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RAPPORTEUR'S REPORT

ON

EMPLOYMENT, PRODUCTIVITY AND WAGES IN AGRICULTURE

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There are 24 papers on the subject of "Employment, Productivity and Wages in Agriculture." A large volume bears a testimony to the live interest of the profession in the problem. The problem of unemployment raises intricate issues both at the theoretical and empirical level. All of them are reflected in due measure in the papers submitted for discussion at the Conference.

At the outset, a brief recapitulation of the background of the problem would be helpful. In regard to unemployment, Keynesian model with equilibrium at level below full employment constituted a first major development of economic thought. A second major step in economic thought relating to unemployment was taken when it was shown by Ragnar Nurkse that unemployment instead of being an obstacle to economic growth could be used as a positive assistance to it. Whereas, Keynes attempted the explanation and the remedy for the problem of unemployment which was a temporary phenomenon and which obtained during economic depression, Nurkse dealt with it as a long term phenomenon that obtained in less developed economies. In historical perspective, Keynes dealt with open unemployment, Nurkse dealt with open as well as concealed unemployment. Though the impact of both these contributions on economic thinking has been important and far reaching, Nurkse's contribution gave rise to a debate both at the theoretical and empirical level, a debate which is still unsettled. At theoretical level issues being debated relate mainly to economic system that would give rise to continued unemployment and at empirical level issues raised relate largely, though not wholly, to problems relating to measurement of unemployment.

I

THEORETICAL ISSUES

Out of 24 papers, two take up directly discussion of theoretical issues, and of the remaining 22 papers, several deal directly or implicitly with issues relevant at theoretical level. Most of the theoretical discussion revolves round the problem regarding the shape of the supply curve for labour[1] and equilibrium of demand and supply.

Three different positions regarding the shape of the supply curve have been discussed by different authors : (1) flat or horizontal for some part and rising thereafter, (2) rising throughout, and (3) highly inelastic or practically vertical. Those who argue that at a going wage people are willing to offer themselves for

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1. Papers dealing directly with this issue have avoided the discussion of the backward bending supply curve which becomes relevant for the phenomenon of withdrawal of labour and not for its unemployment.

additional work, imply a flat supply curve of labour for the relevant range, a curve which has wage inflexibility. They have either built this proposition as an assumption in their theoretical formulation or have analysed National Sample Survey data or carried out investigations in the field enquiring from respondents whether they were willing to do additional work at a going market wage.

R. M. Mohana Rao has formalized the theory relating to horizontal supply curve of labour giving an elaborate formulation. His formulation hinges mainly on two arguments. Firstly, he assumes that marginal disutility of labour is constant upto a point and rises thereafter, whereas marginal utility of wage continuously declines.[2] Secondly, according to him elasticity of supply of labour (or marginal disutility of labour) is the mirror image of demand for leisure.[3] We have to assume that demand for leisure is infinitely elastic to get horizontal supply curve for labour. This implies that with little lowering of wage a person would give up doing work and vice versa.[4]

It is argued by a few authors that the employment of labour in agriculture is below a norm fixed for full employment. They borrow the norm from alternative occupations or fix it arbitrarily. Theoretically this would imply that the labour supply curve should be infinitely elastic at all points along the curve upto the notionally fixed level of full employment. A powerful point usually advanced (in most cases it is implicit), in support of the above argument is that in poor countries, labour can ill-afford leisure till a minimum standard of living is attained. Not only leisure has no positive utility, it is a stigma and hence has negative value. According to this view, people would create work, share it with other members and try to maintain a facade of employment, *i.e.*, being engaged in productive work. Such phenomenon is responsible for zero or even negative marginal productivity, they would argue.

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2. A declining marginal utility of wage would imply elastic demand for labour so that with declining wage total labour income would tend to rise but every addition to income would give proportionately less satisfaction. Whether the demand for labour would be elastic or not would depend however on three factors, (*i*) on elasticity of substitution between labour and other inputs, and (*ii*) price elasticity of demand for products, both of which can be expected to be less than one ; the third factor being labour's share in total product which at best would be nearly one-third in Indian agriculture.

3. The elasticity of demand for leisure according to R. M. Mohana Rao would be given by the following formula :

$$\eta L = \left\{ KS(ES) + (1-KS)(EWL) \right\}$$

ηL = Elasticity of demand for leisure.

KS = Proportional contribution of income to the standard of living (standard of living consisting of consumption of material goods plus enjoyment of leisure).

ES = Elasticity of demand for material income with respect to a change in the standard of living.

EWL = Elasticity of substitution of work for leisure with reference to a change in wage.

To get infinitely elastic curve of supply of labour we should have ES = ∞. This would imply cross elasticity between material income and leisure to be ∞. It would also imply that elasticity of substitution of work for leisure is also ∞. Hence both ES and EWL would be interdependent. One would be easily convinced that extreme value of ES or EWL would be rare especially in a long term context. Even the notion about subsistence level is not fixed in quantity for a community, over a period of time its quantitative content both increases as well as decreases depending on availability of goods.

4. Though one may grant such a phenomenon over a short period, say, during off-season but then in such cases what is relevant is not the wage offered on a particular day but the entire wage income for the year. If we look at it from that angle we shall once again get a normal shape of supply of labour. Besides, if we grant the assumptions of Mohana Rao, we get open unemployment.

