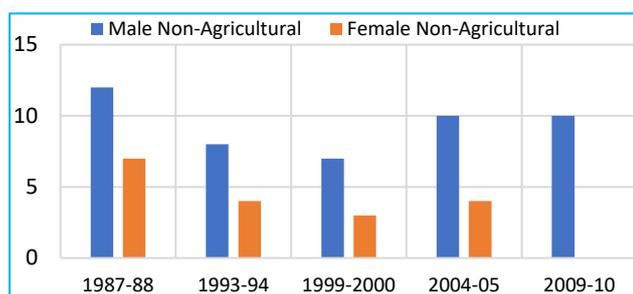
percentage share of female workers decreased from 84.7 per cent in 1987-88 to 75.7 per cent in 2019-20, with a negative growth rate of 10.6 per cent [14]. The fall in the percentage share of male workers in the agriculture sector is falling more than the fall in the share of female workers in almost the last three decades.



Graph 4 Wage employed male and female workers in agricultural occupations (1987-88 to 2009-10)



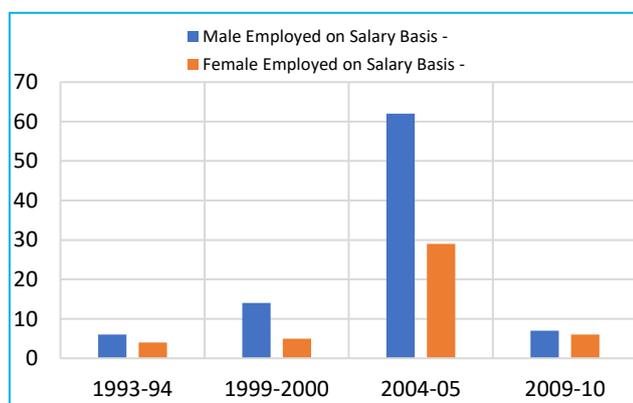
Graph 5 Wage-employed male and female agricultural occupations in India (1987-88 to 2009-10)



Graph 6 Non-agricultural male and female workers (1987-88 to 2009-10)



Graph 7 Non-agricultural male and female workers (1987-88 to 2009-10)



Graph 8 Male and female workers employed on salary basis

The average number of days of employment per year for the agricultural and all rural male households labour is given in

(Table 4). The average number of days of agricultural wage employment for the adult males increased from 231 in 1987-88 to 238 in 2009-10 per year, an increase of 3 per cent. For the wage employed adult males, the average days of employment increased from 243 in 1987-88 to 245 in 2009-10 (an increase of 0.83 per cent). It also increased from 43 to 65 days, for self-employed workers. The days of non-agricultural wage employment decreased slightly (from 12 to 10 days) for adult males on average. The adult females spent 211 days in agricultural wage-employment in 2009-10 compared to 164 days in 1987-88 (an increase of 28 per cent). In agricultural wage, employment, however, the number of days worked was 157 days in 1987-88 increased to 188 days in 2009-10. The average days of self-employment for adult females were thus 23 days in 1987-88 increased to 70 days per year in 2009-10. If we take into account salaried employment among adult females it increased 29 full days in a year in 2004-05, compared to 4 full days in 1987-88 [15].

Table 5 Annual growth rates (%) of occupational wages of male workers in India

Occupations	2013-14 to 2016-17	2016-17 to 2020-21	2013-14 to 2020-21
Watering and irrigation workers	5.6	4.47	5.17
Sowing workers	5.94	4.95	5.51
Ploughing / Tilling workers	4.80	4.11	4.51
Plant protection workers	3.01	4.05	3.82
Picking	5.40	4.91	5.75
Packing labours	1.93	5.42	4.08
Horticulture workers (Including nursery growers)	5.40	4.96	5.41
Animal husbandry workers	6.20	5.18	5.67
Loggers and woodcutters	3.87	4.35	4.26
General agricultural labour	5.60	4.47	5.17
Harvesting / Winnowing / Threshing workers	5.47	4.73	5.08
Fishermen (Costal and Deep Sea)	2.83	4.51	3.80

