Vol XXVIII
No. 1

JANUARY-
MARCH
1973

ISSN 0019-5014

INDIAN JOURNAL OF AGRICULTURAL ECONOMICS

INDIAN SOCIETY OF
AGRICULTURAL ECONOMICS,
BOMBAY

SUMMARIES OF GROUP DISCUSSION

SUBJECT I

INCOME, SAVINGS AND INVESTMENT IN AGRICULTURE

RAPPORTEUR : M. T. R. Sarma*

Since the Conference Number containing the papers submitted to the Conference and the Rapporteur's Report on these papers has been given to the delegates only on the inaugural day, it was decided to allow the authors of the papers to present their views and results contained in their papers briefly before others could participate in the discussion. Taking into account the salient points made by the different authors of the papers, the group discussion was focused on the following five main topics :

1. Concepts and definitions of income, savings and investment.
2. Pattern of income distribution in the rural areas.
3. Pattern of savings and investment in agriculture.
4. Average and marginal saving and investment rates.
5. Economic and social implications of the trends or changes in income, savings and investment in agriculture.

The discussion generally covered a very wide range and extended, in addition to these five main topics, to the problems faced by the farmers, particularly small and marginal farmers, in obtaining funds from institutional agencies, such as nationalised banks and the problem of effective demand for funds for productive investment purposes (in particular, the case of utilization of credit provided by the Agricultural Finance Corporation in Bihar). There was also some discussion on the problem of corruption and the effective rate of interest charged by the institutional agencies.

On the topic of concepts, the definition of income used by some authors of the papers came up for much criticism. One participant felt that there was nothing wrong in defining farm family gross income by adding all the incomes from farm, non-farm sources and *borrowings from institutional and non-institutional sources*. It was asserted that different definitions of income would be necessary for different purposes of study. It was also stated that depending on the objective of the study the particular definition of income was justified. However, it was pointed out by other participants in the group discussion that it was not correct to include borrowings as part of the income of

* Director, National Council of Applied Economic Research, New Delhi.

the farm family when the purpose of the analysis was particularly to estimate the marginal propensity to save or invest out of the income. It was felt, in the end, that a special *workshop* was required and it might be organized under the auspices of our Society to resolve the definitions and concepts of income, saving and investment in agriculture.

Regarding the pattern of income distribution in rural areas, it was generally felt that we did not know enough, as the available empirical data were very meagre, about what was happening to the distribution of factor incomes as a consequence of agricultural development with new technology. It was felt that it was not enough to study the distribution of income among cultivating households only to draw any meaningful generalization about the inequality of the distribution of income in rural areas. One should analyse the structure of wage rates and the return to capital assets also. There was need for undertaking several empirical studies in different regions. The group also discussed at length, the impact of technological changes on the labour and the pattern of income distribution. It was generally felt that the available empirical evidence did not clearly show whether the income inequalities in rural areas were decreasing or increasing as a result of technological changes. It was reported that in the Punjab and Tamil Nadu, the share of labourers in the income from agriculture was increasing. However, it was felt that what was more relevant was to know whether the agricultural labourers had benefited to the same extent as the farm owners had benefited, and whether the disparities between different classes were increasing or decreasing over time. It was also suggested that some empirical studies should be made to determine the impact of the new technology of agricultural development in terms of inter-regional income disparities.

During the discussion on the pattern of savings and investment, it was pointed out that in Punjab, irrigation structures formed the major investment on small holdings during the period 1966-67 to 1969-70 because they gave high priority for increasing the intensity of cropping and for better water management to increase the output. On the medium holdings, the emphasis shifted to the purchase and improvement of land and on large holdings, investment in farm machinery accounted for a large proportion of farm investment. It was pointed out that in other areas also, the first preference of the farmers was to reinvest the additional income in agriculture for productive purposes. The second preference was for education. The third preference was for repairs to buildings. The fourth preference was for investment in financial assets. The bank deposits were given a very low priority by the farmers. It was felt, during the discussion, that it would be interesting if a cross-country study could be made about the pattern of investment in agriculture.

With regard to the estimates of marginal propensities to save or invest, it was felt that great care should be exercised in the specification and estimation procedures. In view of the fact that different concepts of income have

been used in the papers submitted for the discussion, the estimated values of the marginal propensities to save or invest are not comparable and cannot be relied upon for policy purposes. There was some discussion about the comparison of savings behaviour of small farmers, tribal farmers and between small farmers participating in the development programmes and not participating in the development programmes.