R. M. Mohana Rao's position is different from the above "objective standard" approach. His measure of unemployment based on subjective assessment by respondents would give horizontal supply curve at a positive wage. The zero marginal productivity argument would not only assume supply curve to be flat but also to be identical with x-axis.

Another major issue in theory, raised by G. C. Mandal relates apparently to demand. He and others who try to explain existence of unemployment in terms of institutional shelters would not quarrel with the normal shape of the supply curve for labour. They take exception to the demand curve. Especially in the case of self-employed workers in agriculture equilibrium point is not at the intersection of the demand as given in terms of value of marginal product and the normally shaped supply curve. Equilibrium is reached (or believed to be reached) at a point where the curve of value of average product of labour intersects supply curve. Self-employed workers being members of the family and income of the family is shared equally among all members irrespective of their contribution to income, the individual worker seeks alternative employment only if he is likely to raise his individual standard of life above the standard he enjoys as a member of the family. If this argument is granted, it would imply that supply of labour in agriculture is over-abundant and by transferring part of it to other occupations total product and labour efficiency on the whole can be improved.[5] Besides if the point at which value of average product is positive and equal to wage in alternative occupations the value of marginal product is low, and possibly zero, as is believed by many contributors, the value of total product in agriculture will not decline if labour is withdrawn from agriculture. In case value of marginal product is negative, the total product might even increase.[6] Though theoretical logic is complete and consistent in regard to this argument, it may be necessary to examine the underlying assumptions. Organization of the family to which alone the phenomenon applies needs to be examined first. For instance, it is assumed implicitly that the individual member is completely free to make the decision whether to accept employment outside the family occupation or not. It can however be argued that if family is an integrated income-earning unit, it would also be a unit of labour supply. If the head of the family (*Karta*) finds that withdrawing some members from the family occupation and employing them outside on wages results into larger income for the family, the head would persuade these members to seek employment outside. If the wages outside are higher than the value of marginal product in the family enterprise but lower than the average product in the family enterprise, the head of the family would even prefer to 'subsidize' the member leaving family to the extent of difference between the wage and average product.[7] In reality various patterns obtain, members leaving family sending remittances home, as well as members leaving family being subsidized by remaining members occupied in the family enterprise. But the fact of family being the unit of labour supply, raises many other interesting issues. In agriculture, where

5. Such a phenomenon would be widespread, it is claimed, where extended or joint family system prevails or (to extend the logic) where among other institutions like caste, guild, jamat, etc., protection of low income-earners obtains.

6. Institutional shelters, in the form of minimum wages and trade unions have been known to bring about similar results by preventing free flow of labour from agriculture and other occupations to sheltered industries. In their case, they have a State sanction. This is an entirely different situation.

7. Refer Dipak Majumdar, "The Marginal Productivity Theory of Wages and Disguised Unemployment," *Review of Economic Studies*, Vol. 26, June, 1959, pp. 190-197.

demand for labour fluctuates between peak and off-seasons, it becomes necessary to vary the supply of labour within a year. The head of the family persuades all able-bodied members to help the family temporarily to overcome the stress of peak demand. These helpers are 'retired' from work during off-seasons. The head of the family at times sends out members (himself included) during off-season for wage employment, as an attempt to augment the family income without seriously affecting the production in the family enterprise. One has to do a careful job as a head of a family, of weighing benefits from alternatives with the contributions in the family by the members in the work force. If this is granted, it is difficult then to agree with Mandal's analysis according to which there will not be equilibrium of labour earning on the family farm and the wage outside.

There are two more theoretical issues raised by other authors. Firstly, it is assumed that rural people have fixed income as a goal and once they attain that level of income, they would not work for more income. We shall call this a fixed income-goal hypothesis. R. N. Bishnoi has put forth this hypothesis arising from his empirical study in Rajasthan. Like the zero marginal productivity hypothesis, the fixed income-goal hypothesis has a long and reputed history. Second issue relates to dual society hypothesis. It is referred explicitly in a paper entitled "Facets of Employment Problem in India." It is also an hypothesis well recognized. The two hypotheses are in some way related with each other. The fixed income-goal hypothesis would be valid in a community which has its own cultural values which put absolute premium on leisure after a given income level (and absolute premium on material goods below that income level). Besides, such a society should be isolated from the rest of the world, since it is in such isolated society material means will have no use-value beyond a quantity required for minimum material needs of life. The point at issue would be to find out whether lack of liking for material welfare can be widespread so as to prevent inter-sectoral migration at rising wages and expanding employment opportunities, since these two would obtain in a developing economy. Bishnoi finds the above phenomenon in a surrounding in which employment opportunities outside agriculture are expanding and wages are higher in non-agricultural occupations.