Source: India Stat

Annual growth rates (%) of occupational wages of male workers in India as shown in (Table 5). It is depicted from the table that, from the year 2013-14 to 2020-21, the highest growth in wage rates were recorded in picking, followed by animal husbandry workers, and sowing workers. On the other hand, manufacturing wages appear to have declined sharply to negative figures. Wage growth in fishermen and plant

protection workers was 3.8 and 3.82 per cent respectively during the phase. A similar trend is witnessed in the growth of wages in various agricultural occupations in India. For agricultural workers, watering and irrigational, sowing, picking, horticulture, animal husbandry, and harvesting (including winnowing and threshing) are the sectors that show a more than 5 per cent annual growth rate in daily wages [16].

Table 6 Annual growth rates (%) of occupational wages of female workers in India

Occupations	2013-14 to 2016-17	2016-17 to 2020-21	2013-14 to 2020-21
Watering and irrigation workers	6.1	4.6	5.46
Sowing workers	6.39	4.87	5.70
Ploughing / Tilling workers	4.08	4.66	4.99
Plant protection workers	4.80	6.21	5.87
Picking	6.83	6.29	6.80
Packing labours	4.42	5.68	5.49
Horticulture workers (Including nursery growers)	8.21	4.97	6.84
Animal husbandry workers	6.49	3.85	5.37
Loggers and woodcutters	5.33	4.24	4.37
General agricultural labour	17.25	4.65	11.8
Harvesting / Winnowing / Threshing workers	5.85	4.29	5.02
Fishermen (Costal and Deep Sea)	**	**	**

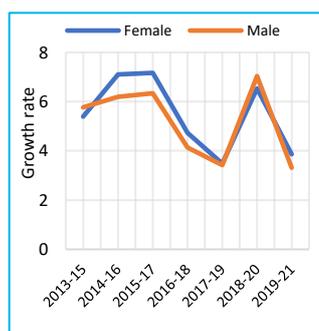
Source: India Stat

\*\*Depicts no female working in this activity

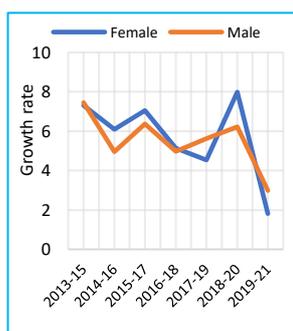
Annual growth rates (%) of occupational wages of female workers in India as shown in (Table 6). It is depicted from the table that, from the year 2013-14 to 2020-21, the highest growth in wage rates were recorded in general agricultural labour, followed by horticulture, and picking workers. However, loggers and woodcutters show a growth rate less than other occupations during the period. On the other hand, watering and irrigation, sowing picking, horticulture, loggers and woodcutters general agricultural labour and harvesting (including winnowing/ threshing workers) wages appear to have shown a declined trend as compared with the

wages in 2013-14. A similar trend is witnessed in the growth of wages in various agricultural occupations in India. For agricultural workers, watering and irrigational, sowing, picking, horticulture, animal husbandry, and harvesting (including winnowing and threshing) are the sectors that show a more than 5 per cent annual growth rate in daily wages.

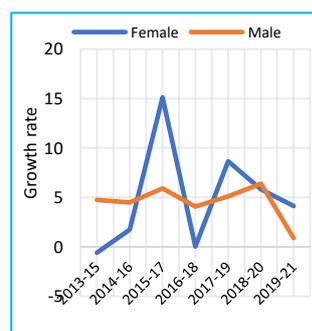
The followings graphs show the annual growth rate of wages in selected agricultural occupations for male and female workers in rural India. Graphs 9 to 20 shows the annual growth rate of male and female wages of selected agricultural occupations.



