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IMPACT OF NEW AGRICULTURAL TECHNOLOGY ON LABOUR EARNINGS IN DISTRICT KANPUR, UTTAR PRADESH

RAM IQBAL SINGH

Professor of Agricultural Economics

AND

R. KUNWAR

Lecturer in Agricultural Economics
Division of Agricultural Economics and Statistics
U.P. Institute of Agricultural Sciences, Kanpur-2

SUMMARY

The present investigation on the impact of new agricultural technology on labour earnings in district Kanpur, Uttar Pradesh was undertaken in the year 1973-74 to study the impact of new agricultural technology on changes in labour earnings (before and after the Green Revolution and in agriculturally developed and under-developed areas), seasonality in labour earnings and spread of labour earnings over different farm operations. For the purpose, 96 agricultural labourers from two technology areas—so called green revolution or new agricultural technology and sub-technology areas, 48 from each area, randomly selected were personally interviewed. From the study it could be observed that the labour earnings per annum for agricultural labour with land in the new technology area in comparison to its counterpart did not increase much in spite of increase in wage rate. This was due to less number of days spared for work on other farms and finding more work on their own piece of land as a result of easy availability of irrigation facilities in the new technology area. The earnings of the permanent and other casual labour between 1964-65 and 1973-74 in both the areas of study showed an increasing trend. The earnings particularly of the casual labour in the new agricultural technology area were higher due to more employment and high wage rate as compared to those sub-technology areas. The annual earnings for the casual male, female and child labour for the year 1973-74 in new technology and sub-technology areas were calculated as Rs. 1,008 and Rs. 714. 00, Rs. 729. 60 and Rs. 585. 00 and Rs. 700. 80 and Rs. 512. 40 respectively.

The seasonality in labour earnings is comparatively less in the new technology area than in the sub-technology area mainly because of fair spread of cropping pattern over the different months of the year in the former area. The seasonality in the case of female and child labour earnings is more in the sub-technology area as compared to the new agricultural technology area and at the same time it is of high order in both the areas in comparison to male labour earnings. This is because male labours are equally required for all the farm operations throughout the year while female and child labours are more utilised for specific purposes, *e.g.*, weeding and paddy transplanting, etc. The labour earnings for irrigation, manuring, interculture and harvesting are higher in the new agricultural technology area in comparison to the sub-technology area simply because of high cropping intensity in general and about 20 per cent area under multiple cropping on the large farms in particular. The labour earnings even in the new technology area for ploughing and transportation operations are much less as compared to that for sowing and threshing because these operations are mechanized, but the large and medium farms are only partially mechanized. The labour earnings for the harvesting operation in both the areas are the highest which is mainly because of high wage rate on the one hand and on the other no machine is being used for this operation. The period of performance for this operation is also comparatively less which creates a shortage in labour supply at the harvesting time.

WAGES AND EMPLOYMENT OF AGRICULTURAL LABOURERS IN UTTAR PRADESH AND PUNJAB

G. S. RAM AND C. B. SINGH

Division of Agricultural Economics
Indian Agricultural Research Institute, New Delhi-12

SUMMARY

The problem of India's poverty is essentially the problem of its nearly 50 million agricultural labourers. Numerous measures taken in the past to circumvent this problem have not been of much avail. The employment and earning position of agricultural labourers is highly disappointing. The

main objective of the present study is to devise certain policy measures by analysing employment, wages and earnings of agricultural labourers in three selected districts, namely, Deoria and Muzaffarnagar in Uttar Pradesh, and Ferozepur in Punjab. The necessary data have been gleaned from the Studies in Economics of Farm Management of these districts, and the Indian Census, 1971. The study reveals certain interesting facts. In Ferozepur, the size of agricultural labour force is very small and the acreage of tilled land is substantially large. In Uttar Pradesh districts the picture is just the opposite. The availability of employment to both family and hired agricultural labour per unit of cropped area is highest in Deoria and very low in Ferozepur and Muzaffarnagar. This is attributable to high cropping intensity, labour-intensive paddy and sugarcane cultivation and negligible use of major farm machines in contrast to large-scale labour-displacing mechanization and also less labour-absorbing crops in Ferozepur. The total employment of farm labourers, is, however, very high in the district of Ferozepur due to its enlarged cropped acreage. In the districts of Uttar Pradesh, the availability of annual farm employment is very scanty. The state of agricultural labour surplus in the districts of Uttar Pradesh has resulted in the sagging of wages in the State and its deficit position in Ferozepur has pushed the wages high in this district. In all the three districts, the existing wages are quite comparable to the statutorily prescribed minimum wages. The annual earning of an agricultural labourer in Uttar Pradesh is around Rs. 250 in comparison to an incomparable high figure of Rs. 2,200 in Ferozepur. In conclusion, the analysis suggests that the statutory safeguard in terms of minimum wages is not an effective proposition for amelioration of the fate of agricultural labourers. Market forces determining wages cannot be undermined by Acts and notifications. The intensiveness of farming or resultant green revolution does not appear to contain enough potential for solving labourers' problem. The ratio of cropped land and agricultural labour has got to be increased. There is not much scope for manipulating the numerator or enlarging the cropped acreage. Reduction in the magnitude of the denominator, *i.e.*, agricultural labour force is the lone choice. Relief of mounting pressure of agricultural labourers on farm land and their resettlement in other vocations, namely, ancillary agricultural occupations, cottage or rural based industries, could possibly be the only enduring solution to the cancerous economic malady.