Dual society hypothesis tries to explain the same phenomenon—obstacle to out-migration from rural to urban occupations—from a different or rather an opposite angle. According to this hypothesis expansion of employment in urban occupations may not be rapid enough to absorb additions to rural work force because the urban sector adopts techniques of production which are imported from outside where factor endowments are much different. These techniques besides being readily available are superior inasmuch as they give higher production for a given amount of aggregate inputs. But they involve labour substitution. In such a situation wages in urban occupations would rise but expansion in employment opportunities would be extremely limited.[8]

Whereas fixed income-goal would make supply of labour to agriculture inelastic beyond a point because of absolute preferences regarding material gain and leisure, the dual society situation would give inelastic supply to agriculture

8. The State may protect labour already employed in urban occupations through various legislations, as has been done in India, *e.g.*, protection against termination of services. To help other labour, State may restrict production in 'modern' sectors.

because of inelastic demand in the alternative occupations. It is implied that the inelastic supply curve intersects the value of marginal product curve at a level which is below the value of marginal product in alternative occupations. This gives rise to wider inter-sectoral wage (and marginal productivity) disparity leading to concealed or disguised unemployment in agriculture.

The theoretical issues raised above relate largely to various assumptions underlying different formulations. One common feature of the formulations given in the papers and that obtain in the economic literature is that they assume existence of unemployment and attempt explanation for such a phenomenon which is not easily explained by the received theory. It is this basic concern about explaining existence of unemployment which leads to a wide range of conflicting assumptions.

We thus face two issues that need examination. They are (*i*) existence of the phenomenon of unemployment and (*ii*) validity of various assumptions underlying different theories advanced to explain the unemployment phenomenon. Whether there is unemployment or not is an empirical issue. This is discussed at length by authors contributing papers based on empirical observations, which are referred below.

II

EMPIRICAL OBSERVATIONS AND ISSUES RAISED

Out of 24 papers, 22 papers have an empirical base. Of the two papers dealing directly with theory, one contributed by Mandal quotes data in support of his theoretical exposition.

The empirical contributions analyse data drawn from various sources. On the whole micro studies through field investigations undertaken specially for the purpose dominate but macro studies and micro studies based on secondary data (data collected by other agencies) are also substantial in number. Five contributors approach the unemployment problem at a macro level. Of them, two use population census data, one for the country as a whole (B. R. Kalra) and one for the State of Bihar. Two more authors have used National Sample Survey data. All the four authors use time-series, while P. S. Sharma analyses Census data for over 300 districts for a cross-section study. Of the remaining authors who study the problem of employment at the micro level, three contributors base their observations on data obtained from Farm Management Studies, and three more draw data from studies undertaken by Agro-Economic Research Centres. In another paper three joint authors use Intensive Agricultural District Programme data collected from two purposively selected villages of Ludhiana district. In all, eight authors have undertaken special investigations to study unemployment, wages and productivity problems. Only one of the authors uses data on wages published by the Madras Government and for the rest relies on personal acquaintance with the local conditions. Another author in his paper analyses the data collected from a coastal village in the South Kanara district in Mysore and studies employment generation in allied industries—fishing and cocoanut plantations—which does not deal with the problem of existence of unemployment as such. The practices of wage payment in six selected villages in Bihar are dealt with in another paper.

It also does not relate to the problem of existence of unemployment. Though the central theme around which most of the papers have woven the available evidence is the search for the existence of the phenomenon of unemployment, the method and the approach adopted by different authors differ. The observations regarding the existence of unemployment are conflicting to the extreme, leaving no easy ground for discussion.

Three Approaches

Three approaches have been adopted by the authors to trace unemployment in rural areas. They are : (*i*) measurement of unemployment by relating actual employment level to an objective standard of full employment, (*ii*) subjective measurement of unemployment obtained by enquiring if workers are willing to undertake additional work at going wage, and (*iii*) tracing existence of unemployment by analysing labour productivity, wages and income.

Whereas the first and second approaches trace open unemployment (including what is described as under-employment arising from intermittent employment), the third approach concerns primarily with disguised unemployment. Some authors have chosen to concentrate exclusively with one or the other approach, while others have combined more than one approaches. Productivity approach studying disguised unemployment dominates. Only one author has adopted subjective approach, five contributors have adopted objective approach and the rest have used the productivity, wage and income approach.

Objective Standard

Objective norm of full employment can be borrowed from alternative occupations. For instance under Factories' Act, industrial workers are entitled in a year to 52 weekly holidays plus 3 paid holidays of national importance. In addition, they are entitled to paid leave for 15 days. Thus they get 70 days of rest. In other words, their working period in a year consists of 295 days.

The contributors however have not adopted a uniform norm on any such objective basis. The norm adopted by them varies from 365 days—the entire year—to 320 days. Some of the authors have not explicitly mentioned how they have arrived at the period for which a worker is available for work. Regarding working day, a uniform standard of 8 hours per day is adopted by all contributors. However, the National Sample Survey has adopted a liberal norm of 10 hours per day for full employment.

All those who have adopted objective standards of full employment have concluded that there is widespread unemployment, and that its magnitude is big. Bishnoi who adopts lower norm of 320 days for full employment and confines his study to the age-group above 14 years finds nearly 33 per cent of males and 36 per cent of females were under-employed. An adult male worker according to him was under-employed for 110.5 days and an adult female worker for 119 days in a year. He has studied a village from Rajasthan with good irrigation facilities. G. C. Srivastava who adopts a norm of 365 days as full employment finds in three villages in Ranchi district of Bihar State that a male worker was

unemployed on an average for 88 days and a female worker for 84 days in 1963-64. On the basis of a field inquiry conducted by one of the authors in three villages, one each selected from West Bengal, Orissa and Bihar, it is found that unemployment per adult male worker of farm labour ranged from 81 to 155 days.