There was very little discussion on the social and economic implications of the trends or changes in income, savings and investment in agriculture. It was pointed out during the discussion that some consideration should be given to the economic size of holding and the imposition of ceilings on land should not adversely affect the investment necessary for modernizing Indian agriculture. It was also pointed out that private investment in pump-sets for irrigation might be encouraged even though it might help medium or large farmers, because the experience of the Government tube-wells or pump-sets had shown that they were relatively inefficient and generally resulted in losses to the Government.

SUBJECT II

PRODUCTION PATTERNS

RAPPORTEUR : S. S. Johl*

Since the papers contained both micro as well as macro level analyses of production patterns, it was considered appropriate to examine whether the results of macro level studies could be translated into regional and sub-regional action programmes. Conversely it was also discussed, whether micro level studies could yield some useful results for the State, regional and national policy. The importance, role and the need for both micro as well as macro level studies were emphasized. It was felt that a large number of micro studies on production patterns based on village/farm level data were not adequate and were haphazardly located. At some places such studies were repeated time and again and yet large parts of the country remained uncovered. These studies, useful as they may be for understanding of some local problems, were not adequate enough in coverage and design for regional or national level policy analyses. Similarly, macro level studies could not be appropriately translated into regional action programmes. It was felt that co-ordination of such a research at national level, integrating the micro and macro analyses would be highly desirable. This did not mean that all the research presently carried out at various places in the country should be

* Professor of Economics and Head, Department of Economics and Sociology, Punjab Agricultural University, Ludhiana.

completely co-ordinated. A co-ordinated project on analysis of production pattern could provide a desired momentum to the purposeful research which could be profitably used at State, regional as well as national level. Some of the participants emphasized the need for classifying the country into agro-climatically homogeneous type-of-farming areas and regions in order to rationalize the spread of micro studies on production pattern. Doubts were, however, expressed if such a classification could provide useful criteria for adequate dispersal of appropriately designed micro studies.

The group considered at length the resource use efficiency in respect of scarce resources such as fertilizers, credit, irrigation facilities in different regions of the country. It was pointed out that in certain regions, including Bihar and Eastern Uttar Pradesh, a major chunk of resources had been used with the lowest growth in production. Various variables determining resource use efficiency were discussed for such areas and it was generally agreed that productivity of any resource depended upon the availability of complementary inputs. Whereas the regional analysis could provide a broad picture of resource use efficiency, it could not suggest any intra-regional action programmes. Rationalization of intra-State allocation of investment funds deserves a more careful consideration to remove the most serious resource constraints in order to improve the total productivity of non-conventional inputs. This involves enhancement in degree and improvement in the pattern of the development of the infra-structure in the disadvantaged areas particularly in respect of the extension of irrigation facilities, road constructions and human capital improvement. The demonstration effect through inter-action with progressive areas in the country and progressive farmers within the region was also considered as a significant factor in bringing about desirable changes in production efforts and programmes of the farmer. Although the greatest importance was attached to the development of irrigation resources in less developed areas, because improved technology revolved around irrigation water, yet it could not be considered a universal solution for every problem situation. Gujarat and Saurashtra were quoted as high growth areas with irrigated areas merely around 8 per cent. Although a disaggregated analysis based on sub-regions and districts in the State could yield better understanding of the phenomenon, the major factor of growth in the light irrigated areas was the cropping pattern involving mainly groundnut and bajra crops which had low water requirements. Adequacy of irrigation thus needs to be viewed in a relative sense depending on cropping patterns of various regions and vice versa.

The group also discussed the spill-over indirect effects of Green Revolution to the disadvantaged regions and farmers in the country as a result of shifts towards high-yielding varieties in the green revolution affected areas. Total areas under pulses, especially gram, barley and oilseed crops decreased. As a result, the prices of non-green revolution affected crops such as oilseed, barley, gram and pulses improved to the advantage of regions and growers

of such crops. The discussion emphasized the role of programming techniques in finding out such regional spill-over effects and also for locating optimum production programmes under various resource constraints, price situations and technological levels of different enterprises.