AN INTER-REGIONAL STUDY INTO THE SEASONALITY OF AGRICULTURAL WAGE
RATES WITH PARTICULAR EMPHASIS ON ITS RELATIONSHIP
WITH THE LEVELS OF EMPLOYMENT

J. R. GUPTA

*Centre for Economic and Social Research
Punjab University, Patiala*

SUMMARY

The present study was undertaken with a view to examine the inter-regional and inter-seasonal variations in wage rates, and to study the relationship between the wage rates and the intensity of employment in different seasons. The study was conducted in district Gurdaspur in Punjab in 1972. For the study stratified random sampling technique was used and it covered the households of wage paid workers only. A wage paid worker household was defined as one whose principal activity was wage paid employment or whose at least one member was ready to work for wage paid employment for a continuous period of three months. The data analysed in the study pertained to only casual worker of such households. The study observed wide variations in the overall wage rates which varied from Rs. 4.23 to Rs. 5.90. Whereas the agricultural wage rates varied from Rs. 4.55 to Rs. 6.32, the non-agricultural wage rates varied over a narrow range of Rs. 3.99 to Rs. 5.15 in the different regions. The range of variations in the agricultural wage rates was even more profound in the different seasons. Further the movements in the agricultural and non-agricultural wage rates were almost coinciding. The analysis of variance also confirmed the above phenomenon. In respect of non-agricultural wage rates, no significant inter-period (or within region) variations were observed. Inter-regional non-agricultural wage rates, however, varied significantly. The overall wage rates and the agricultural wage rates varied significantly both inter-regional and inter-period. Further no significant correlation between the intensity of employment and wage rates could be established. In view of these facts, it was concluded that although it might be feasible to prescribe a uniform wage rate throughout the year in some regions, yet the same could not be applied for the different regions in a district and much less in State or the country as a whole.

IMPACT OF GREEN REVOLUTION ON EMPLOYMENT, EARNINGS AND WAGE RATES (A CASE STUDY IN DISTRICT AMRITSAR)

J. S. CHAWLA

*Lecturer in Economics**Post-Graduate Department of Economics, Khalsa College, Amritsar*

SUMMARY

This paper attempts to examine the effects of green revolution on the volume of employment, wage earnings and wage rates of agricultural labourers in district Amritsar in Punjab at three points of time, *i.e.*, 1966-67 (pre-adoption period), 1970-71 and 1973-74 (post-adoption periods). Specifically, the broad objectives of the study were to (i) examine the impact of High-Yielding Varieties (HYV) technology on the employment of labour and (ii) analyse the trends in employment, earnings and wage rates of permanent and casual labourers. To meet the objectives of the study, required data were collected from randomly selected 120 farmers, 40 small (with land upto 12.50 acres), 40 medium (with land between 12.50 and 25 acres) and 40 large (with land above 25 acres), spread over eight villages through a pre-tested schedule using survey method. Farmers were the ultimate units of study. On different average holdings, the cropping intensity increased by 11.3 or 19.8 per cent in 1970-71 over the pre-adoption year (1966-67) and further increased between 5.88 and 11.72 per cent in 1973-74 over 1970-71. The area under wheat and paddy increased appreciably in 1970-71 over the pre-adoption period on the three size-groups of farms and it further increased in 1973-74 over 1970-71.

Due to greater cropping intensity made possible by irrigation, use of farm machinery and high-yielding varieties of crops, the overall labour requirements increased on different farm situations. On per sown acre basis, when the influence of crop plan was eliminated, the labour requirements from farm to farm showed less variations, but the use of family, permanent and casual labour increased on all size-group of farms in all the three periods. Interestingly enough, family labour got more employment on all farms, especially on the small-farms, while the increase in the employment of casual labour was more marked on the medium and large farms.

The study revealed 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 employment and productivity per acre, but also agricultural wages with the result that the workers are better off. The share of the casual labour in the variable costs has increased but it has lagged behind the spurt in the general price index or consumer price index numbers. The demand for permanent farm labour has gone up on all the farms. Similarly, the annual earnings of permanent farm labourers increased by 38 per cent from Rs. 1,630 in 1966-67 to Rs. 2,260 in 1973-74. On the whole, it is observed that with the induction of HYV technology and associated modern inputs, the volume of employment, earnings and wages in the rural areas have gone up during the last eight years.

