CHAPTER - II

REVIEW OF LITERATURE: AGRICULTURAL WAGES IN INDIAN CONTEXT
II.1 Introduction

There have been various studies on wages in India and other countries. The focus of the studies has been on some theoretical or empirical aspects of wage determination. The theoretical aspect provides an understanding of the framework for wage analysis, while empirical studies bring out the real life complexities of wage analysis and examine wages in relation to various aspects of economic development. The empirical studies are thus useful for development oriented policy formulation. It would be important to show here some of the important researches in India as well as in Gujarat concerning agricultural wages.

II.2 Review of Earlier Studies

Sridhar Misra\(^1\) in his study of daily cash rates ascertained from nearly 60 villages spread over 31 districts in different regions of the province (Hill tract, Plain-western, Plain Central, Plain-Eastern). He concludes that net advantage of the rise in wages of agricultural labourers ranges from 260 percent in the eastern districts to 360 percent in the western districts.

of the state. This is also abundantly clear from the obvious poverty and otherwise miserable conditions obtaining in the Eastern Zone than in any other parts of the province. Moreover, it will be observed that conditions appear to be more acute in the eastern districts than elsewhere in the province. In the Bundelkhand area too parallel condition existed. In both these tracts wages are depressed due to excessive supply of labour while in many areas there prevail 'scarcity' prices. In the Hill tract there is not much lag between wages and prices because of its 'secluded' economy from the rest of the province and special conditions which determine the supply and demand for commodities raised and consummed locally.

Nilkanth Rath and R.V. Joshi\(^2\) examine with the help of available data, the relative trend in agricultural wage rates and the prices of the major cereals entering into the consumption of workers in India. Two different sets of data have been examined, one official data relating to the wage rates of field labourers and the prices of jowar and bajra (for three divisions, Central, North and South, and the entire presidency of the Bombay) during the years 1924 to 1940 (inter-war years) and the data of wage rates and cereal prices collected during the farm management survey in six states of India during the years 1954-55 and 1956-57. Authors conclude from these data as under:

1. Sharp increase in the price of staple cereals does not necessarily accompany sizeable increase in wage rates, in wage rates, in the short period of a year or so. Wages appear to take time to adjust, and that too only if the changed price-level tends to persist over a longer period.

2. Both the pre-war and the post-war data show that wages are sticky in the short run and lag behind prices in the long run.

3. In most states there were variations in wage rates over the years. It would appear that variations in wage rates over a year are less in those areas where the cropping pattern shows a fair spread over the kharif and rabi seasons, than in those where agriculture is confined to a single season and one or two crops only.

N. Krishnaji in his study examines the trends in agricultural wages since 1956, and he compared the current wage levels with those at 1951, and also studied the pattern of variation in earning over time and space. For this purpose he has selected the four samples covering villages from selected districts of selected states. He had chosen one peak season month for each state for estimating state averages. The study leads to the following findings:

1. In six out of the 14 states viz. Assam, West Bengal, Maharashtra, Punjab, Himachal Pradesh and U.P. real wages in 1964-65 were appreciably lower than their 1956-57 levels. In Bihar, Mysore, Gujarat and Madhya Pradesh, they have remained more or less at the same level. It is only in Kerala, Orissa and Andhra Pradesh that real wages have risen during 1956-64.

2. Only in Kerala and Orissa real wages have increased during 1950-64 to significant extent if compared to 1964-65 levels with those in 1951. On the other hand they have fallen appreciably in Assam and West Bengal and possibly in the Bombay region as well as in all the other states, real wages have remained more or less at their 1950-51 levels.

3. If comparison is made of 1968-69 with 1964-65 data of the same villages, wages have risen between 25-50 percent in different areas and prices increase in the same period were 30 percent which indicates that living condition of agricultural labourers probably continues to be the same as ever before.

4. The disparities among wage appear to be shrinking, due to the fact that money wages increased at a faster rate in those regions where these were relatively low in real terms. For example, there were sharp fall in wages in Assam, Punjab, Himachal Pradesh and West Bengal where the wages were relatively high.
Indira Hirway\textsuperscript{4} in her study presents the behaviour of agricultural wage rate in some selected districts of Gujarat, giving due consideration to the reliability aspect of the data. The sample of the study consisted of ten districts of Gujarat, all of which constitute a homogeneous region, which has delineated by the minimum wage Committee into 30 economically homogeneous wage zones. She used these wage zones as her units and selected 30 centres, one from each of the 30 wage zones of the selected districts for her study on the basis of the availability of data about wages. She took into consideration the periods of 1950-51 to 1959-60 and 60-61 to 1965-66.

She concluded that because of the doubtful reliability of agricultural wage statistics available for Gujarat state, it was not possible to study the trend in agricultural wages for the has improved since 1960, it was worthwhile to study the trend for period from 1950-51 to 1959-60. However, as the quality of data the period 1960-61 to 1965-66. Therefore, she stated that on the whole, agricultural wage rates does show a positive trend, though the rate of increase is very low. Moreover, irrigation and industrial development are likely to have positive influence on the agricultural wage rate.