The next issue before the group was to locate the place of the livestock enterprise, especially the dairy enterprise, in the production programmes of the farmers. This concern emerged out of the fact that there existed inter-regional disparities in the adoption of improved technology leading to income disparities. The dairy enterprise could be, perhaps, an appropriate undertaking to expand the volume of business of the small farmers and neglected section of the rural economy. The consensus was that necessary market organization, processing facilities, road and transport development were a necessary pre-condition for any perceptible development of dairy enterprise in any area. It was pointed out that dairy enterprise had started competing profitably with crops even in areas where high-yielding varieties had been introduced. The scope of dairy enterprise and the experiences obtained at various places in the country were also discussed. Development of standard production plans including different levels of dairy enterprise for different regions, areas and type-of-farms in different parts of the country especially where dairy holds a good promise for enhancing the incomes of farmers will be, therefore, an extremely useful research. At present, dairy projects on the small farms seem to be technically feasible and financially viable enough for banking institutions to finance. Research efforts in this area need to be however intensified to provide a sound basis for dairy development policy.

The session came to close with discussions on loss-functions of various alternative economic programmes geared towards meeting social welfare and political objectives of the State. This area of research was particularly emphasized in the context of social welfare orientation of the public policies in India.

SUBJECT III

RURAL UNEMPLOYMENT

RAPPORTEUR : Pravin Visaria*

Seven papers published in full and additional 14 papers published in summary form provided the basis for the discussion of "Rural Unemployment" at the Conference. The stimulating and wide ranging discussion of the problem of "Unemployment in India" in the Presidential Address to the Con-

* Professor of Demography, Department of Economics, University of Bombay, University Campus, Kalina, Bombay-29.

ference contributed towards making the deliberations of the group lively and sharp. The usual convention that the Presidential Address should not be discussed at the Conference was set aside with the explicit consent of Dr. Raj Krishna.

The topics listed for discussion included the following :

(*a*) the criteria for measuring unemployment and under-employment,

(*b*) the impact of the HYV's and the green revolution on the employment of hired labour *vs.* family labour,

(*c*) the social and private costs of factor substitution or mechanization,

(*d*) the socio-economic constraints on the mobility of labour and the sharing of the benefits of higher productivity between the wage-earners and cultivators, and

(*e*) the determinants of the success of various programmes undertaken to augment rural employment.

The group discussed at some length the various issues connected with the measurement of the labour force and unemployment. It was pointed out that in rural areas, the size of the labour force and the participation rates, particularly of women and children, fluctuated over the duration of a year according to season. It appears likely that some members of the labour force are only part-time members who periodically enter into and withdraw from the labour force. The estimates of the labour force, based on the Censuses, are based on a rather broad reference period of a season or a year and include all those who work for even a short period during the wide reference period. It is a moot point whether the resulting participation rates and projections based on them can be regarded as indicating full-time workers and/or persons needing full-time work. There was a general consensus in the group that the internationally recommended approach based on a short reference period of a week was not adequate for estimating the labour force in the conditions prevailing in the rural economy. The group showed preference for a stable estimate of the labour force which would form the denominator for estimating the incidence (or rate) of unemployment. For this purpose, one could consider (*a*) the population in ages 15-59 which are usually termed as working ages, or (*b*) the population of working ages less those who do not, or are unable to, participate in economic activity because of physical or other handicaps or because of socio-cultural factors. (The latter might often approximate to what the Census might report as the labour force.)

The desirability of collecting more information on the intensity of labour force participation (in terms of hours and/or days of work) was recognized but such data can be collected only in a sample survey and not in a massive operation such as the Census. In such surveys also, the determination of

the labour force status (in the labour force or outside) can be either on the basis of a single question for the entire week or separately for each day of the week. The latter information would be automatically collected if questions are asked about the activities of the individual on each of the seven days of the week. Such a detailed inquiry on "labour time disposition" during the entire week can provide a more realistic estimate of the extent of under-utilization of available labour time.

Reference was made to the efforts in various rounds of the NSS to evolve suitable reference period to estimate the labour force. In the 27th Round proposed to be spread over the one year between October, 1972 and September, 1973, questions have been asked on both the usual status (based on a reference period of a year) and the current status (ascertained through the collection of data on activity on each of the seven days of the preceding week). It is expected that detailed cross-tabulations of the results of the 27th Round will enrich our understanding of the proper conceptual bases for measuring labour force and unemployment. For this purpose, the formulation of a proper tabulation plan needs to receive very careful attention from the community of scholars as well.