EMPLOYMENT, WAGES AND MOBILITY OF RURAL LABOUR IN HARYANA

RAJ K. SHARMA, P. SINGH

AND

A. C. GANGWAR

*Department of Economics**Haryana Agricultural University, Hissar (Haryana)*

SUMMARY

The objectives of the study were (1) to examine the employment pattern of rural workers, (2) to compare the wages of agricultural and non-agricultural labourers, (3) to examine the preference of labourers between labour and leisure and, (4) to study the mobility of agricultural labourer.

Two districts, Karnal and Mahendergarh, representing irrigated and unirrigated areas were selected purposively. From 15 selected villages of Karnal district 110 households, 714 labourers and from 12 villages of Mahendergarh district 115 households, 744 labourers were interviewed personally with the help of well structured schedules. 251 and 284 agricultural casual labourers from the two selected districts out of the total selected persons were interviewed. It was observed that the majority of the

labour force was employed for less than 120 days during the six months under reference. About 35 per cent and 60 per cent of agricultural workers were under-employed in Karnal and Mahindergarh districts respectively. The majority of the agrarian labourers were working in the wage range of Rs. 3.01 to 4.00 in both the selected districts. The wage rates for non-agrarian workers were better in Mahindergarh district than in Karnal district.

Not even a single labourer was ready to work over time for less than an hour and wage up to Rs. 1.50. The workers in Karnal district were more interested in extra hours of work than Mahindergarh district because of their less bargaining power for high wages. A maximum number of labour force was desirous to do work within the village rather than going outside. Although the labourers were poorly paid in both the districts, their mobility rate was very low. Labourers in Mahindergarh were not ready to work below the wage of Rs. 2.00. This suggests that the reservation prices for work was more for labourers of Mahindergarh district as compared to Karnal. The workers of Mahindergarh district in comparison to Karnal showed a trend of not hesitating to do work even outside the district provided they were given good wages.

GREEN REVOLUTION AND CHANGING TRENDS IN WAGE STRUCTURE OF LANDLESS LABOURERS IN RURAL HISSAR (HARYANA)

M. L. SHARMA, D. S. NANDAL

AND

CHANDER BHAN

Haryana Agricultural University, Hissar (Haryana)

SUMMARY

In order to know the impact of green revolution in a State like Haryana where green revolution has taken roots, an analysis of the trends in the money wages, real wages, consumer price index for agricultural labour was done. The results were verified by a study of the socio-economic conditions of 50 landless labour households in a village (Kurri) near Haryana Agricultural University, Hissar.

The results indicated that the wages paid to the casual male labourer increased relatively faster than the general consumer price index for agricultural labour. Thus a slight increase in the real wages of agricultural labour for different farm operations was experienced during 1960 through 1973. Nevertheless the consumer price index for agricultural labour in terms of food increased at the pace of money wages of agricultural labour. Thus the real wage rates have been practically static over times. Consequently the sharp rise in food prices completely neutralised the entire benefits of the increase in money wages in Hissar district. Surprisingly the real wages of skilled labour (blacksmith and carpenter) actually declined marginally during this period.

The assumption that the green revolution would ensure all the year round employment to agricultural labourers was not realised in the study area. On an average, a casual male labour got employment for 258 days and 59 per cent of them were below the average figure. The employment opportunities were found not only inadequate but also highly seasonal. Thus the authorities have to think of providing gainful employment opportunities during the lean months.

The average annual expenditure per household in 1972-73 was Rs. 2,533 against the average annual income of Rs. 2,160 leaving a debt of Rs. 473 per family. All the 50 sample households were observed under debt. If a per capita monthly income of Rs. 40 at current prices is taken as the bare minimum for living, all the 50 landless labour families were found below poverty line. Further poor housing conditions are in-built in the village set-up. To lift them from the whirlpool of the existing deplorable plight, a gigantic effort is needed on the part of the government. New technology, rural industries, rural works programme of marginal farmers and agricultural labour development agencies, programme of minimum needs, better working and housing conditions, education in arts and crafts, etc., will probably help them to extricate themselves from the mire of the existing shoddy socio-economic environment.

TREND IN AGRICULTURAL WAGES IN UTTAR PRADESH

V. K. PANDEY AND R. N. PANDEY
Department of Agricultural Economics
G. B. Pant University of Agriculture & Technology
Pantnagar, District Nainital (U. P.)

SUMMARY

The paper aims at (i) the comparative study of the levels of agricultural wages in Meerut and Varanasi districts of Uttar Pradesh and (ii) the study of the trend in agricultural wages. Linear least square regression is fitted on both money and real wages separately for each district on the data relating to the period from 1962-63 to 1972-73 in order to examine the trend.

It is observed that the actual levels of both money and real wages have been quite high in Meerut district as compared to Varanasi district, average money and real wages being Rs. 2.92 and Rs. 1.88 respectively, in Meerut and Rs. 1.61 and Rs. 1.08 respectively in Varanasi during the period under study. The scarcity of labour and relatively higher agricultural productivity in Meerut district in particular, and the western region of the State in general, as compared to the Varanasi district in particular, and the eastern region of the State in general, may account for this inter-district variations in the wage rates.