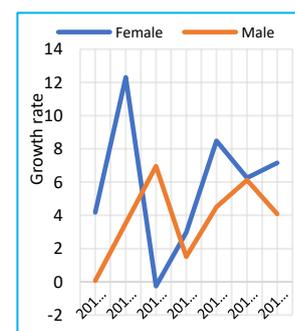
Graph 9 Watering and irrigation



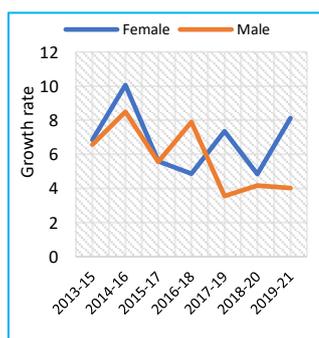
Graph 10 Sowing



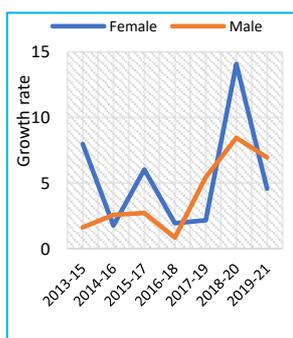
Graph 11 Ploughing / Tilling



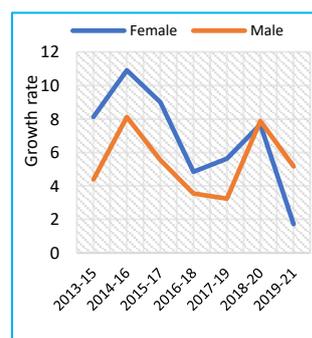
Graph 12 Plant protection



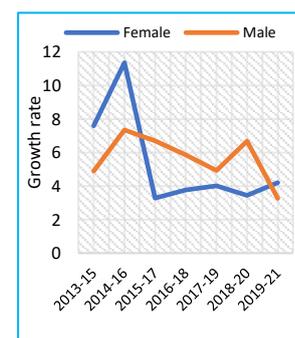
Graph 13 Picking



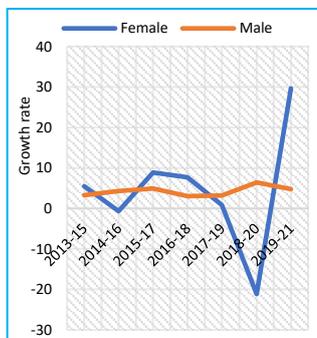
Graph 14 Packing



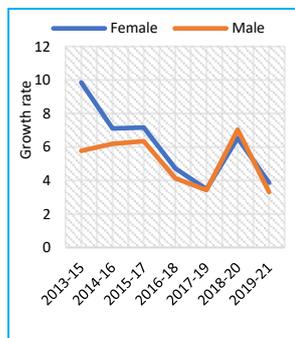
Graph 15 Horticulture (including nursery)



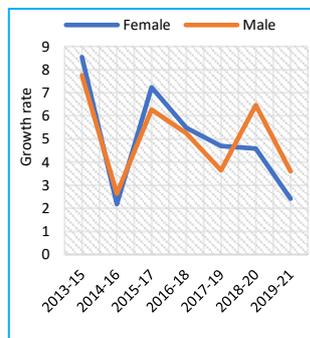
Graph 16 Animal husbandry workers



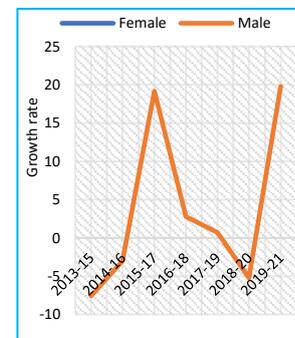
Graph 17 Loggers and woodcutters



Graph 18 General agricultural workers



Graph 19 Harvesting / winnowing / threshing



Graph 20 Fisherman (Costal and Deep Sea)

Table 7 Female to male wage gap for selected agricultural occupations in India from 2013-14 to 2020-21

