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RAPPORTEUR'S REPORT

ON

ECONOMICS OF NUTRITION

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Out of 47 papers received on this subject, 27 papers have been accepted for discussion. The papers covered the different dimensions of the nutrition problem such as the present nutrition status of different socio-economic groups in the various parts of the country, the recent trends in the availability or intake of food in the wake of the Green Revolution, the factors affecting the level of nutrition, etc.

(*i*) A large number of papers have made attempts to assess the nutrition status and quantify the extent of deficiency. The papers by B.N. Singh and R.K. Pandey, K.D. Rajmane, V.C. Kale and T.G. Satpute, and H.S. Aulakh and G.S. Kainth, to mention a few, belong to this category. These papers incorporate the results of sample surveys conducted by the authors. The data have been collected by the interview method in the selected households. However, the methodology used in these surveys is not explained in sufficient detail to enable the reader to form any judgement about the reliability of the data. For example, it is not clear whether the enquiries were 'food consumption surveys' or consumer expenditure surveys; it is not indicated as to from whom the data were collected, whether the head of the family, the housewife or just any member available at the time of the visit by the investigator. Nor is it explained as to how the nutrient values were derived, what allowances were made for estimating intake at the physiological level. The reliability of data obtained through consumer expenditure surveys for estimating nutrient intake, the inadequacy of even food consumption surveys and the margin of error involved at the stages of collection and tabulation of the data, not to speak of the difficulty involved in estimating inter-personal and intra-personal variations in nutrient intake are now well-known. Moreover, by and large, in this set of papers the economic aspects of nutrition, which should be the primary concern of our profession, are not touched at all.

(*ii*) An attempt is made by some authors to identify the factors which affect the level of nutrition of different socio-economic groups, see, for example, the papers by B. Sarveswara Rao and K.S. Krishna, and V. K. Pandey, S.L. Shah and B.K. Singh. This set of papers is also based on the analysis of primary data collected through sample surveys conducted by the authors. Though the afore-mentioned methodological issues are equally applicable to these papers also, the authors have made an effort to examine the relationship between food intake and relevant demographic and socio-economc variables

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such as family size, level of income, size of operational holdings, level of education, etc. Among other things, these studies bring out that it is calorie deficiency more than protein gap, it is undernutrition rather than malnutrition, that is the crux of the problem, that calorie deficiency is, by and large, prevalent among agricultural labourers, small farmers or other low income groups. These findings lead to the conclusion that the root cause of undernutrition and malnutrition is the lack of adequate income and purchasing power due to the low level of employment, inequalities in the distribution of income and wealth, inadequacies in the coverage of the public distribution system, etc.

(*iii*) Drawing upon the data collected through a sample survey covering four villages around Delhi, K.R. Gunjal and G.S. Ram attempt to formulate a least cost diet using the linear programming technique. They compare the cost of such formulations with the current earnings of farm households and agricultural labour households and proceed to examine the efficiency of the pattern of expenditure on food in terms of nutritional intake and explore the possibililities of reducing calorie gap through better management of resources.

(*iv*) Another set of papers is based on the analysis of secondary data on food intake. On the basis of the results of the National Sample Survey (NSS) 25th Round, M.A. Muralidharan, P. Kumar and V. K. Sharma attempt to assess the extent and nature of deficiency in food intake by farmers in Eastern Uttar Pradesh and examine the relationship between nutritional level and variables like annual income, size of family, education, percentage of expenditure on purchased foods, etc., by using the technique of correlation analysis. A.J. Singh, D.S. Sidhu and A.S. Joshi analyse the NSS data on consumer expenditure to compare the pattern of food intake in Punjab in 1961-62 and 1971-72, and construct a 'composite index of nutrition' and proceed to examine the shifts in the level of nutrition that occurred in the State during the 'sixties. J.L. Kaul, S. S. Grewal and P.S. Rangi study the inter-State variation in the intake of calories and protein on the basis of the results of the diet surveys conducted by the National Institute of Nutrition; they come to the conclusion that per capita income and/or per capita availability of foodgrains are the two factors behind the inter-State differences.