The following time-trend equations are obtained :

$$W_m = 1.9171 + 0.1679***T \quad ; \quad r^2 = 0.86$$

$$W_v = 0.9327 + 0.1586***T \quad ; \quad r^2 = 0.69$$

$$w_m = 1.4278 + 0.0360**T \quad ; \quad r^2 = 0.47$$

$$w_v = 0.8839 + 0.0380*T \quad ; \quad r^2 = 0.24$$

Where,

W = money wages; w = real wages; m = Meerut; v = Varanasi; T = trend.

***Significant at 1 per cent level. **Significant at 2.5 per cent level. *Significant at 10 per cent level.

There is clear increasing trend in the money wage rates in both the districts, the annual rate of increase being Re. 0.17 in Meerut and Re. 0.16 in Varanasi. Although the trend itself explains only less than half of the annual variations in the real wages, these have also increased at the rate of Re. 0.04 per annum in both the districts. The rate of increase in the real wages as compared to the money wages is just marginal. These results show that about three-fourth of the little annual monetary gains of the agricultural labour has been taken away by the price rise. However, from this rate of increase in the real wages, it may be concluded that the economic position of the agricultural labour has not deteriorated any further during the period under study, rather it has marginally improved.

A STUDY OF THE LEVEL OF REAL EARNINGS OF AGRICULTURAL
 WORKER IN BIHAR (1961-70)

S. P. SINHA
University Professor and Head

AND

B. N. VERMA
Lecturer in Economics
University Department of Economics
Bihar University, Muzaffarpur, Bihar

SUMMARY

An attempt has been made in this paper to study the effect of rising prices on the level of real earnings and on the cost of living of the agricultural workers in Bihar during the last decade, i.e., 1961-70. A comparison of the levels of average annual money earnings and real earnings of the agricultural

workers has been made with that of industrial workers in Bihar to show the wage differentials between the two. It is also indicated how money earnings of the two group of workers are lagging behind commodity prices or cost of living and the gap prevailing between money earnings and real earnings. The effect of rise in prices on the standard of living of workers in Bihar is felt on both the agricultural and industrial workers, as a rise and fall in food prices affect the cost of living directly and to a greater extent. As for instance, the food prices index (base year 1939=100) increased from 515.9 in 1961 to 1108.2 in 1969 with simultaneous increase in the cost of living index from 512 to 836 during the same period. This of course is not supposed to have similar effects with the same intensity upon the two groups of workers as their level of money earnings differ. The average annual money earnings of an agricultural worker is 30 per cent (Rs. 681) of the average money earnings of an industrial worker. The average rate of increase in the level of money earnings of an industrial worker is 27 per cent while that of an agricultural worker is only 15.2 per cent. The effects of rise in food prices and the cost of living are therefore more vigorously felt by the agricultural workers. A comparison of the indices of money earnings and real earnings of the two group of workers in Bihar, during the last decade, indicates that the level of real earnings of both the groups of workers has remained below 100, i.e., 75.6 (for agricultural workers) and 82.07 (for industrial workers) in comparison to their indices of money earnings, i.e., 134.7 and 146.1 respectively. This indicates that the money earnings of the workers in Bihar has not increased in proportion to the increase in the price indices (178.0 index of consumers' price). This again reflects that the agricultural workers with their lower level of money earnings have suffered most. On the whole, both the money and real earnings of agricultural workers have been very much less in comparison to the industrial workers. The main reasons for the low level of earning of the agricultural workers who constitute 23 per cent of the total working force in Bihar have been their weak bargaining capacity and utter absence of any organization or union to represent their interests.

A STUDY OF WAGES AND INCOME IN RURAL AREAS OF ORISSA

B. BHUYAN

*Lecturer in Agricultural Economics
Department of Agricultural Economics*

AND

M. CHAKRAVERTY

*Field Officer
Comprehensive Scheme on Cost of Cultivation of Principal Crops
Orissa University of Agriculture and Technology
Bhubaneswar (Orissa)*

SUMMARY

This study is conducted (i) to know the wage rate of different types of agricultural labourers for different type of operations in different districts of Orissa, (ii) to examine the trend of wage rate for different agricultural operations, (iii) to examine the growth rate in nominal wage rate and real wage rate and (iv) to analyse both the farm income and non-farm income per hectare in different size of farms in the State. A stratified three-stage random sampling with tehsil as the primary sampling unit, a cluster of three villages as the second stage unit and operational holding within the cluster as the third and ultimate sampling unit, has been adopted for the study. It is observed that during the last decade the real wage rate has remained more or less constant due to the steep rise in the cost of living index. The wage rate varies from coastal districts to other districts of the State. The variation in the wage rate depends on both the demand for and supply of labour. In the peak period of demand for labour, i.e., harvesting and intercultural operations, female and child labourers are employed in the field. The wage rate for the above operations is generally more than that for other operations. The wage rate trend during the last decade shows that the money wage rate has increased by hundred per cent, whereas the real wage rate has remained constant. The study on income shows that as farm size increased gross farm income per hectare both in the irrigated and non-irrigated areas tended to decline after a point. In the unirrigated areas hiring out of family and bullock labour constitutes the important source of income. Due to risk and uncertainty people in the unirrigated areas depend more on service and business for their income.