	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21
Watering and irrigation workers	23.22	23.50	22.84	22.24	21.79	21.74	22.11	21.70
Sowing workers	18.47	18.57	17.70	17.17	17.04	17.90	16.53	17.48
Ploughing / Tilling workers	28.04	31.70	33.48	27.69	30.50	28.15	28.54	26.24
Plant protection workers	41.18	38.76	33.57	38.05	37.15	34.76	34.67	32.74
Picking	16.73	16.51	15.31	15.28	17.66	14.64	14.09	10.71
Packing labours	24.73	20.02	20.65	18.10	17.21	19.80	15.63	17.52
Horticulture workers (including nursery growers)	28.93	26.39	24.49	22.03	21.06	19.23	19.39	22.03
Animal husbandry workers	25.31	23.40	20.54	23.09	24.61	25.27	27.54	26.88
Loggers and woodcutters	47.84	46.73	49.25	47.35	44.97	46.23	60.15	50.71
General agricultural labour	16.28	15.67	16.04	15.27	15.08	14.22	15.72	16.69

Source: India Stat

It has been seen from (Table 7), that the long-term rate of wage gap has declined in all the agricultural occupations during the period under consideration except for animal husbandry workers, loggers and woodcutters, and general agricultural labour. For watering and irrigation workers, the wage gap has been reduced by almost 4 per cent; for picking

and horticulture (including nursery growers), it has been reduced by 6 per cent; and for packing workers, it has been reduced by more than 7 per cent during the period. Whereas, wage inequalities have been increased by almost 3 per cent among loggers and woodcutters [17].

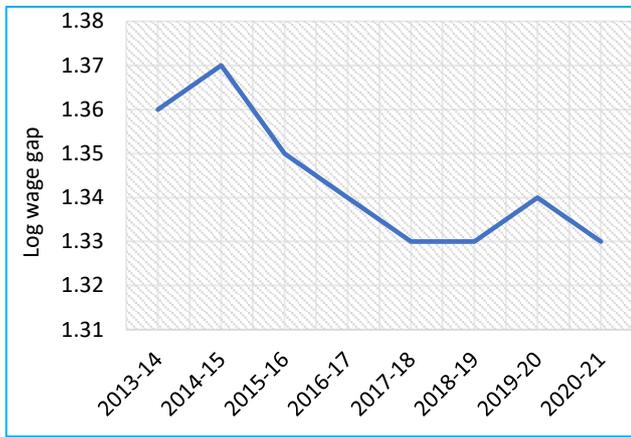
Table 8 Unadjusted log wage gap male to female for selected agricultural occupations in India for the period 2013-14 to 2020-21

	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21
Watering and irrigation workers	1.36	1.37	1.35	1.34	1.33	1.33	1.34	1.33
Sowing workers	1.26	1.26	1.24	1.23	1.23	1.25	1.21	1.24
Ploughing / Tilling workers	1.44	1.50	1.52	1.44	1.48	1.44	1.45	1.41
Plant protection workers	1.61	1.58	1.52	1.58	1.56	1.54	1.53	1.51
Picking	1.22	1.21	1.18	1.18	1.24	1.16	1.14	1.02
Packing labours	1.39	1.30	1.31	1.25	1.23	1.29	1.19	1.24
Horticulture workers (including nursery growers)	1.46	1.42	1.38	1.34	1.32	1.28	1.28	1.34
Animal husbandry workers	1.40	1.36	1.31	1.36	1.39	1.40	1.43	1.42
Loggers and woodcutters	1.67	1.66	1.69	1.67	1.65	1.66	1.77	1.70
General agricultural labour	1.21	1.19	1.20	1.18	1.17	1.15	1.19	1.22