Deepak Lal examines the trends in real wages of agricultural labourers as delineated in past studies in the light of the more recent evidence made available through National Sample Survey (NSS). The study aims to look into the question of inter-state variations in change in wages in conventional demand and supply terms. Further, an attempt is also made to see to what extent the conclusions derived from the poverty 'numbers game' are validated by the recent national sample survey evidence and derive measures other than the usual poverty statistic during the 1956-57 to 1970-71. He used the data of agricultural wage in India (AWI), NSS and from various studies in farm management (SFM) and came to the following conclusions:

1. In the first part of the period (1956-57 to 1964-65), real wages only rose in seven states and were constant or fell in the remaining 8 states in India, but in the following period 1964-65 to 1970-71, they have risen sufficiently to offset the earlier decline. Therefore between 1956-57 and 1970-71 real agricultural wages rose in all the states of India, except the West Bengal for which there are no available data from NSS for 1970-71.

2. The constancy or decline in real wage with agricultural growth is partly due to their use of an unreliable source of

data (AWI) and in part to the time period chosen for studying the trends. The period 1962-1967 was a period of rapid price rises in India, following the increase in defence spending after the Chinese invasion in 1962. This upsurge in prices continued till about 1967-68, chiefly because of the harvest failures of 1965 and 1966. Thus rural money wages tend to lag behind prices. The study which took their terminal date as 1967-68, did not find a decline or a constancy of rural real wages. With the return of relative price stability and normal agricultural conditions by 1970-71, money wages had adjusted to the price rises, and the underlying rise in real wages becomes apparent.

3. Within the existing institutional framework, the "Green Revolution" would necessarily lead to the immiserisation of the poor. The "Green Revolution" had not gained momentum even in Punjab till 1968-69 with large rise in the real wage rates.

4. The real wages are determined within the normal demand and supply framework and the demand factors (including effects of agricultural growth) have a positive effect on real wage rates.

5. The six states for which the data on distribution of consumption of the "weaker section" of the rural population are available, rise in the average household income of all
the sample households, do lead to a decline in absolute poverty. Moreover, the poorest three declines in all six states have improved their relative share in the total income according to the weaker section. While for five of the six states, there is a statistically significant positive correlation between agricultural growth and rural poverty redressal.

Pranab Bardhan\(^6\) in his study explained the trend in agricultural real wage rates using the data of AWI for the period 1960-61 to 1967-68, NSS data for the period 1956-57 to 1964-65 and other data from various other sources. The study related to Punjab (including Haryana, Delhi, and Himachal Pradesh), Western U.P. and many other IADP states. The author came to the following conclusions:

1. In IADP districts where government has concentrated much of efforts towards agricultural modernisation and development, movements in the real wage rate for agricultural labourers have been rather disappointing. In a majority of the districts cited, there was a significant fall in the real wage rate during 1962-63 and 1967-68. Only in two districts (Alleppey and Palghat) of increase in the real wage rate to the extent of more than 20 percent between these two years.

2. Due to strong peasant organisation agricultural wage rates seem to have gone up much faster in Kerala than in north west India inspite of smaller rate of growth of agricultural production and a much large number of landless people flooding in the market, indicating that the bargaining strength of agricultural labourers may be atleast as important determinant of high real wage rate as the spread of technological progress in agriculture.

3. There has not been much of a change in the relative position of the bottom 30 percent of the rural population over the last decade. The relative position of the bottom 30 percent may have actually declined some what.

4. It seems that between 1960-61 and 1967-68 the percentage of rural population living below the bare minimum level has nearly doubled for different state as well as for India as a whole.

S.M. Pandey's study consists of an empirical analysis for the year 1971 of wage determination in the predominantly wheat growing region of India. It covers 83 districts located in the north central wheat zone of the country comprising Haryana, the Punjab, Madhya Pradesh, Rajasthan and U. P. The author used the

technique of multiple regression analysis first on all districts included in the study and later on two groups, viz. districts with high man-land ratio and those with low man-land ratio. He also used some variable on demand side viz. (1) intensity of cropping (2) proportion of gross irrigated area in gross cropped area (3) effective size of cultivated holdings, while supply side variables are proportion of agricultural labourer to total rural workers and man-land ratio and fitted in regression function.

The analysis reveals that in a developing agricultural sector the demand for labour plays a much more important role than its supply. The demand variables show up very prominently in all the models for all districts as well as for districts with high and low man-land ratios. However, with the only exception of the size of cultivated holdings, the values of their regression coefficients are higher for districts with low man-land ratio. An increase in the demand for labour through increased intensity of cropping tends to have slightly lesser impact on the wage rates among districts with high pressure of population because these districts have a relatively higher level of cropping intensity. The values of constant term are higher for districts with high man-land ratio as compared to those with low man-land ratio. The highest positive value of constant is observed, where proportion of agricultural labourers and size of cultivated holdings are included.
H.S. Aulakh and G.S. Kainth in their study analyse movements of money and real wages of agricultural labour, the factors affecting variations in real wages of agricultural labour and the inter-districts variations in the wage rates of different farm operations in Punjab during the period of 1956-57 to 1975-76. They used simple linear regression model ($Y = a + bt$; where $y$ stands for daily wage rate of an adult male worker, $t$ stands for time variable) to find out the movement of money and real wage of different farm operation and a multiple linear regression $[WR = a + b_1T + b_2P]$; where $WR =$ real wages per day in rupee, $t =$ time variable (year), $P =$ productivity of farm measured in terms of yield per hectare of wheat in kgs, $a =$ constant term] for the variation in the real wages of agricultural worker. Inter district variations in money wages of the different farm operations, for the period 1972-75 were examined with the help of simple measure of dispersion that is the coefficient of variations.