EMPLOYMENT AND EARNINGS OF AGRICULTURAL LABOUR IN ASSAM

UMANANDA PHUKAN

Agro-Economic Research Centre, Jorhat, Assam

SUMMARY

An attempt is made in this paper to examine the level of wage paid employment and income of the agricultural labourers in the Nowgong district of Assam. The study is based on a sample of 40 agricultural labour households selected from ten villages of two agriculturally good development blocks of the district. The reference years are 1969-70 and 1970-71. It was found that the male attached labourers were employed between a minimum of 90 days to a maximum of 305 days in 1970-71, as compared to between 210 to 284 days in 1969-70. The average man-days of employment for the male attached agricultural labour was 275. There were changes in the level of employment of the attached agricultural labourers since 1956-57. The level of employment of the casual agricultural labourers was lower. The average man-days of wage paid employment for the male casual agricultural labourers were within 90 to 250 during the year, the mean being 147 man-days in 1969-70 and 186 man-days in 1970-71. The average for both the years is 166 man-days as compared to 206 man-days reported by the Second Agricultural Labour Enquiry in 1956-57. This shows that the level of employment of the casual agricultural labour went down since then. The number of agricultural labourers has increased considerably since then but the employment opportunities have not increased.

The average per day earnings of the different types of agricultural labourers were considered. The wages were paid partly in cash and partly in kind. But due to increase in the prices of wage commodities the practice of payment of kind wages has been replaced by cash. This has in fact reduced the average earnings of the labourers. The average per day earnings of male attached agricultural labour was found to be Rs. 2.75 and Rs. 2.55 respectively for 1969-70 and 1970-71. It was Rs. 2.86 in 1969-70 and Rs. 2.38 in 1970-71 for the casual agricultural labourers. The wage rate was between 3.00 and 3.50 per day. The average level of income of the agricultural labour households was found to be Rs. 1,402 in 1969-70 and Rs. 1,556 in 1970-71. About 60 per cent of the agricultural labour households earned less than Rs. 1,500 per annum. The demand for higher wages is totally absent in Assam. In its place the demand for land for landless households is noticed. The Assam Government has launched a scheme of organizing Farming Corporations to settle landless section of the population.

NEW TECHNOLOGY AND AGRICULTURAL WAGES IN HIMACHAL PRADESH

G. D. VASHIST

*Economics Department**College of Agriculture**Palampur (Kangra), Himachal Pradesh*

SUMMARY

Green revolution technology has had affected the wages, earnings and employment of agricultural workers differently in different regions of India. The number of workers engaged in agriculture has also changed over the years. This underlines the need for an enquiry which brings out how the gains of new technology have been shared by different sections of society. The objectives of this study were: (i) to examine the pace of change in the size and composition of agricultural workers in Himachal Pradesh, (ii) to work out the trend in agricultural wage rates, and (iii) to study the impact of green revolution on wage rates. The relevant data were collected from different published sources at two time periods, the first representing the pre-green revolution period (1966-67) and the second after the green revolution period (1971-72). Trends in wages were studied for the period 1952 through 1971 as well. The straight line equation $Y = a + bt$ was used to measure the trend in wage rates. The findings bring out that the percentage of agricultural workers to total workers dropped from 80.7 in 1961 to 71.6 in 1971 whereas that of agricultural labourers increased from 1.4 to 4.3 during the same period in Himachal Pradesh. The area under labour-intensive crops expanded, labour employment opportunities increased and the money wages of all the agricultural workers, in general, went up after the introduction of new technology. Skilled labour gained in real wages as well. As against this, the increase in money wage rates of agricultural field labour only is a money illusion; in fact, the real wages of this class of labour shrank after the inception of green revolution technology in the Himachal Pradesh.

AGRICULTURAL WAGES AND THEIR RELATIONSHIP WITH COMMODITY PRICES
IN MADHYA PRADESH

M. C. ATHAVALE

*Research Officer
Agro-Economic Research Centre,
Jabalpur-4*

SUMMARY

The objectives of this paper were (i) to study the trend of wage rates of agricultural labourers, and (ii) to study the relationship between prices and wage rates. Secondary data on wages and consumer price index numbers for agricultural labourers were taken from various issues of the monthly journal *Agricultural Situation in India*. It was observed that the wage rate increased from Rs. 1.14 in 1960-61 to Rs. 2.15 in 1972-73. Further, it was observed that the increase in wages in the post-green revolution period was at a lower rate than the pre-green revolution period. The equation derived by fitting a second degree polynomial curve (Fisher and Yates) to annual wage rates was $y = 0.985 + 0.146x - 0.004x^2$. The significant values of 'F' ratio brought out the fact that the reduction in the rates of agricultural wages in the post-green revolution period was real. The correlation coefficients between indices of food prices and agricultural wages and indices of general commodity prices and wages were highly significant. The regression coefficients indicated that an increase of 10 per cent in the prices of food and general commodities resulted in an increase of the wages rates by 4.3 and 5.5 per cent only respectively. It can be concluded that agricultural wages are lagging behind the commodity prices. The regression equation for food is: $y = 76 + 0.43x$ and for general $y = 61 + 0.055x$.