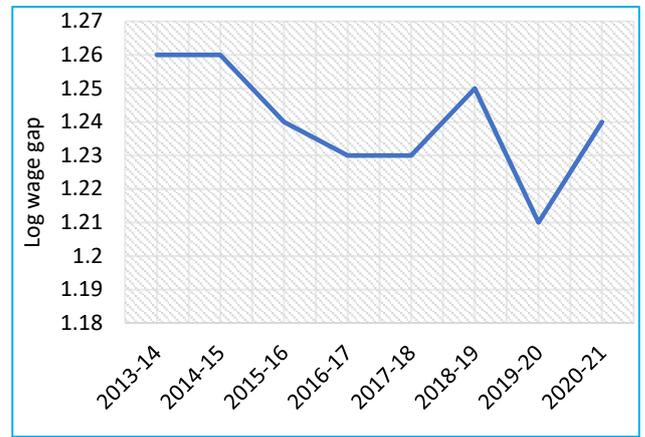
Source: India Stat

The log wage gap between male and female workers for agricultural occupations is given in (Table 9). For watering and irrigation workers log wage gap in 2013-14 was 1.36, which decreased to 1.33 in the year 2020-21. Similarly, the log wage gap was reduced to 1.24 from 1.26 for sowing workers; reduced to 1.41 for ploughing/tilling workers; reduced to 1.51 from 1.62 for plant protection workers; reduced to 1.02 from 1.22 for picking workers; reduced to 1.24 from 1.39 for packing workers; and reduced to 1.34 from 1.46 for horticulture workers. Whereas the log wage gap increased in this period for animal husbandry workers, loggers and woodcutters, and general agricultural workers. It can be seen from graph 1, that

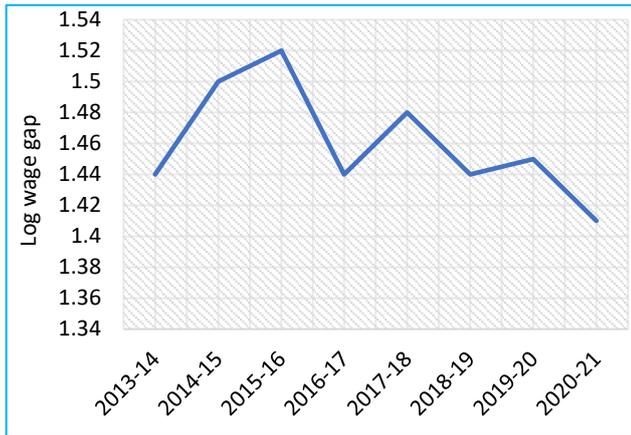
wage inequality between female and male workers first increased then decreased for watering and irrigation workers; for sowing workers wage inequalities first decreased then increased from 2019-20 as shown in (Graph 2). Wage inequalities first increased until 2015-16, finally decreased to 1.41 in the year 2020-21, for ploughing and tilling workers as shown in (Graph 3). Similarly, graph 4 shows a consistent decrease in the wage inequalities since it increased in 2015-17 for plant protection workers [18-20]. Graphs (21-30) shows the trend analysis of log wage gap of female to male workers in various agricultural occupations.



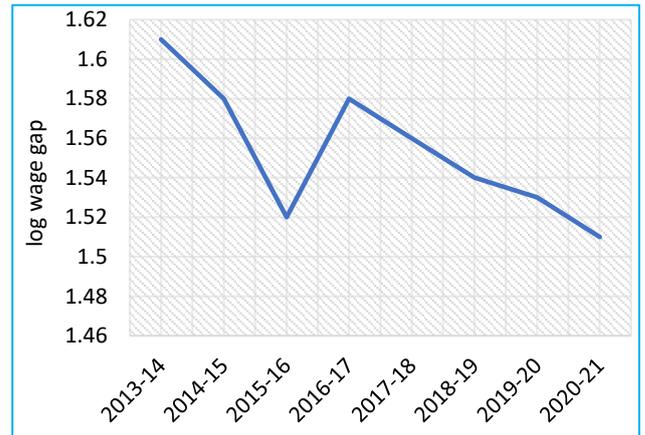
Graph 21 Watering and irrigation workers