They conclude that the real wage for the selected farm operations (ploughing, weeding and harvesting) showed persistent marginal increase during the period 1966-71 and thereafter the real wages, in general began to decline and accordingly it stated that the green revolution had negligible impact on the real wages in Punjab. The real wages of agricultural labour stood stagnant

even under the impact of green revolution and an upward shift in agricultural productivity. Secondly, the trends of money wage and real wage are observed to be different in different farm operations. Though there was an increase in the money wages for all the three farm operations there was no such increase in real wages for two operations that is ploughing and weeding. In respect of harvesting there was an increase in the real wage rates which indicates that increase in real wages were positively related to the productivity of agriculture measured in terms of yield per hectare of wheat in Punjab. And thirdly the wage rates for the different farm operation prevailing in the different districts of the Punjab were also affected by the level of productivity of the agricultural sector measured in terms of per hectare yield of rice and wheat.

P.V. Sharma and D.B.S. Hanumantha Rao\textsuperscript{9} in their study on employment and wage structure of Andhra Pradesh for the period of 1951-71 shows that the employment structure has not changed much and the work force is mainly concentrated and heavily dependent upon the performance of agriculture sector. Secondly, though the output per hectare is observed to have increased substantially in many districts due to technological factors, there has been no corresponding increase in wage rates. Thus this study reveals

that there is no structural change in composition of the workers or in the levels of living of the agricultural labourers in the state of Andhra Pradesh.

Sastry C. Mani in his study on wage structure has taken the help of pre-war theories to analyse the wages determinants. The main theories are the classical theory of subsistence and the scissors' theory of supply and demand and the marginal productivity theory. The study farther states that if there is organised sector, then the wages shall be fixed by collective bargaining. Wage differentials depend upon the nature of workers' group viz., Whether they are organised or unorganised and the level of economic development of the sector. In India the agriculture sector belongs to unorganised sector. Legislation has even not influenced the wage system in the right direction. The organised effort is lacking among these workers and they are not able to uplift their living conditions. The industrial sector units have their own unions to fight for their rights and are in position particularly to fix the wages and conditions of living standards.

In the under developed economies the difference in wages among different regions may be due to variations in their characteristics. One factor may be the difference in cost of living in different regions within the same country. This may be

due to geographical reasons that wage differentials are seen. The trends in differentials can be explained in terms of socio-economic factors.

Pranesh Kumar and B.M. Sharma in their study tried to analyze the trends and growth rates in the real wages of agricultural labourers engaged in different agricultural operations in Haryana. This study covers the period 1960-67 (pre-green revolution) and 1967-80 (post green revolution) period and measured growth rates of the agricultural labour (Operation wise and period wise). Period-wise real wages of labourers for each agricultural operation are worked out by using the consumer price index number for deflating money wages and came to the following conclusions:

1. The real wages of agricultural labourers during the post green revolution period were distinctly higher than those during pre-green revolution period for all the agricultural operations.

2. The labourers employed for ploughing and picking cotton in all the periods taken in the study, earned the highest real wages followed by the real wages of workers engaged in agricultural operations of harvesting, sowing, others and

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weeding during the three periods under reference. The real wages of agricultural labourers engaged in different agricultural operations have registered a very low and insignificant growth rate over the years and these have remained almost constant over the period under study.

R. S. Dhariwal and S. S. Grewal\textsuperscript{12} in their study on temporal and spatial variations in wages of agricultural labourers in Punjab, took the wages of casual labour, trends in permanent labour and spatial differences in wage rates. For analysing spatial differences in wage rates the inter-district variation are explained in term of several variables - viz size and distribution of holding, irrigated intensity, cropping intensity, tractor use and availability of labour force. The study further states that there is an increase in the daily wage rates for all the operations from 1956-57 and the rate has slightly increased in 1964-65. There has been sizable jump in money wages in the period 1967-69, particularly in the period when new technology was adopted in agriculture. Thereafter the increase has been fast in 1975. There has been an increase by three hundred percent in money wages in 1975-76 taking 1956-57 as the base year. The real wages have gone up by 20.27 percent in 1956-84 and their rise was lowest in 1967 i.e. 1.98 percent. There has been a significant spatial difference particularly when comparisons involve areas

using tractors and double cropping areas with irrigation facilities having big size farms and areas sowing crops with modern techniques.