TREND IN AGRICULTURAL WAGES IN MADHYA PRADESH

J. S. SISODIA

*Assistant Agricultural Economist
Tawa Pilot Project, Powarkheda
District Hoshangabad (M.P.)*

SUMMARY

The study covers the entire 43 districts of Madhya Pradesh and relates to the period from 1957-58 to 1968-69. Information about wages of black-smiths, carpenters, cobblers, ploughmen, sowers and transplanters and weeders, reapers and harvesters available on monthly basis was obtained from Annual Season and Crop Report. The pace of expansion of agricultural wages has quickened considerably after 1960-61. The overall picture of indices of agricultural wages showed an increase of about 41 per cent. The money wage rates did not keep pace with the sharp rise in the commodity prices. The index numbers of wages (overall) reached the peak level in the month of June in eleven out of the 12 years. The overall wages in general, remain high in the seasons of June-July, October-November and March-April of each year indicating the seasonal pattern of agricultural wages. The wages of the skilled labour showed a positive trend in 42 out of the 43 districts in the State while in the case of unskilled labour and for all agricultural wages, all districts showed a positive trend although the rate of increase was very low. The rate of growth per annum of skilled labour varies from Re. 0.40 at Hoshangabad to Re. 0.04 at East Nimar. Twenty districts have recorded higher rates of increase as compared to the State figure of Re. 0.14. As regards the rate of growth of money wages of unskilled labour, Narsimhapur district showed the highest rate of increase (Re. 0.17 per annum) followed by Re. 0.14 at Datia, Re. 0.13 at Guna, Re. 0.12 each at Gwalior and Hoshangabad. The rate of increase of overall wages has been found to be higher at Rewa district (Re. 0.02) per annum and lowest at Bastar being only Re. 0.03. Twenty-four districts have also shown higher rates of growth of overall wages than that of the State figure of Re. 0.066 per annum. The rate of rise in the wages of skilled labour (village artisans) has been much higher than that of the wages of unskilled labour. Irrigation and industrial development are likely to have a positive influence on the agricultural wage rate.

IMPACT OF GREEN REVOLUTION ON WAGES AND INCOMES OF HIRED LABOUR
IN IADP DISTRICT, WEST GODAVARI

V. T. RAJU

Project Executive (Economics)
National Dairy Development Board,
Anand

SUMMARY

It was viewed with optimism that the green revolution would create employment and increase the wages of labour in agriculture. However, there are conflicting views on the effects of the green revolution on employment and wages of labour. Since the green revolution increases output per acre, it would be interesting to study its effect on labour. With this objective, an attempt was made to find out the share of labour in green revolution in this study. More specifically, the objectives of the study were to examine the changes in the wages of hired labour from 1967-68 to 1970-71 and to find out the share of the hired labour in output in IADP district, West Godavari. Corresponding to the objectives, two hypotheses were proposed and tested. West Godavari district was selected for this study because it is one of the leading districts of the green revolution. The data was collected from the Benchmark and Assessment Surveys of the IADP West Godavari conducted in 1967-68 and 1970-71. Simple regressions of linear and Cobb-Douglas were fitted to find out the influence of the green revolution on the labourer's share in output. On the basis of the results of this study, it was concluded that there was significant increase in both the money wages and real wages for hired labour from 1967-68 to 1970-71 in the district. The money wages have shown a much higher rate of increase than the real wages, which may be due to the rise in the cost of living as measured by the consumer price index for agricultural labourers. It was also concluded on the basis of the regressions fitted that the increase from 1967-68 to 1970-71 in the wage incomes of hired labour was mainly due to the green revolution which increased output per acre in the district. The blocks which are upland areas, where there is no such green revolution, the increase in wages was less. Whereas the blocks which are deltaic and where there is much green revolution the increase in wages was substantially high. This clearly indicates that the green revolution has significantly contributed to increase in wages and wage incomes of hired labour in the district. The increased demand for labour generated by the green revolution as well as the consequent rise in wage rates may continue as far as harvesting operations are not mechanized. In view of the biological character of agriculture which raises output per acre, it invariably raises the bargaining power of labour for critical short duration operations such as harvesting. Besides, the rise in per capita income as a result of the green revolution may lead to withdrawal of some family labour from manual work which may raise the demand for hired labour as well as the supply price of such labour belonging to the small farm households.