Another paper approvingly quotes NSS 7th Round to show that the intensity of about 22 to 27 per cent of cultivators and tenants and of over 55 per cent of labourers was below full employment level. It is assumed that full employment should be synonymous with continuous employment (all the year round). Hence, even those reported as fully employed are also considered to suffer from under-employment.

Two other forms of objective norms also obtain from the papers contributed. S. S. Johl and A. S. Kahlon, who use linear programming would define unemployment as the difference between present employment level and employment level on optimally organized farms. If the actual employment is higher than optimum labour requirement, the difference would be regarded as concealed unemployment. The technique of production is kept unchanged in this analysis. The authors also compare actual employment with available manpower. Comparing actual employment level with available manpower, they find that the present employment level leaves surplus labour on medium farms (average size 12.76 acres) in all seasons and on small farms for 8 months. The surplus varied from 1 to 14 man-hours per acre in case of small farmers (9.40 acres) and 4 to 59 man-hours per acre in case of medium farmers. Large farms (21.75 acres) experienced shortage all throughout the year. They further find that the optimum labour requirement is below the actual employment level if the technique is unchanged. The optimum labour utilization would leave a surplus of 2 to 13 man-hours per acre on small farms for 7 out of 12 months, on medium size farms surplus of labour would be from 7 to 48 man-hours per acre in different seasons. On big farms, there will be deficit in all seasons, but its magnitude will be reduced. Thus the unemployment according to them would be much larger than is apparent. The authors have also run a programme with improved techniques of production recommended for I.A.D.P. districts. According to them improved techniques would decrease employment for only one month (mid-March to mid-April) but increase employment in other seasons, *increase for all farmers together would range from 24 per cent to 45.4 per cent* (this is during peak season). (Italics lent).

In another paper based on a study of two villages in the Ludhiana district of the Punjab referred earlier it is shown that the lowest employment level for landless labour was 273 days, highest level was 314 days in a year and that the labourers worked on an average for 7.42 hours to 9.47 hours per day in different seasons. This would give an impression that labourers work for longer period than others.

One more norm of objective standard of full employment adopted by a paper is based on intra-sectoral comparison relating to per acre labour employment on different farms in two villages of Cuttack Sadar Block in Orissa. Those putting in comparatively more labour per acre are understood to "waste" labour or conceal their unemployment. Obviously, they would not grant variation of factor proportions.

Measurement of unemployment with reference to an objective norm of full employment seems to suffer from one major drawback. The norms which are borrowed from non-farm occupations giving continuous employment cannot be applied directly to a worker in agriculture. In agriculture demand fluctuates and during peak season all able-bodied members in a family are required to help the family in work. Hence, the participation rate in rural areas is comparatively much larger. One of the authors shows in his paper based on the study of rural households that it is above 69 per cent for females and above 85 per cent for males in seven villages of Madhya Pradesh. If the objective is to maximize return per effort unit, unit of employment in rural areas should therefore be considered in terms of a family of comparable size, sex composition and work force participation. If a partial correction of the employment level is carried out for the difference in the participation rate only as given in one of the papers dealing with a study of three villages in East India referred earlier, the employment level of agricultural labour would increase to 373 days per worker in the first village, 286 days in the second village and 279 days in the third village. Unemployment (compared with full employment of 295 days) would be only 3 per cent and 5 per cent in the second and the third village respectively.

Most of the studies however have no data on participation rate.

Subjective Measurement of Unemployment

Bishnoi has used the subjective measure for estimating unemployment. Bishnoi enquires from the respondent whether he or she is available for additional work at the going wage. He finds, "There was virtually no admission of unemployment or under-employment on the part of large majority of the persons affected. When specifically asked whether they had any spare time to devote to some gainful employment or to take up some additional work to supplement family income almost all replied in negative." He further mentions that all of them had good health and that only 6 persons showed some willingness to work, though in reality they had not taken it up. This happened despite the fact that at a distance of 4 miles employment was available at 33 per cent to 50 per cent higher wages for unskilled labour. At a distance of 2 miles a quarry owner was willing to employ 40 persons but he got only 8 persons, that too intermittently.

Amiyamoy Chatterjee quotes NSS results from 9th to 11th rounds and shows that subjectively measured unemployment increased. Unemployment of females increased over 30 times and that of males 3 times. He explains that, of late, more females in rural areas 'seek work.'[9] We should note that the reference period for different rounds varied from one day to one week.

Labour Productivity, Wages and Income

An analysis of comparative levels of wage, income or productivity is expected to trace the existence of concealed unemployment. Twelve contributors have preferred this approach. But the evidence given by them is conflicting. The conflict can be traced partly to the data and partly to the method. Two authors

9. One may have to distinguish here between those 'resting' and enjoying leisure but who helped family during busy season and those who showed active willingness to get employment in so far as females are concerned.

conclude against existence of concealed unemployment. V. M. Rao arrives at this conclusion on the basis of Farm Management Studies. Analysing returns to labour for cultivators with small size holdings, he concludes that "even small farmers do not appear to provide clear evidence of widespread disguised unemployment." He has compared net labour income per labour unit with the wage rate. To arrive at the net labour income, he has used two levels of rate of interests, 7 per cent and 3 per cent.[10] One of the contributors who also analyses data from the Farm Management Studies finds that in Uttar Pradesh, labour income of the family members per day of work would be nearly equal to the wage for hired labour. T. P. Abraham and S. D. Bokil have fitted a Cobb-Douglas function and have found marginal value product of labour for cotton and wheat farms nearly twice as much as the prevailing wage except for small size farms of Gujarat.