Ajit Kumar Singh in his study tried to analyse the economic conditions of Agricultural labourers in U.P. based on agricultural/rural labour enquiry report for the years of 1950-51 and 1955-56, 1964-65 and 1974-75 respectively. The author's main findings are:

1. The number of agricultural labourers was more than double between 1950-51 and 1974-75. This combined with an increase in the proportion of agricultural labourers with land is indicative of the rapid process of proletarianization of peasants in the state. This was accompanied by a deterioration in their economic condition in the pre-green revolution period.

2. In the period 1956-57 to 1964-65, there was a marked decline in the real wages of agricultural labour while in 1964-65 to 1974-75 there was marked rise in real wages due to favourable impact of green revolution. But as compared to 1956-57, real wage rates seem to have remained more or less constant. Moreover, the sharpest increase in wage rates

took place in case of ploughing followed by sowing and weeding. Wage rates of transplanting and other operations failed to rise in real terms. Though wage differentials among different agricultural operations have also narrowed over the period.

3. The wages, employment, income and consumption levels have recorded an upward trend from 1964-65. This establishes the favourable impact of the new agricultural technology on the economic condition of agricultural labourers in the state, although economic conditions have improved in absolute terms but not in relative terms.

V.N. Kothari analyses the causes of inter-regional wage difference in agricultural sector in 110 districts. He found that productivity per person engaged in agriculture and proportion of agricultural labour into total labour force engaged in agriculture are having about 64 percent explanatory power for inter-state variations in wage rates. He further states that explanatory power of productivity in explaining wage variation is weaker while the proportion of agricultural labour force seems to be exerting a more powerful influence on the wage rate.

Robert W. Herdt and Edward A. Baker in their study examined the question whether wages have been constant in the past and whether the new high-yielding varieties have had any discernible impact on wages. The authors examined the data of nine regions of India for the period 1954-55 to 1968-69. They are of the opinion that money wages in the regions designated as Assam, Tripura, Andhra Pradesh, Mysore/Andhra, Kerala, Madras and Punjab did vary with production of major foodgrains while in Bihar/West Bengal, Bombay and Madhya Pradesh they did not. This indicates that by and large in years when production was high money wages were high and when production was low money wages were low. However, there was upward trend in production, wages and prices between the period 1954-55 to 1968-69. Moreover, in Punjab, Kerala and Madhya Pradesh there is a significant correlation between lagged production of certain grains and real wages, but the degree of correlation is small which shows that real wages are not generally influenced by production. Besides in those areas in which the HYV especially wheat, had been widely adopted, both money and real wages of agricultural labourers were higher than in regions where HYV was not adopted. Therefore, wages have increased substantially since the middle 1950s, especially in green revolution areas where the new technology has been well accepted.

Misra V.N. in his paper "Labour Market in Agriculture, A study of Gujarat Districts" focused on labour market analysis on the basis of (a) wage demand relationship (b) wage supply relationship (c) wage determination through demand and supply of labour with the help of cross-section data for 1960-61, relating to different districts of Gujarat. For empirical verification, author selected some variables for the demand function, which are wage rate, per capita income, crop pattern and percentage of irrigated area, while for supply of labour side two major economic determinants viz. wage rate and the alternative avenues of employment had been taken into account. The author pinpoints that the demand for labour is by and large a function of the capacity and the requirements of the cultivators, besides the wage rates. Per capita income, percentage of irrigated area and crop pattern have significantly positive relationship with the demand for hired labour, whereas the wage rate has significantly negative relationship with it. All these variables taken together explained a very high percentages (87 percent) of the variation in the demand for labour among the districts. On the supply side, wage rates are expected to have affected the supply of labour to an employment only when alternative opportunities are available. This relationship however, was not found to be strong. Probably the supply of labour in the rural sector is demographically and institutionally so determined and fixed as not to vary with the wage rates.

In short, the labour market variables in Gujarat districts play a limited role in the allocation of labour, in the sense that wage variations affect the demand for labour while they seem to be completely ineffective in the pricing of labour in agricultural sector. Demand for labour is found to be sufficiently responsive to wage rates along with some other variables. But supply of labour seems to be determined outside the system of the economic variables in the labour market. Consequently, wage rate determination is also independent of the market conditions.

A.V. Jose in his study tried to attempt a comparative analysis of agricultural wages in various Indian states from agricultural years 1970-71 to 1984-85. The author's main findings relate to the movement of wage over time, their dispersion across states, temporal movements and spatial and gender disparities observed in the wage rates. The author covered wage data of 16 state. The study's main findings were that gender disparities in wages are found to be conspicuously large in many states and there is considerable variation across states with regard to the incidence of such disparity. There is one interesting association that wage rates in various states are directly linked to the absolute level of output per worker in agriculture of each state. The highest absolute level of money wages is found in the states of Punjab, Haryana and Kerala. Also relatively higher wages are found to prevail in Gujarat, Assam and West Bengal too.