WAGES, EMPLOYMENT AND INCOMES OF SMALL FARMERS IN MAHARASHTRA

JAGANNATHRAO R. PAWAR

Reader in Agricultural Economics
Mahatma Phule Krishi Vidyapeeth, Rahuri
District Ahmednagar

AND

V. K. GAYAKWAD

Planning Officer
Department of Agriculture
Maharashtra State, Poona

SUMMARY

An attempt has been made in the paper to analyse the employment, income and expenditure patterns of the weaker section in rural society over a period of time and thereby to study the extent to which the measures suggested for ameliorating the conditions of the weaker sections will be helpful in solving their problems. Due to several limitations only one constituent of the weaker section, *i.e.*, the small farmer has been considered for the present study. The study is based on information obtained from the two samples of small farmers separately for the years 1964-65 (in the year 1966) and 1971-72 (in the year 1972). The study revealed that the workers in the families of small farmers do not get sufficient work on their own farms and therefore, they are forced to seek employment outside the farm. Besides this, they remain unemployed for quite a long time during the year. This situation has not changed even after a passage of time period of seven years. The wage rates have increased only by about 58 to 60 per cent during the period while the family expenditure has increased almost by 103 per cent. Because of increase in the incomes from other sources the family income has shown an increase of about 101 per cent during the period. However, during both the years the family ex-

penditure exceeded the family income. An analysis into the employment on others' farms and wage earnings therefrom indicated that even though more than one-third of the total employment was on others' farms, the contribution made by wage earnings to total family income was less than one-fourth during both the years. The study indicates that the conditions of the small farmers have not changed at all during the period. On the contrary, the commodity prices and cost of living are increasing at a faster rate. Some measures for improving the conditions of the small farmers are, therefore, felt necessary. The study finally concludes that there is a need for creating employment opportunities in rural areas and increasing the wage rates of the workers. These measures would not only cause increases in the incomes of weaker masses but also would result in full utilization of the potential labour force for some productive works.

CHANGES OVER TIME IN THE LEVELS OF INCOME OF THE WEAKER-SECTIONS OF THE RURAL COMMUNITY

GANGADHAR BANDYOPADHYAY
I.C.A.R. Research Scheme
Department of Economics
Visva-Bharati, Santiniketan (West Bengal)

SUMMARY

In this paper an attempt has been made to show the changes that have taken place in the levels of income of the weaker groups of the rural community in the district of Birbhum, West Bengal. This weaker section of the population includes small farmers with holdings below 5 acres and agricultural labourers—attached and unattached. Comparisons have been based on three points of time 1955-56, 1960-61 and 1973-74. The pattern of cropping in the district of Birbhum had undergone some significant changes over the last two decades. These changes in the cropping pattern reveal that the small farmers in the district are trying to improve their levels of income and gradually coming into contact with the market. There had been also some remarkable changes in the yield rate. The yield of crops on the small farms had gone up due to the application of higher doses of fertilizer and manure and introduction of high-yielding varieties of seeds. The yield of paddy which was 640 kg. per acre in 1955-56 increased to 720 kg. in 1960-61. In 1973-74 the yield of paddy stood at as high as 1080 kg. per acre. The yield of wheat, onion, pulses had increased by roughly 68 per cent, 64 per cent and 41 per cent respectively. Potato, an important crop in this district exhibited an improvement in yield by 10 per cent and 47 per cent between the three points of time. Due to change in cropping pattern and yield, the income accruing from crop enterprises to both the marginal and small farmers appears to have improved appreciably.

Over the last two decades, some changes have also taken place regarding the mode of employment and wage payment. Formerly, farmers in this locality used to employ attached farm servant but now they engage labourers on contractual basis. This contractual labourers are paid on daily basis. The earnings both in cash and kind of a casual agricultural labour have increased from 1955-56. The same was true in the case of the attached agricultural labour. This increases in wage rates, however, do not indicate any improvement in the real income. The data show that the real income of both the attached and non-attached farm labour has declined. It has already been said that farmers in this region have recently discontinued the system of employing permanent farm servant. To reduce wage costs, they have introduced a new system of engaging labourer locally called *Lagari* which means continuous employment to a particular worker on daily wage payment. As a result, the earnings of the former farm servants now working as *Lagaris* have declined. Another change that has taken place in the countryside of Birbhum in recent years is the shrinkage of land-lease market. Crop sharing as a form of production organization is gradually losing importance. The evicted share-croppers are now working as farm labourers. Consequently, they are earning less now. It may be concluded that the economic conditions of the small farmers and marginal farmers have improved to some extent as a result of rise in crop yields initiated by the application of biological inputs. The farm labourers are worse-off now because of increase in price level and changes in the modes of employment. It is a matter of great regret that the agricultural labourers who are the main sources of production are not getting their due share.