Of the remaining authors, a few have fitted production functions of Cobb-Douglas type. One of them in a paper based on field data collected from nine villages of Meerut district in Uttar Pradesh runs a function linear in log with one independent variable, *i.e.*, labour input and finds marginal productivity of labour (which would be gross return), to be negative in one village, and below one rupee in remaining villages. We have no information as to whether the year under study was a lean year. He gets very high correlations, however, 0.6 to 0.9 (except one case of 0.1) despite one independent variable in the function.

In a paper based on the study of labour employment and productivity in Cuttack referred earlier, an attempt is made to fit a Cobb-Douglas type of production function with labour and capital per acre as independent variables on value of product per acre. It is found that in two villages of Cuttack, value of marginal product (at geometric mean) to be below the prevailing wage. One of the authors who draws data from the Farm Management Studies of Uttar Pradesh, the Punjab, Andhra Pradesh and Orissa, observes that except in Uttar Pradesh, in other States value of marginal product of labour (at geometric mean) was less than the average wage rate per labour day. However, he also observes that productivity of family labour was positively related with the availability of the family labour per acre, with the exception of Orissa. Instead of comparing marginal productivity with wage, two joint authors in a paper dealing with employment, productivity and wages in Uttar Pradesh run the production function, and measure labour requirement at a level where value of marginal product becomes zero and compare this labour requirement with labour available. They find even at zero marginal product, *available labour* would leave surplus for farms of all sizes from 5 acres to 25 acres in 1962-63 in two districts of Uttar Pradesh, surplus being much larger for small holdings. We have no indications from the paper whether labour available is net after deducting wage employment, the latter may be significant in case of small farmers.

In a case study of employment, productivity and wages in agriculture in the Ludhiana district referred earlier, an attempt is made to compare wages available in agriculture and wages in urban centre, and it is found that the latter are higher. It would be inferred that to that extent there exists a scope for transferring labour out of agriculture. However, besides money wage differential, we would like to know the magnitude of differential in real wage incomes but the paper does not

10. His justification for using this less sophisticated method is his worry about interdependence of inputs.

contain these data. It is also observed in the same paper that out-migration of workers from villages in many cases did not disturb the prevailing production level and in a few cases the production level went up, thereby implying existence of zero or negative marginal productivity of those leaving farms. It was also observed that the members left behind in the village had taken up the additional work and that the method of production improved and investment increased. These observations suggest partly a change in the factor combination and a change in the technique of production as a consequence of migration of labour. It is further noted that probably a rise in income may be due to rising agricultural prices.

Another author in his paper based on data collected from seven villages in Madhya Pradesh however complains about the shortage of labour due to out-migration, resulting in rise in wages. He also feared a decline in production.

Bishnoi has measured farm income. He observes that low income (less than Rs. 600 per annum) for 71 per cent of families would be indicative of low productivity. But he has also noted that labourers were not willing to leave their present occupation for better prospects.

B. R. Kalra and P. S. Sharma in their papers study productivity at the macro level. Sharma finds a positive correlation between land productivity and labour supply in a cross-section study of district data. But in the study of net relationship through regression he gets different results. He finds that labour input and productivity are negatively related. Increased pressure of labour, according to him, would lead to lower per acre yield. As against this, Kalra finds coefficient of variation of per labour productivity in inter-State comparison to be much lower than that for per acre yield or average size of holding. This would suggest that increased pressure of labour leads to increased yield per acre. In fact he finds correlation between per acre yield and per acre labour input positive and high. Sharma's and Kalra's correlation results conflict with results of Sharma's regression analysis. Sharma has run a function of nine independent variables. It may also be noted that out of 22 linear regressions for different regions and crop combinations, he gets statistically significant coefficient for two only (one of which relates to all-India).

Kalra explains however that by 1961, the self-employment had increased which he interprets as an indication of an increase in concealed unemployment.[11] From the Census data, Amiyamoy Chatterji shows that till 1931 landless labour's proportion to total population dependent on agriculture tended to increase, thereafter it tended to decline. Thus there are two trends, one of dispossession of one sector of the society, of the land it held, and another of increased self-cultivation. Forces responsible for two trends would be different. Will increased unemployment be related more with the trend when ranks of landless workers swell or when the peasant population increases ? One of the papers quotes Kalra's earlier paper[12] to show that net labour productivity during 1951-61 tended to increase at a rate of 0.9 per cent, when according to Kalra self-employment was on increase.

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11. We can probably infer this partly to be the result of land reform and partly the result of a change in concept and definitions for Census data.

12. "A Note on Working Force Estimates, 1960-61" by B. R. Kalra appended to 1961 Census, which suggested that increased self-employment did not necessarily involve less efficient use of labour. It might as well be the result of increased relative shortage of wage paid labour. We thus have conflicting evidence regarding productivity as an indicator of concealed unemployment.