Moreover, the author examined the regional disparities in agricultural wages and came to the opinion that the measures of dispersion clearly bring out that in most states of India there has been no discernible trend towards increase or decline of inter district disparities in wage rates. On the whole it appears that the coefficients of variation of male as well as female wage rates in most states tend to fluctuate around a wide margin once they cross the threshold of a 30 percent level. The author also found that there is hardly any state which managed to maintain sustained increase in wages over a period of three decades, from the mid 1950s onwards. He concluded that all the states except Maharashtra and Punjab are the ones which demonstrated proportionately larger increases in wages in relation to those of output level, which indicates a positive relationship between the growth of agricultural output and wages. Relatively higher rates of growth of wages observed in the state of Gujarat, Orissa and Rajasthan occur along with higher rates of growth of output.

Sunanda Krishnamurthy, in her study examined the wage differentials in agriculture by caste, sex and operations on the basis of Rural Labour Enquiry Reports of 1964-65 and 1974-75. She found that the average daily wage rates for a full day's work earned by women is lower than that earned by men in every operation.

including transplanting and weeding which are largely female tasks. Besides women from scheduled caste, agricultural labour households and scheduled tribe agricultural labour households suffer from similar disadvantage. Moreover, in the case of scheduled caste women in three agricultural operations and in the case of scheduled tribe women in two agricultural operations, wage differentials have increased in 1974-75 as compared to 1964-65. Besides at the all India level male and female wage differentials have decreased in 1974-75 as compared to 1964-65.

H.S. Sidhu in his study tried to identify the factors which play an important role in the process of wage determination in the most developed agricultural regions of the country i.e. Punjab and Haryana, for the year 1975-76. The author is of the view that inspite of some contradictions arising out the trade unionism and segmentation of the labour market, demand and supply factors are in fact, major determinants of wage rates. Whereas productivity of land and inequality in the distribution of landholding tend to push up wage rates, demographic pressure on land and segmentation in the labour market are dominant variables which tend to depress wage rates significantly. Thus if wage rates of agricultural labour and hence their incomes are to be improved agricultural growth alone cannot do it. Population on land has to be relieved to some extent.

Biswanath Santra, in his study, tried to highlight the trend in the money as well as real wage rates and their stability around the trends for four states of India, viz. Tamilnadu, Kerala, Punjab and West Bengal. The author's analysis based on two periods of 1956-57 to 1970-71 and for the Green Revolution period 1964-65 to 1970-71. The author came to the conclusion that real wage rates have increased in Punjab, Tamilnadu and Kerala while in most of the districts of West Bengal they virtually declined over the two periods covered under the study. Moreover in Punjab the rate of growth of agricultural production is much higher than the rate of growth of real wages. One additional information emerging from analysis is that higher growth rates in agricultural wages are associated with higher amount of instability and lower growth rates with lower amount of instability. It is also noticed that response of the adjustment of money wages to the increasing cost of living index are mostly of lagged type in Punjab and Tamilnadu while it is in general instantaneous in Kerala and West Bengal.

D.K. Grover and K.N. Rai in their study entitled "Effects of the Agricultural Revolution on the Agricultural and Industrial labour in Haryana", present the relationship among the wages of


agricultural and industrial labourers, real wages of agricultural labour, relationship between real and money wages with consumer price index and the impact of different agricultural and industrial development plans on farm labour for the period of 1961-62 and 1970-71. Authors pinpoint that during the ten years period from 1961-62 to 1970-71 which can be termed as the period of agricultural revolution, the wages of agricultural labour remained constant in terms of wheat, gram, bajra and gur in Haryana State. Similarly, no change was observed for the wage of industrial labour during this period. Though money wage showed considerable increase during the same period, the inflationary trend in price has brought down the real wages at the same level as in 1961-62. This shows that even though labour is a major resource for agricultural production, agricultural labourers have not benefited through green revolution, primarily due to inflationary pressure on the economy.

Kalpana Bardhan22, examines factors affecting wage rates for agricultural labour for the period of 1956-57 and 1970-71 on the basis of the NSS data of 15 states of India. The study is also based on the results of some village-level and state level cross comparisons between variations in agricultural wage rates and those in certain basic factors affecting the demand and supply parameters. The author stated that the agricultural wage rate

responds positively to variations in irrigation and negatively to the proportionate size of agricultural labourers. The response to cropping intensity is similar to that observed in case of irrigation, though it is somewhat less significant. Another explanatory factor, namely, the variance of agricultural production used in place of the percentage area irrigated, seems to have a significant negative effect on the agricultural wage rate. Moreover, non-agricultural wages, whether referring to casual non-agricultural labourer's or full time industrial labourer's wages, have a significant positive effect on the wage rates for agricultural labour. Besides, there may be still other factors which affect both real and money wage rates. The level of agricultural wage rate in a village is observed to respond positively to the intensity of cropping and the non-agricultural wage rate and inversely to the degree of concentration in the distribution of cultivated area. Further, in village that is favourably placed in terms of location and communication wages tend to be responsive to a greater extent to change in non-agricultural sector labour market conditions. It is found that moderate degree of positive relationship across the villages exists between the level of non-agricultural wage rate and the location and communication factor characterising the village. The price variable seems to have no significant effect on the wage rate for casual agricultural labour. Thus a significantly large proportion of the variation in agricultural wage rates responds positively to the intensity of irrigation or cropping and wage level for non-agricultural labour while negatively to some index of the supply and the bargaining position of
agricultural labour, the degree of concentration in the distribution of cultivated area or the proportion of non-cultivating or poor cultivator households.