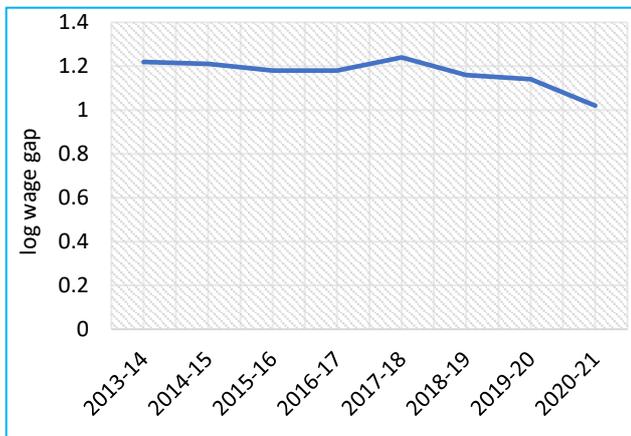
Graph 22 Sowing workers



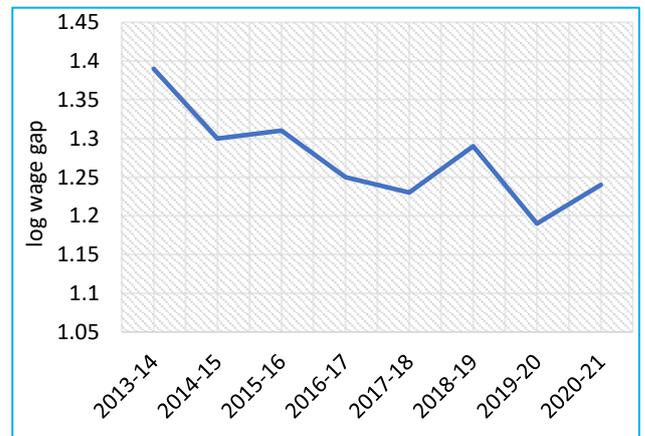
Graph 23 Ploughing / Tilling workers



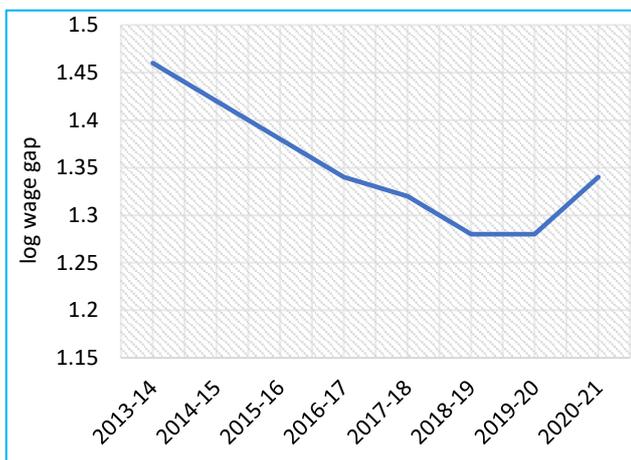
Graph 24 Plant protection workers



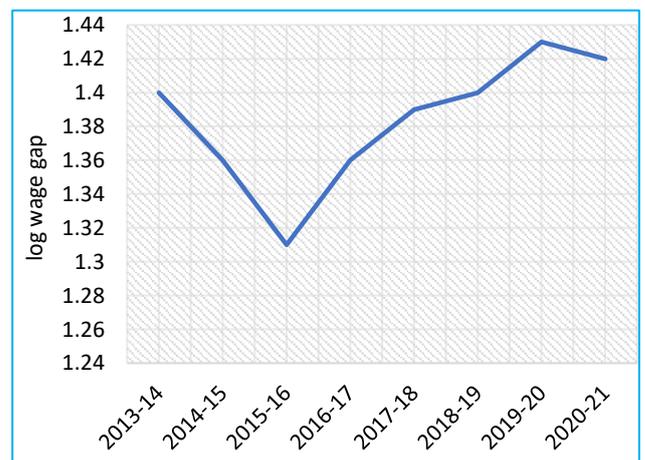
Graph 25 Picking



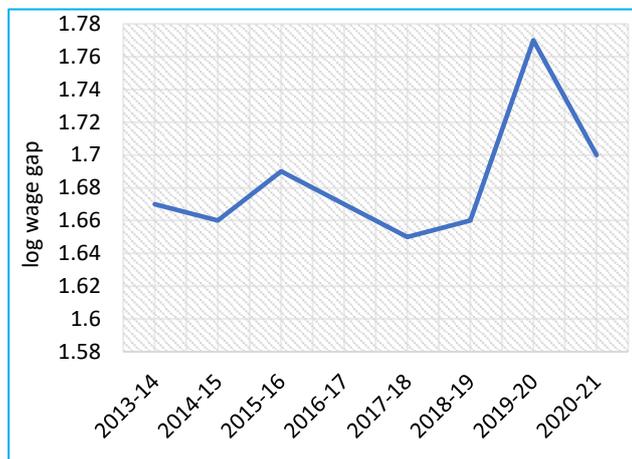
Graph 26 Packing workers



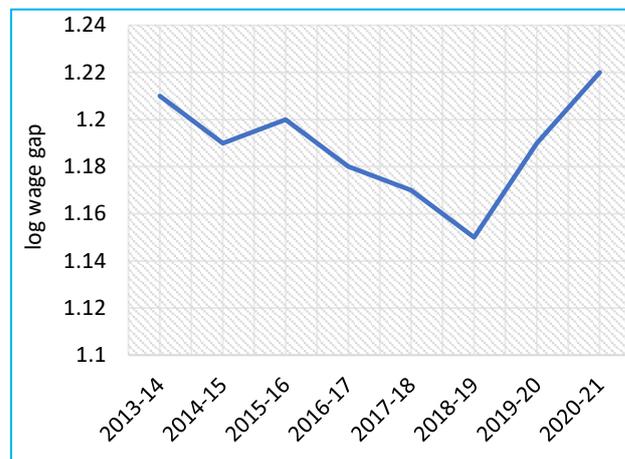
Graph 27 Horticulture workers (including nursery growers)



Graph 28 Animal husbandry workers



Graph 29 Loggers and woodcutters



Graph 30 General agricultural labour

It is worthwhile examining the relative variations in the money wages of both male and female workers across agricultural occupations. This is one interesting association—that wage rates happened to be directly linked to the absolute level of product per worker in agriculture. We shall take a look at the strength of this relationship found to exist among different occupations in agriculture.

Using the wage data for major agricultural occupations in India for the period from 2012-14 to 2020-21, this study examined the trend in wages in agricultural occupations and found that the pattern of increase in wages (nominal by occupations and gender) was broadly similar in the study in occupations and periods, with varying degrees. At the country level, the wage increased during the period. Nominal wages increased at the country level and in the agricultural occupations, to varying degrees. In the period, the wages increased to rupee 314.48 from 221.06 for workers in watering and irrigation; from 222.38 to 323.6 rupee for sowing workers; from 260.6 to 354.7 rupee for ploughing and tilling workers; from 285.07 to 370.08 rupee for plant protection workers; from 194.3 to 287.1 rupee for picking workers; from 225.5 to 297.8 for packing workers; from 220.04 to 318.03 rupee for horticulture workers (including nursery growers).

The study further examined the growth rate in wages, from the period 2013-14 to 2020-21 by occupations and gender and finds a compound growth rate of 5.17 per cent for male and 5.46 per cent for female workers in watering and irrigation, which is 5.51 per cent for sowing male workers and 5.70 per cent for sowing female workers; 4.51 per cent for ploughing/tilling male workers and 4.99 per cent for ploughing/tilling female workers; 3.82 per cent for plant protection male workers and 5.87 per cent for plant protection female workers. Similarly, the combined growth rate for picking, packing, horticulture, animal husbandry, loggers and woodcutters, general agricultural workers, harvesting/winning/threshing, and fisherman occupations is given in (Table 6) for male workers and in (Table 7) for female workers.