Withdrawal of Family Labour

Two authors have referred to withdrawal of family labour. An elaborate analysis of this problem has been carried out in one of the papers based on data collected from 540 holdings in 45 villagers of Coimbatore district in Madras State. The analysis of correlation of production with family labour for small, medium and big farms attempted in this paper gives a positive coefficient for family labour in case of small and medium farms but it is statistically significant for small farms only. For big farms the coefficient is negative and significant. Thus it would suggest withdrawal of family labour as the size of holding increases, and among big farmers also when the total product increases. Srivastava also suggests implicitly withdrawal of family labour when income rises. In his analysis the income is higher in a village near the town and participation in labour force is low in this village. This withdrawal of family labour for upper income groups would imply existence of backward bending supply curve after a stage. It would also indicate limitation of uncritical application of objective measure of unemployment.

Relation of Wages and Employment with Distance of a Village from a Developed Centre

Three papers have specifically examined a relationship of wages and employment in agriculture with distance of a village from a town, city or any other economically developed centre such as mining centre or a *mandi* (a market place). Srivastava has planned his investigation specifically to study the influence of urbanization. In his paper, he has covered three villages from Ranchi district of Bihar, situated at a distance of 3 miles, 9 miles and 15 miles from Ranchi city. Another paper, referred earlier, has studied two villages—one well connected by a road with Ludhiana city and one "comparatively distant, remote and not so well-connected." It has studied the impact of accessibility on wages and employment. The third paper has studied three villages from three States with different backgrounds; of them one is situated near a developed centre. All the three papers conclude that the wages and labour productivity in agriculture are higher in villages nearer the urban centre.

Regarding structure of employment, and the method of wage payment also, it is observed that nearer a village is to the urban centre, on an average wage payments are more in cash and the proportion of family labour to total labour tends to decline. Thus, there is greater proportion of monetization and hence "better" adjustment to market forces in villages in the vicinity of towns. Regarding labour utilization, the authors observe that greater intensity of labour use obtains in villages in the vicinity of towns. This probably would apply if labour intensity is measured in terms of days of work per worker. But it would probably suggest that participation rate is higher in remote villages. In the paper on "Employment, Productivity and Wages in Agriculture—A Case Study" it is observed that in a remote village, participation for adult males and adult females among cultivators was 100 per cent and 91 per cent respectively against 95.2 per cent and 66 per cent in the accessible village. Among labourers also more or less the same pattern obtained. Against this pattern of participation, per worker employment for cultivators was 310 days in an accessible village and 292 days in an inaccessible village. Srivastava's data suggest that participation rate would be high in villages in the vicinity of developed centres.

This would obtain for non-farm families. For farm families, however, in his case too the same result as reported in one of the papers on "Employment, Productivity and Wages in Agriculture—A Case Study" would obtain. Srivastava's data show that in distant villages females put in more work as compared to males.[13] However, no data are supplied regarding capital structure and capital intensity in villages situated at a varying distance from a town. Srivastava observes that the percentage of area irrigated is the highest in the village nearest to the town. Yet per acre labour input was the lowest in this village.[14] It is observed in the case study referred above that out-migration was much larger from the accessible village partly because it was possible to go to the work place during the day and return home in the village in the evening. Thirty-three per cent of the migrating families had thus not left their homes. In the inaccessible village, all who migrated were required to leave their homes and settle down in the town. This would imply higher cost of 'migration' (total cost including cost of maintenance) to a family sending members out from a remote village. From inaccessible village only 11 per cent of labour families migrated compared to 65 per cent of labour families migrating from an accessible village.

III

Thus most of the papers analysing empirical data investigate mainly into existence of unemployment, open or disguised and its form, location and magnitude. The authors have adopted three approaches : (*i*) objective measurement, (*ii*) subjective assessment and (*iii*) productivity approach. The divergent observations of different authors can be traced to some extent to different concepts and methods used by them. The following points which emerge from their studies would need further exploration.[15]

(1) For instance, there is a vast contrast between large open unemployment when measured by adopting an objective standard and no unemployment or much smaller unemployment when measured by a subjective standard. In this connection, three issues can be raised :

(*i*) Problem of an appropriate unit of measurement for employment when it is to be compared with an objectively fixed standard of full employment;

(*ii*) The criteria for selecting an objective standard of full employment;

(*iii*) The basis to be adopted for making an allowance for leisure, whether it would be an objectively determined standard or a varying standard subjectively determined by respondents, the latter depending on income, job outlook and individual preferences.

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13. This was, in fact, an exception and was not pertinent in other cases.
14. This may suggest more rational use of labour. No data are however available in this case to enable us to judge capital intensity.
15. We have not referred to two papers so far. In the context of the larger issue they may be taken up during discussion. One paper has studied various practices of wage payment in Bihar and another paper has studied employment generation in non-agricultural rural occupations in a coastal village of South Kanara district in Mysore.

A plea for minimum wage has been made by Srivastava but he has also observed that labourers themselves are not enthusiastic about it.

(2) Another problem which needs exploration relates to conflicting results regarding relationship between wages and productivity. Market wage rate and wage income per unit of labour compare well in some cases. In other cases, it is found that wages are below marginal productivity derived from production functions. In this context, we may have to consider

(*i*) the problem regarding the methodology of determining marginal productivity, including the form of production function,

(*ii*) relevant wage level,

(*iii*) inferences regarding zero or negative marginal productivity. For instance, point estimation tested against zero, should be tested with respect to wage too.