(*v*) An attempt is made in a few papers to assess the impact of the Green Revolution on the nutrition levels in selected areas. For instance, James G. Ryan and M. Asokan compare the trends of production of foodgrains in six major wheat growing areas during a ten-year period prior to 1964-65 and the succeeding decade, examine the changes in area under wheat and that under other foodgrains like coarse cereals, pulses, etc., and estimate the net increase in the availability of major nutrients like calories, protein, etc. They proceed to estimate that the total foodgrains production in the six States in 1974-75 would have been 13.4 per cent less had the high-yielding varieties (HYV) of wheat not been introduced and, therefore, the net nutritional impact of the

new HYVs of wheat was both positive and substantial. Further, the policy conclusion emerging from the analysis is that a plant breeding strategy which emphasizes increased yield potential can result in significant improvements in aggregate nutrition levels.

The paper by N.V. Namboodiri and S.N. Chokshi is another attempt to study the impact of the Green Revolution, though their conclusions apparently differ from those of Ryan and Asokan. Namboodiri and Chokshi do concede an increase in the per capita availability of calories from cereals after 1965; but there has been a decline in area and/or production of pulses. The stagnancy in the production of pulses, on the one hand, and the fast rate of population growth, on the other, have widened the protein gap. They at the same time observe that the substantial increase in the production of wheat, leading to a fall in its price which in turn would enable the low income groups to consume more wheat, should reduce the proteingap. The conclusion emerging from the above seems to be less categorical than that of Ryan and Asokan.

(*vi*) In all the papers reviewed so far, which attempt to assess the nutrition level and estimate the proportion of population suffering from undernutrition and malnutrition, the norms adopted are the average per capita requirement as recommended by the Expert Group of the Indian Council of Medical Research. How firm and final are these per capita norms? Do the norms make sufficient allowance for inter-personal and intra-personal variations in calorie and other requirements? Is the use of the average requirement as the cut-off point in defining undernutrition a valid procedure? P.V. Sukhatme, who had raised these questions on earlier occasions, pursues these vital issues in his paper. He points out that the use of average requirement as the cut-off point for undernutrition implied that the requirements of all individuals within each of the several age-sex groups are identical, that is, inter-individual variation is zero. Further, it implies that the requirement is constant in an individual, that is, intra-individual variation is zero. He proceeds to show that neither of the assumptions is true. Sukhatme's conclusions have significant implications both for the assessment of the magnitude of the problem and policy options.

(*vii*) No doubt, large numbers in our country suffer from undernutrition or malnutrition or both. The estimate of the number involved would obviously vary according to the norms and methodology adopted. However, available information on the broad magnitude of the problem seems to be sufficient to understand the problem and stimulate thinking in terms of effective policies.

Research in the past by nutritionists and social scientists has also brought out the essential nature of the problem. The crux of the problem consists of calorie deficiency rather than protein deficiency; it is primarily undernutrition rather than malnutrition.

It has also been recognized that the root cause of undernutrition and/or malnutrition is the low level of income of the masses, which is a reflection of the prevailing institutional set-up and policies of the Government. The papers presented at the Conference contain fresh evidence to corroborate the above propositions.

Now that we know how serious the problem is and what its underlying causes are, we should exercise our minds on how best to solve the problem, given the various constraints. The following issues are placed before the Group for consideration.

1. Will economic growth and rise in per capita income lead to improvement in the nutrition status of the masses?

2. Does an increase in food output necessarily make a dent on their level of nutrition?

3. How effective are the nutrition intervention programmes implemented by the Government?

4. Can we view the nutrition problem in isolation? Can we envisage an integrated approach, involving food production and distribution, employment and income, investment and growth?