B.D. Parmar 23 analysed spatial wage-differentials obtaining in agricultural sector and influencing factors thereof for the period of three years i.e. 1970-71 to 1972-73 for all the six sub-regions of Saurashtra. The author analysed spatial wage differentials with the help of some important variables viz. (1) percentage number of operational land holdings of above 3 hectares, (2) per hectare land productivity in terms of yield of total foodgrain crops (3) per hectare land productivity in terms of yield of groundnut, (4) per hectare land productivity in terms of cotton, (5) intensity of cropping (6) percentage of agricultural labourers in total number of agricultural. He came to the conclusion that (1) merely a larger size of operational holding does not influence the wage rate by shifting demand curve to the right unless it is provided irrigation and other necessary inputs; (2) higher proportion of irrigation facilities leads to increase in cropping intensity and land productivity. Thus irrigation has positively effects on wage rates through increase in demand for labour. However, irrigation as a variable is not powerful enough so as to affect wage rate significantly. Thus the variable of percentage of agricultural labourers in the total number of agricultural worker in rural areas on the supply side

and the variable of proportion of irrigation area to cropped area on the demand side are the factors that are responsible for spatial wage differentials in agricultural sector of Saurashtra Region.

G. Dasaradha Rama Rao in his study found out variations in the level of agricultural wages in 63 talukas of Andhra Pradesh with the following variables (a) gross value of agricultural yield per hectare (b) gross value of agricultural produce per labour (c) net area sown per worker (d) gross cropped area per agricultural worker, (e) area irrigated percentage, (f) percentage of workers in the total population (g) percentage of agricultural labourers among total agricultural labourers (h) percentage of labourers in household industries (i) percentage of backward castes and tribes in total population. He finds out through regression analysis that factors that affect agricultural wages have positive relationship with per worker agricultural productivity and percentage of workers in the population has a negative effect. But in the backward regions with high land labour ratio, per worker productivity has no positive effect on wages rates.

Manabendu Chattopadhyay in his study found out difference in wages received by purely agricultural wage earners viz. casual


hired labourers and annual farm servants in six regions. He found out that daily wage rate of an annual farm servant is higher than daily wage rate of casual labour in the agriculturally better endowed regions in terms of intensive cultivation, cropping pattern, use of farm machineries, etc. in Punjab, Kerala, Uttar Pradesh, and Andhra Pradesh while in the less developed regions of Orissa, Assam and to some extent West Bengal, the average daily wage rate of an annual farm servant is lower than that of a casual labour.

B.B. Patel in his study tried to examine (1) the pattern and magnitude of population's dependence on agriculture and the change in the structure of rural work force; (2) the impact of such change in labour supply on the movement of nominal and real agricultural wage rates during 1960s and the end of 1970s for districts within the state of Gujarat. He found out that the change in the structure of rural work-force, the change in the structure of land holdings has been to enhance significantly the supply of wage paid labour to agriculture during the 60s. The trend probably continued during the 70s. But the relative pressure on land during the 70s seems to have grown at a slower pace than that during the 60s. The effect of these changes in labour supply to agriculture is perceptible on wage rates in

agriculture. During the 60s, the money wage rate in agriculture increased at a lower rate of 6.52 percent per annum. During the 70s, the money wage rates increased at 11.12 percent per annum compound. The real wage rate over the sub-periods of 1960s, 1970s and 1960-78 showed fluctuations primarily caused by periodic jerks in cost of living or in prices of coarse cereals. Thus the failure to stabilise prices of some essential commodities seems to be the main cause of dips in real wage of agricultural labourers rather than failure of money wage to rise. Such decline in real wage in a particular year is due to unorganised nature of the labour market. In spite of these periodic shocks, the overall trend in real wage rate is one of slow growth during the 60s and medium rate of growth in 70s. On the whole, the real wages in agriculture have improved during the period under consideration despite significant expansion of agricultural workers in the state.

S.V. Sethuraman attempts to measure the extent of rural underemployment between different seasons by regions of India in selected year of 1950-51, 1956-57 and 1964-65 - using variations in wage rate for agricultural and non-agricultural labour after briefly reviewing the NSS data on seasonal employment and unemployment. He came to the conclusion that the extent of unemployment, measured in terms of the divergence between the

peak and the going wage in the market, shows substantial variations between different "seasons" of the year as well as between different regions. Such variations are greater for females than for males. However, on the average wage rates in the slack season tends to be 25 per cent lower than that in the peak season for both males and females at the all India level. Secondly the wage rate for non-agricultural operations is generally lower than that for harvesting or transplanting operations or the peak wage rate of the year. The non-agricultural wage for male agricultural labour is generally 20 per cent or less below the wage earned during the peak agricultural season, correspondingly the non-agricultural wage for female shows much wider variations. But if the wage rate for non-agricultural labourers is deflated by the wage rate for agricultural labourers for all agricultural operations, then the non-agricultural labourers are generally observed to receive a better average wage than do agricultural labourers. In other words, unemployment among agricultural labourers appears to be more severe as compared to non-agricultural labourers.