(3) Measurement and interpretation of differentials between wage as well as income levels obtaining in agriculture and other occupations.

In this context, we may discuss

(*i*) tolerable level of difference,

(*ii*) incentive level of difference of the latter in the context of encouraging migration.

This would lead us to the consideration of

(*iii*) migration from villages—motivating forces and obstacles.

(4) It is also necessary to consider the comparative merits of alternative measures of concealed unemployment. These measures are :

(*i*) wage-productivity differentials,

(*ii*) inter-sectoral income and wage differentials,

(*iii*) difference between optimum and actual employment levels, and

(*iv*) changes in the level of self-employment.

One major issue that may interest us would be : Will demand for labour with changing technological conditions increase at a rate faster than supply and wipe out labour surpluses, or will it create acute labour shortage requiring substitution of labour by capital.[16]

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16. In the entire discussion on the subject and in the papers contributed, there is no reference to disguised unemployment in terms of low food consumption leading to low productivity. One of the reasons for omission may be difficulty regarding empirical measurement.

SUMMARY OF GROUP DISCUSSION

Chairman: C. H. SHAH

At the outset all the members of the Group agreed that the theoretical issues relating to the problem of employment should get precedence over those relating to empirical measurement since the former usually provide the general framework of analysis on the basis of which empirical studies can be carried out with purpose and precision. It was decided that the issues may be divided broadly into two categories: (i) those relating to supply of labour, and (ii) those relating to demand for labour. As the discussion proceeded it was suggested that it may not be valid to observe that in a labour surplus community leisure is a positive good with demand for it at a positive value. In such a community leisure being abundant may be a free good and hence has no positive value and in some cases leisure would be involuntary involving even negative value. In terms of employment this observation implies free surplus labour. This concept of free labour would be however inconsistent with a positive wage. Inconsistency of positive wage and surplus labour can be resolved, if it is assumed that in a society where per capita consumption is low, a section of farming community which lacks adequate means of production would tend to push the use of labour on their own farms to the farthest end and thus reach the zero (or even negative) marginal productivity level. But being poorly fed these families would find no demand for their labour (time) in the wage market where 'labour time' is purchased in lump of a day or half a day. But these workers would not remain idle. They would undertake such light operations as cattle-tending, light weeding and generally all odd jobs involving light labour input for a part of a day. The contribution of labour engaged in such jobs would be very low and would permit employment of labour on a wage if wage drops to very low levels. Extending further the argument of insufficient capacity to work due to low food consumption, it was observed that the level of wages in the wage labour market would be inflexible below a particular level. How this particular level of wage would be determined seemed to be vague. As was pointed out by the Group, it may be a conventional level or level corresponding to subsistence expenditure at a point of time. It can also be conceived as marginal cost of labour. This cost would consist, at the minimum, of additional consumption of food required to put in additional physical labour. This additional food requirement would be over and above the requirement of food for human metabolism either at rest or engaged in light activity.

The appeal of the argument rested heavily on the assumption which seemed too true to be realistic. Logically it would follow from the argument that at a given wage the employer in the wage market would prefer a well-fed labour which implies that the labour from the same income group would be exchanged in preference to hiring of workers from the low income groups. In reality wage labour would seem to be more dominant and exchange labour to be only marginal.

It was also observed that the wide range of inter-seasonal variations of wages would suggest a fair degree of wage flexibility, and if relationship of wage, food consumption and labour input is to be accepted it has to be believed to be direct and instantaneous. Hence a rise in wages would enable labour to spend more on food to enable him or her to have additional effort power to be employed

for hard physical work. The argument was left at this stage even at the risk of implicit acceptance of lack of satisfactory explanation for existence of large scale unemployment.

On the other hand, it was agreed that existence of a wage market within a village permitted a flow of labour between labour-surplus families and labour-scarce families. Subject to the cost of labour for a full day's work in terms of additional food required to put in that work, the wage labour market can be understood to provide a facility for avoiding pushing of the use of labour on family farms to zero marginal productivity level or to a level below the prevailing wage. This position involved a simpler assumption of maximization of total income, *i.e.*, income from family farm plus wage income.

It was argued without much debate that a peasant, however small or less literate he may be, would not have a fixed income-goal. When there is pervading poverty, it does not involve much effort to persuade farmers to pitch their income goals higher provided these high levels are attainable without involving a radical change in social surroundings or conditions of work. It was also accepted that if the family is the unit of labour supply, and the head of the family is the decision-maker, the supply price of labour in the wage market would be more probably the marginal contribution of working members in family enterprise and not the money value of average consumption level.

It was implied throughout the discussion of the theoretical issues that the villain of the piece was the exogenous increase in population. Most of the theories are formulated under the assumption that an increase in population would result necessarily in unemployment or under-employment. The accepted theory of diminishing marginal return with an increased labour supply would be the first pointer to the weakness of the above assumption regarding the impact of population increase. Decline in productivity of the labour in the context of long term situation cannot be properly described as a phenomenon of unemployment.

If after a stage the labour and other inputs become complementary and additional labour is not matched by the corresponding supply of co-operating factors the additional labour could be correctly described as surplus labour. But the acceptance of even this position as final would imply an assumption of totally inelastic supply of co-operating factors irrespective of the fact whether the supply of this factor—say, capital in this case—comes from the public or private sector or from within the sector or from outside it.