It was noted that the measures of unemployment based on the time criterion did not show a very high incidence of unemployment only because the poor cannot afford to remain unemployed and must take up some work or the other irrespective of the level of income or productivity. (Open unemployment is probably high among the matriculates and higher educated in the rural areas but the latter normally belong to the higher income group.) Therefore, it is necessary to cross-tabulate the data on employment and unemployment by the level of income. It may be necessary to use the per capita expenditure as the proxy for income although for the upper segment of the society the former may be smaller than income. Such tabulation and analysis will be feasible for the 27th Round of the NSS. For the earlier Rounds, such analysis is possible only for a sub-sample.

A fair amount of discussion was devoted to the suggestion of Professors V. M. Dandekar and Nilakantha Rath that the estimated cost of a programme of raising the incomes of the weaker 30 per cent of the population (excluding the bottom 10 per cent) to a level that would ensure them the minimum desirable level of consumption can be considered an estimate of unemployment and under-employment. It was agreed that this measure included some part of what is called 'invisible under-employment.' There was a feeling that a separate identification of the poor who may be fully employed would help because it was conceivable that the low incomes could co-exist with average or high productivity if there was some exploitation. More importantly, the policy programmes or measures required to augment the employment of the poor who had idle labour time on their hands would differ from those relevant to the needs of the remaining poor. Therefore, it is not proper to mix the two groups under a common label.

Similarly, it was felt that the measurement of under-employment through an estimation of the extent of mal-nutrition or under-nourishment was unlikely to be helpful. It would, of course, be legitimate to devote special attention to the identification of the extent to which malnutrition restricts the work capacity of the population, generally or for the kind of work that is provided under specific programmes.

The following points were also made.

(1) The *a priori* assumption of a norm of the number of days for which a person would be available for work in a year tends to be arbitrary. (2) It would be hazardous to assume that on the days on which a person did not engage in work (in general or in specified kinds of work), he was unemployed because he could be occupied in other ways. (3) In judging the incomes of small cultivators, due attention should be paid to the fact indicated by the 25th Round of the NSS that in different States, between 30 to 85 per cent of their days of employment involves work as hired labourer in farm or non-farm activities. (4) The use of labour input on large farms as the norm to evaluate the quantum of under-employment on the small farms may not be valid because of differences in (*a*) the quality of the soil, (*b*) the supply of complementary factors of production, (*c*) crop-mix, etc. (5) The problem of serious response biases in the data on women's participation in economic activity afflicts many countries of the world. (6) It is not proper to convert estimates of man-days of unemployment into man-years and to show them as estimates of the number of unemployed men. (7) The estimation of the number of chronically unemployed men, *i.e.*, persons unemployed throughout the year, is not of much significance for the rural economy. The Committee of Experts on Unemployment Estimates did not consider it to be "the most important information." (8) Clarifying the data collection procedure followed by him, M. L. Singh stated that the estimate of the days of equivalent full-time employment, presented in his paper, was based on the information gathered by two investigators resident in the survey villages during each day of the year.

Employment Effects of the "Green Revolution" and Mechanization

Considerable attention was devoted to the extent to which the increased demand for labour following the adoption of the high-yielding varieties was met by hired and family labour. Various papers and discussants suggested that the input of hired labour had been increasing faster than that of the family labour. Some speakers suggested that the scope for increasing the input of family labour was limited although it may not be so in the case of families of large landowners. In the latter group of households the social prestige considerations and/or the preferences for leisure might lead to even a withdrawal of family labour. It was noted that the input of family labour was generally specific to particular operations and the situation may change. The subject deserves continuing studies.

As regards mechanization, it was pointed out that the term was not equivalent to tractorisation. The effects of mechanization on employment need to be studied with due attention to the nature of operations and the crop-mix. However, the key question is the extent to which tractorisation is crucial for the adoption for HYV's or multiple cropping. In other words, cross-sectional studies of labour input on tractorised and bullock using farms do not conclusively show the employment effects of tractorisation, because of the possibility that without tractors the same work could be performed through a larger input of labour. (Comparative studies of trends in labour employment over time are more useful and should be encouraged.) Also the local shortages of labour could perhaps be met through planned migration of labour from other areas. Therefore, a question was raised whether a central decision-making authority like the Planning Commission would have chosen to acquire the same number of tractors and other items of mechanical equipment as has been done by the individual farmers making their own decisions.