Harihar Bhakta\(^{28}\) in his study, analyses the influence of the historical development of production on wage rates at micro-regional level. He used primary data collected from all households of nine villages, three from each of the districts

(Saran, Siwan and Gopalganj) selected at random for the period of July, 1974 to June 1975 in connection with the study of "Agrarian Relation in North West Bihar". He found that there is weak positive relationship between the productivity of labourer and the wage rate. Facilities of canal irrigation, production has gone up more than two times (chaphawa village), but their wage rates have not improved. It is lowest while output per labour is higher. This is because the feudal influence in the form of socio-economic coercion consequent on indissoluble bond has prevented wage rates to follow the trend of development and productivity in the village. But there are some villages where tractor, and output per labour is higher, hence they are in the category of higher wage rate villages. Thus on the basis of analysis he concludes that productivity has positive response on wage rates only in post-feudal capitalist production relations where labourers are free to sell their labour power. In pre-capitalist semi-feudal production relations, direct producers do not succeed in raising their wage rates in turn with productivity because free forces of demand and supply became weak.

V.N. Misra and S.B.L.Gupta have examined (1) the trends in money wages, real wages and productivity for the period 1960-61 to 1968-69. (2) district wiser analysis of wage-productivity

relationship over time, and (3) important factors determining the wage level at a point of time (1968-69) among districts of Gujarat. To find out factors affecting wage rates they have taken into consideration several variables other than productivity such as distribution of land holdings (measured by land concentration ratio) irrigated area, availability of pump-sets, tractors and availability of agricultural labour. The important conclusions are as below:

1. Money wages increased over time in all the districts. But wages in real terms, declined in all the districts except Ahmedabad and Surat. However, in most of districts the productivity has also shown an increase, which is slightly lower than the increase in money wages.

2. The change in productivity have not influenced the real wages. Similar in the case with the money wages except for Jamnagar, Bhavnagar, Amreli and Baroda where it is influenced by the productivity changes probably due to the fact that there has been piece rate systems of wages particularly for harvesting of groundnut and cotton in these districts.

3. All the variables have the expected sign. Of course, only the availability of pump-sets and agricultural labour turn out to be significant. Pump-sets has positive sign for its coefficients, whereas in agricultural labour the coefficient have negative sign, indicating that the wage rate responds
positively to the variations in the availability of pumps and negatively to the agricultural labourers.

A similar type of observation has also been found by R.K. Pandey and U.N. Dixit\textsuperscript{30}. Their study is based on data furnished by the farm management data, for Ferozepur district (Punjab), for the periods 1954-57 and 1966-70. They examined the variation in productivity of labour and its wage and came to conclusion that during the mentioned period, wages rose by 130 per cent while the consumer prices increased approximately by 93 per cent. Some of the increase in wages might be attributed to the rise, though irregular, in the productivity.

S.S. Grewal and H.S. Bal\textsuperscript{31} examine the trends in real wage rates separately for three operations, namely ploughing, weeding, and harvesting for the state of Punjab for the period 1956 to 1972. The analysis reveals that the increase in the real wages was not significant in the pre-green revolution period for the operations of ploughing and harvesting. It was significant for weeding operations only. Thus, on the whole, the real wage rates showed no increase during the period 1956 to 1972, while the rise in


real wage rates was highly significant during the period of the green revolution.

Moreover, the wages follow a clear-cut seasonal pattern. There was a marked upward trend in the wage rates during the month of April and May while during the remaining months of the year, there were minor ups and downs in the seasonal index with no definite trend. The new technology in agriculture has dampened the fluctuations in the seasonal pattern of wages and also lengthened the period of hike in the wage rates from April to May in the pre-green revolution period to April-May-June in the green revolution period.

T.K. Mohanti\(^{32}\) examine the behaviour of wage rates in 15 districts of West Bengal for the period 1960-61 to 1965-66. Some of the broad conclusions of his study on the movements in wage rates are that while money wage rates in all the districts of West Bengal have increased during the said period, the real wage rates, due to the high ACPI, have decreased in all the districts except Nadia during this period. Secondly, in terms of money wage rates some of the districts of West Bengal registered a higher increase over some states, while in terms of the real wage rates no district could get a better position over other states. Finally, West Bengal had less inter-district disparities than the disparities of the inter-state level.

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R.K. Lahiri\textsuperscript{33} has examined the impact of HYVP on rural labour market by considering the 15 states of India. His study reveals that although the new strategy has substantially reduced unemployment among agricultural labourers in several states, its impact on the wage level of agricultural labourers is not very clear. The impact of HYVP on wages is likely to be felt most during the sowing and harvesting seasons.