Additional labour supply to result in unemployment would also imply unchanging technology. Whereas to assume that every increase in population would lead to a fully compensatory change in technology would be considered an extreme assertion, a gradual beneficial change in technique facilitating partial absorption of addition to labour (or better population) would not be an uncommon experience in the long run context.

Empirical Issues

As a preliminary observation it was pointed out that whereas theorists took upon themselves the task of providing a logical explanation for the existence of large scale unemployment of labour, the empirical research was largely siezed of the

issues relating to the measurement of unemployment. Regarding measurement not only different approaches gave different results but also the same approach with the same data gave different results as seen from the papers contributed for the Conference.

Sequentially first approach to the measurement of unemployment is the analysis of time disposal. In this case the actual employment level is measured in terms of time units per worker and it is then compared with the full employment level ; the latter is normative and is either borrowed from alternative occupations or is notionally fixed. In practice, level of full employment as defined by different contributors of papers varied from 365 days to less than 300 days in a year, and 8 to 10 hours of work per day.[1] Unemployment when measured as a gap between the normative level of full employment and actual level of employment usually gave much larger estimates. As a weakness of this approach, apart from its validity as such, it was pointed out that the rural situation requires larger number of persons to help the family in work during peak season thus resulting in much larger participation rate. In this situation to work out employment per worker would be much less meaningful. In occupations where period of employment per worker in days per year and in hours per week is contractually fixed, employment per worker has a meaning. In rural areas, a family is the unit of supply of effort time and hence for any normative comparison, effort time of a family of comparable size, sex composition and participation rate needs to be worked out.

Second approach to the measurement of unemployment can be described as 'subjective.' In this approach a respondent is asked, during field investigations, whether he or she is willing to work for additional period at a going wage. Those reporting as available for additional work are described as unemployed or underemployed and the period for which they are available for additional work is described as a period of unemployment. Results of field investigations adopting this approach suggest existence of very little unemployment. The 11th, 12th and 16th rounds of National Sample Survey which adopted this approach, do not suggest existence of substantial unemployed time.

Both the normative and subjective measures involve accounting of time and hence they would leave out the situation in which productivity is very low. In a poor society a worker may be engaged in production without apparently contributing much to it. In other words, marginal productivity may be zero. Even when marginal productivity is positive it can be low and much below the prevailing wage rate. Both the situations would involve existence of unemployment according to the received theory. The latter approach to the analysis of the situation of unemployment would require the measurement of productivity. As a first limitation of this productivity approach it was pointed out that fitting of a function using labour time as an input, even though if it gives a positive marginal value product, would not amount to sufficient evidence to show complete absence of unemployment. Inasmuch as it leaves out of its account unutilized time of labour or even time spent on less directly useful work as minor repairs of implements, etc., the marginal productivity approach would give an over-optimistic view of the real situation of employment.

1. There is a tendency to adopt a liberal norm. For instance, NSS has adopted a liberal standard of 10 hours per day.

Even if we ignore this criticism, we find that empirical evidence regarding level of marginal productivity is conflicting in extreme. At one extreme we get that available labour supply would be in excess of labour required for the level of production at which marginal value product would be zero. At the other extreme we get the value of marginal product to be nearly as much as twice the level of prevailing wages. Both these situations and others in between can result from the problem of multi-collinearity or interdependence of independent variables. Multi-collinearity would suggest close economic complementarity of inputs which is a serious obstacle to adequate measurement of individual contribution of different inputs. A result giving marginal product which is not significantly different from zero on one hand and from prevailing wage on the other, would not therefore be surprising. In view of the empirical difficulties of measurement of value of marginal product of labour with the widely used statistical tools such as Cobb-Douglas production function, the result relating the measurement of value of marginal product of labour should be used with caution while concluding for either existence or absence of unemployment.

None of the approaches described above thus give us a satisfactory measure of unemployment and the available evidence is inconclusive to draw a precise inference about the extent and nature of unemployment.

In general theoretical formulation precedes, it being helpful for subsequent empirical testing. In this particular case the basic premise of existence of unemployment being in 'dock', the theoretical formulation is of little direct help. Besides, existing empirical criteria of measurement are also of no help for assessing the magnitude, the nature and the cause of the phenomenon of unemployment in rural areas.

The discussion however did not end on this pessimistic note. Both in the field of theory and empirical research regarding rural employment there exist conflicts and confusion. This near-chaotic condition, it was observed, was due to the partial and unintegrated analysis of a much complicated human phenomenon.

It was also pointed out that incomplete task of theory and inadequate tools of measurement should encourage us to continue our search for perfection at both the levels, though at the present stage, our work would be of little help to policy makers. For policy makers the risk of acceptance of unfinished theory or inadequate empirical results is very big.

At policy level it was observed that much little practical result has been obtained from special rural works programme aimed at creating employment in rural areas. This may probably be due to serious obstacles at administrative level, or due to difficulties of identifying unemployed persons. On the other hand, it appeared that the increase in agricultural production during the last decade seems to have generated a sizable employment though its precise measurement might be difficult.

To conclude, our discussion succeeded in pointing out important limitations of theory and empirical research. It asserted that no easy alternative criterion can be framed either for empirical assessment or theoretical understanding of the complicated phenomenon of unemployment.