In the ensuing lively discussion, several speakers expressed the view that an increase in the intensity of cropping would be restricted by the non-availability of labour, and hence the introduction of tractors or other mechanical equipment. Besides, the tractors were of crucial importance in many cases because without them, intensive cultivation would require not only more labour but also more bullock power, with the need to divert land to the cultivation of more fodder. However, the motives for tractorisation were complex and included a desire to avoid the difficult task of managing a large number of workers. The non-availability of smaller tractors had led to over-capitalisation on many farms (facilitated by easy availability of credit for the purpose from public sources). The intensity of tractor use varies widely and deserves careful study. Moreover, an attempt at planned migration of labour would encounter serious difficulties in the form of likely demands by labourers and the cost of transportation, etc., might exceed the gains in so far as such labour would be required to meet only the peak level demand for a relatively short duration of time. In the opinion of some participants, however, the actual pace of tractorisation was substantially faster than was necessary and was not consistent with the relative social costs of labour and capital. Also a substantial amount of seasonal or more permanent migration does occur in many parts of the country and it is necessary to study the characteristics of these migrants with due attention to their conditions at their places of origin and the extent of their gains from migration.

As regards the sharing of the benefits of higher productivity, the favourable effects of the growth of trade unionism among agricultural labourers of Thanjavur district of Tamil Nadu were pointed out. A reference was made also to the interesting experiment undertaken by the Muzaffarpur Development Agency in Bihar, under which the grant of funds for boring tube-wells and other socially subsidised investments is made conditional upon landowners

agreeing (through a written contract) to raise the wages of agricultural labourers in the same proportion as the increase in productivity. There may be some time lag in the resultant sharing of the gains of productivity and the actual experience of the Agency would need to be studied carefully to understand the various operational difficulties. However, such a procedure can be a possible substitute for militant trade unionism and may smoothen the process through which wages of labour rise *pari passu* with productivity.

As regards the socio-economic constraints on the mobility of labour such as result from the grant of interest-free loans by landowners, it was felt that the available information is not adequate and may even be misleading. The phenomenon needs to be studied carefully to ascertain the extent of associated benefits, if any, that accrue to such labourers and the manner in which they differ from attached labourers.

Finally, attention was devoted to the various schemes undertaken to increase rural employment. It was felt that a large number of worthwhile projects remain to be undertaken in rural India. But flexibility regarding the size of the wage-component may be critical in ensuring that such employment programmes do not degenerate into a device for granting doles. Technically sound projects for the creation of durable productive assets need to be prepared for each district. In considering such assets, the secondary employment effects deserve due attention. The minor irrigation projects, for example, bring about a substantial change in the nature and intensity of agriculture with a significant increase in employment and should be assigned high priority. Careful surveys of underground water resources would, of course, prove extremely useful in planning an extensive network of wells. It has been estimated for Maharashtra that if the underground water resources are tapped through wells, that would go to the depth of 200 to 300 feet, the total irrigation potential (*i.e.*, the area that can be irrigated if all water resources are tapped) would increase from nearly 30 to 37 per cent of the cultivated land area in the State. (It is expected that the import of mechanical equipment required to bore deep wells would be aided by a World Bank loan and the number of such wells may exceed 200,000.)

A reference was made to the efforts at district planning undertaken in Dharmapuri and Ramanathpuram districts of Tamil Nadu and in one district of Kerala. In such plans, the skills available in the district could be considered to evolve a certain amount of "manpower balance." Such efforts could be more effective than a "crash scheme" in mitigating and eventually solving the problem of rural unemployment. It was felt that better co-ordination and co-operation between the planning authorities at various levels and the academic community in general and interested economists in particular could make a useful contribution to such efforts although a fair degree

of flexibility in bureaucratic procedures might be a pre-requisite for their success.

Some useful contribution can also be expected from the programmes of semi-Governmental agencies like the Khadi and Village Industries Commission, which cater to the needs of rural artisans. The employment potential of the programmes undertaken by the Commission needs to be evaluated carefully with due attention to the pattern and elasticity of demand as well as the cost differences in various techniques of production.