The highest compound growth rate for male workers has been achieved by picking workers. Whereas for female workers it has been achieved by general agricultural labour, which is 11.8 per cent. The least compound growth rate for male workers has been seen for fishermen. Similarly for female workers, the least compound growth rate has been seen in loggers and woodcutters and stands at 4.37 per cent for the period.

The study further examined the female to male wage gap for the selected agricultural occupations for the period from 2013-14 to 2020-21. It can be seen from table 8 that in the year, 2013-14, male workers in watering and irrigation are paid 23.22

percent higher wages than the female workers, which is reduced to 21.70 percent in 2020-21; for sowing male workers are paid 18.47 percent higher wages as compared to the female workers in the year 2013-14, which is reduced to 17.48 percent in 2020-21; for ploughing/tilling male workers are paid 28.04 percent higher wages in 2013-14, which is reduced to 26.24 percent in 2020-21; for plant protection male workers are paid 41.18 percent higher wages than females workers in 2013-14, which is reduced to 32.74 percent in 2020-21; for picking male workers are paid 16.73 percent higher wages in 2013-14, which is reduced to 10.71 percent in 2020-21; for packing male workers are paid 24.73 percent higher wages than female workers in 2013-14, which is reduced to 17.52 percent in 2020-21; for horticulture male workers are paid 28.93 percent higher wages than female workers in 2013-14, which is reduced to 22.03 in 2020-21.

Whereas wage inequalities not only reduced during the period it also increased in a few agricultural occupations as for animal husbandry male workers are paid 25.31 per cent higher wages than female workers in 2013-14, which increased to 26.88 per cent in 2020-21; for loggers and woodcutters male workers are paid 47.84 per cent higher wages than female workers in 2013-14, which is increased to 50.71 per cent in 2020-21; for general agricultural labour male workers are paid 16.28 per cent higher wages as compared with female workers in 2013-14, which is increased to 16.69 per cent in 2020-21.

This study further examined the unadjusted male to female log wage gap for selected agricultural occupations for the period 2013-14 to 2020-21. For watering and irrigation, only a 1.33 per cent wage gap is explained by gender in 2020-21; for sowing workers 1.41 per cent wage gap is explained by gender; for ploughing/tilling 1.44 per cent wage gap is explained by gender in 2013-14, which is reduced to 1.41 per cent in 2020-21. Similarly for picking, packing horticulture, animal husbandry, loggers and woodcutters and, general agricultural labours as given in (Table 8).

## CONCLUSION

Using the data for various agricultural occupations for the period 2013-14 to 2020-21. Overall growth in wages of both male and female workers has been registered over the period but the growth rate in female wages has been increased more than that of male workers for watering and irrigation, sowing, ploughing/tilling, plant protection, picking, packing, horticulture, and animal husbandry workers. Whereas growth in wages for male workers is higher in loggers and woodcutters, general agriculture workers, and harvesting/winning/threshing workers. The highest compound growth rate for male

workers has been achieved by picking workers. Whereas for female workers it has been achieved by general agricultural labour, which is 11.8 per cent. The least compound growth rate for male workers has been seen for fishermen. Similarly for female workers, the least compound growth rate has been seen in loggers and woodcutters and stands at 4.37 per cent for the period. Further, there is a considerable wage gap found in almost all the selected agricultural occupations. Male workers are getting high wages as compared with female workers. In

loggers and woodcutters, there is more than a 50 per cent wage gap still exists. Over the year, male to female wage gap has declined in all the selected occupations except loggers and woodcutters, animal husbandry, and general agricultural workers in which the gender wage gap has increased during this period. Further, less than a 2 per cent wage gap is explained by gender in selected agricultural occupations. The difference between wage gap is explained by gender may be occurred due to education, age, caste, religion and many other factors.

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