Ravinder Nath Soni\textsuperscript{34} examines the impact of the green revolution on the absolute as well as the relative economic position of the rural labour, especially the agricultural labourers and non-agricultural labourers, of state of Punjab, covering the period 1965 to 1969. He finds that the agricultural revolution have brought about an increase in both money as well as real wages of the agricultural and non-agricultural rural labour. Though wages of non-agricultural labour have increased at a higher rate as compared with those of the agricultural labour. Secondly, rise in wages, however has not been uniform for all process involved in agriculture. The rate of rise of money as well as real wages, has been much lower in case of ploughing, threshing, sowing than in the case of harvesting, where a rise has been the highest.


Thirdly the share of the agricultural labour in the social income has increased in absolute terms. In relative terms, its share has gone down as compared with that of other factors of production. Large farms have played an important role in bringing about this change.

H.R. Sharma, examines the trends in the agricultural money/real wage earnings, the effects of rising agricultural productivity on money/year wage earnings, male/female differentials in the real wage earnings and number of employment days available to male and female agricultural labour on the basis of agricultural/rural labour enquiry reports (RLES) data for the period 1956-57 to 1983 covering 16 states of India. He concluded that the daily money wage earnings of both the adult male and female agricultural labour have increased continuously between 1956-57 and 1983 in all the states, but the trends in the real wage earnings are, however, mixed, i.e. real wage earnings of both categories of labour increased between 1956-57 and 1977-78 in the majority of the states, followed by a decline of varying degree between 1977-78 and 1983. Consequently, taking a long period view, in as many as nine states, namely, Assam, Bihar, Karnataka, Madhya Pradesh, Orissa, Jammu & Kashmir, Punjab, Uttar Pradesh and West Bengal, the daily average real wage earnings in 1983 were lower as compared to those in 1956-57. Though there were differentials in

the real wage earning between adult male and female labour but this gender differentials in the real earnings have tended to narrow down since the beginning. Besides, this rising level of agricultural productivity affects the money/real wage earning favourably. Moreover, the number of employment days available to male and female labour, despite fluctuations from one period to other, were significantly higher to 1983 compared with 1956-57.

II.3 Conclusions

This chapter focusses the light on the various studies of agricultural wages. Most of the studies deal with the following points: (1) trends in money and real wages, (2) seasonality in wages, (3) development of and agricultural wage rates, (4) the impact of new technology (green revolution) on labour earnings in rural area, (5) spatial (inter-regional) and temporal variations in wages and (6) factors determining agricultural wages.

The findings of the comparative analysis between money and real wages of agricultural casual labour by some researchers show that in several parts of the country there is no significant trend in real wages though money wage rates have rising trend. In many regions there is a decline in real wages whereas in some regions they moderately increased or remained stagnant. The money wages, though rising, lagged behind commodity prices and cost of living. Thus the meagre annual monetary gains of the agricultural labour have been taken away by the price rise. However, from this it may be concluded that the economic position of the agricultural
labour has not deteriorated any further, rather it has marginally improved. It is also noticed in some studies, that the rates of growth of money wages are higher in the low wage pockets, though some other studies present a contrary picture.

Some studies reveal that the wage earnings, wage rates and employment of the casual labour have gone up since the introduction of HYV technology. New technology has not only pushed up the employment and productivity per acre, but also agricultural wages with the result that the workers are better off.

An attempt is made by some researchers to show that green revolution technology has affected the earnings and employment of agricultural workers differently in different regions of India. The green revolution has significantly contributed to increase in wages and wage incomes of hired labour though real wage rates have not contributed to uplifting the standard of living condition of agricultural labour as the real wages have not increased enough. It means that agricultural labourers did not benefit from the agricultural revolution, primarily due to inflationary pressure on the economy.

Some studies also show that wage rates of agricultural labourers are high in those situations where mode of development and allied activities tend to be comparatively high. The findings of the studies support the view that development of region has positive relationship with agricultural wage rates. In some areas, however, the correlation between real wages and increase in agri-
cultural production is found to be weak and statistically insignificant.

Some researchers have observed temporal, seasonal, spatial labour groupwise, sexwise and agewise, farm operationwise and gender disparities in wage rates which differ from state to state. One of the study pointed out that caste, sex and operation play an important role in determining the agricultural wage rates, while land distribution and land holdings also play an important role in fixing agricultural wage rates, but in the developing economies the differences in wages in different regions may be due to variation in their characteristics. The main variables which influenced agricultural wage rates are the ratio of agricultural labourers to total rural workers, intensity of cropping, man land holding ratio, ratio of gross irrigated area to gross cropped area, man land ratio, the stage of employment opportunities other than agriculture migration of labour force and productivity. The studies on the whole provide support for the effectiveness of market forces of demand for and supply of labour in explaining wage differentials prevailing in agricultural sector.

The broad conclusions of the studies are that the absolute and relative shares of the weaker sections in rural areas have been falling in most parts, and the legislative and other action programmes have failed to prevent this deterioration.