TREND IN AGRICULTURAL WAGES IN SOME STATES IN INDIA

S. N. KUNDU
Research Scholar

AND

K. SAIN
Reader and Head
Department of Agricultural Economics
Bidhan Chandra Krishi Viswa Vidyalaya, Kalyani, Nadia (West Bengal)

SUMMARY

With a view to estimating the progress in agricultural wage rates, in general, as well as inter-crop and intra-crop variation in wage rates, data published by the Socio-Economic and Evaluation Branch, Government of West Bengal in Farm Management Study series published upto 1972 have been analysed. Wages data published by the Directorate of Economics and Statistics, Government of India and also in established journals and reports have been consulted for the purpose. Inter-State variation in farm wage rates have also been noted. It appears that average increment in money wage rates per day for farm workers in West Bengal is negligible for the period covered by the Farm Management Studies of the Government of West Bengal and this is reflected both by the straight line trend fitted for the purpose and by the index histogram drawn from original wages data. When money wages are deflated by Agricultural Consumer Price Index Numbers, farm workers of West Bengal are found to have a declining real wage over the years covered by the study. As between crops, wage rates have been observed to be relatively higher for the principal crops of paddy and jute grown widely in the State of West Bengal. Introduction of high-yielding varieties of crops seemed to have a welcome effect on agricultural wages. The fact that the State of Punjab records higher wage rates notwithstanding its traditional socio-political set up than Kerala with stronger organization among the labourers has to be explained by factors inherent in their respective economic, specially, tenurial set-up and outlook of the people and the Government towards farming, besides political motivations. Agricultural labourers are also observed to have enjoyed better wages in years of favourable monsoons and better crops.

THE PROBLEMS AND PROSPECTS OF MARGINAL FARMERS AND AGRICULTURAL
LABOURERS IN WEST BENGAL

M. G. GHOSH
Agro-Economic Research Centre, Visva-Bharati, Santiniketan

SUMMARY

An attempt has been made in this paper (i) to give a picture in respect of the enterprise and the material conditions of the marginal farmers and agricultural labourers and (ii) to suggest measures to help them to overcome the disabilities and ensuring their rehabilitation. The study is based on data collected from 8 villages in the district of Hooghly and one village each in the districts of Bankura and Burdwan. These villages were surveyed by the Agro-Economic Research Centre, Visva-Bharati in connection with the studies of (1) Problems of Marginal Farmers and Agricultural Labourers in the District of Hooghly, and (2) Social and Economic Implication of the Large Scale Introduction of High-Yielding Varieties of Foodgrains in the Eastern Region of India. The dependence on occupations other than cultivation was very high among the workers of the marginal farmers, which was, however, due to the fact that the lands they possessed were not sufficient to provide full time employment to all the workers and to maintain their families. The average yield of crops in the case of marginal farmers was lower than even the small farmers. Chemical fertilizers and pesticides were used in smaller quantities as compared to the small farmers. In respect of certain essential resources, for example, draught cattle and tools and implements, two extreme conditions were noticed about the marginal farmers. While several of these farmers suffered from lack of draught cattle and tools and implements, in the case of many others there were under-utilization of these resources. The per household and per capita incomes of these farmers were Rs. 2,610 and Rs. 380 respectively. Cultivation of land provided only 54 per cent of their total income. More than 70 per cent of the households were in debt, and about 50 per cent of the total borrowings were spent for consumption purposes. The share of institutional loans was very low in their case.

The conditions of the agricultural labourers were worse off than that of the marginal farmers. They were not only poor, but their conditions had deteriorated during the past decade. The per household and per capita incomes of agricultural labourers which were Rs. 741 and Rs. 151 in the year 1959-60, decreased (in real terms) to Rs. 560 and Rs. 106 respectively in the year 1972-73. The proportion of indebted households had also increased from 26 per cent to 92 per cent during the same period. The pattern of employment of agricultural labourers in two villages, one was progressive and the other relatively backward, showed that on an average a casual labourer (male) secured wage paid employment for 313 days in the progressive village as against 192 days in the backward village. The reasons are not far to seek. In the progressive village more than 70 per cent of the net cultivated area were irrigated more than once and the intensity of cropping was 1.70. The corresponding figures for the backward village were 14 per cent and 1.14. The wage rates were same in the two villages.

The solution of the problems of marginal farmers lies in improving the technology of cultivation. But the fragmented nature of their land holding acts as barriers to the adoption of improved technology. This problem can, however, be solved if the holdings are consolidated into one large block or a number of compact blocks and encourage them to form a co-operative farming society. As a result of the consolidation of lands, the larger units would offer better prospects for the introduction and application of technical innovations and for economies in the use of resources. In addition to these, measures have to be taken to encourage them to take to dairying and poultry keeping on co-operative basis so as to provide them additional incomes. As regards the agricultural labourers, public works programmes have to be taken to provide them employment in the slack agricultural seasons. However, the extent and pattern of employment of the agricultural labourers in the progressive village indicate the possibility of increasing employment by providing irrigation water which would make two-crop rotation possible in the backward area, and by increasing the employment days the incomes of the agricultural labourers can be raised.