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II

SUMMARY OF PAPERS AND DISCUSSIONS

AGRICULTURE AND ITS TERMS OF TRADE

Retrospect : The Shifting Fortunes of Agriculture

The main theme for discussion at the Tenth International Conference of Agricultural Economists was '*Agriculture and Its Terms of Trade*'. The discussions of the theme opened with a '*Retrospect of the Shifting Fortunes of Agriculture*' by three eminent economists. **Prof. Arthur Lewis** of the University of Manchester, U.K., read a paper outlining the general setting of the problem. He stated that the fortunes of agriculturists depend not only upon the prices they receive, but also upon their productivity. If real prices halve, but productivity doubles, they are no worse of than before. In practice, farmers are interested not only in their own absolute standard of living, but also in how their earnings compare with earnings in other occupations. So, in comparing members of the same community, the terms of trade which matter are not the commodity terms of trade but the factoral terms of trade. The behaviour of the factoral terms of trade depends on three movements, viz., (a) the comparative rates of growth of demand for agricultural and for non-agricultural products ; (b) the comparative rates of growth of productivity in agricultural and in non-agricultural industries ; and (c) the mobility of the population into and out of agriculture. As the balance between these different rates of growth is different in different phases of economic development, he discussed the problem in relation to the under-developed countries and the developed countries separately. Dealing first with the role of agriculture in economic development, he examined issues relating to the role of mobility in agricultural adjustment in the latter section.

Prof. Lewis stated that the role of agriculture in economic development may be distinguished in three cases : (1) whether development begins outside agriculture ; (2) whether development begins with agricultural exports; or (3) whether development begins with greater productivity in food for home market. According to him the third case is seldom if ever self-sustaining. If economic development begins with increased productivity in food while the other sectors of the economy remain stationary, the farmers would be at a serious disadvantage. And in the long run it may happen that more of the farmers' children would live and that equilibrium would be re-established with a larger agricultural population. Though one can conceive of a case where economic development begins with increased productivity in food accompanied by rapid movement of farmers out of food into other occupations, the history, however, does not provide even a single instance of this kind.

If development begins outside agriculture in a closed economy, it generates an increase in demand for agricultural products. But the failure of food output to grow adequately would turn the factoral terms of trade against the non-agricultural sector, which would retard its expansion as it is happening in India and China to-day. If the economy is an open economy the imports of agricultural products to match the expansion of industrial output and employment may be possible. But this may lead to a balance of payments crisis as in contemporary England. The solution, therefore, lies through reduction in investments, export

drive for manufactures or increase in agricultural productivity. Agricultural productivity can be increased at a cost which is a fraction of what governments spend on their other programme. Governments of Asia and Africa having started realising the importance of food production but still there is hardly any country in these regions where the Ministry of Agriculture is occupied by a Senior Cabinet Minister.

If the economic development begins with an increased demand or supply of agricultural exports, no difficulty of balance of payments would arise, if the countries live within their own incomes. It is very necessary, therefore, to give adequate attention to increasing of exports in a plan of economic development. However, the disadvantage in this process is that the development of manufacturing industry is discouraged. Secondly, difficulties are faced in securing favourable terms of trade for agricultural exports particularly in the tropical countries. As the productivity of the food farmers in these countries is generally very low as compared to that of the food farmers in countries of the temperate zone. However much productivity may arise in tropical agricultural export crops; the terms of trade will always adjust themselves to keep down the standard of living. Thus, if tropical countries cannot rely for major development solely on the income of agricultural exports, neither can they become prosperous simply by producing more food for home consumption. They must look instead to the balanced development.

In the advanced countries the demand for food tends to grow less rapidly than the supply. With the technological advance, the terms of trade move against the farmer. The solution in their case lies in reducing the number of farmers on the farms and increasing the size of holdings.

Prof. D. Gale Johnson of the Chicago University, U.S.A., while reviewing the shifting fortunes of agriculture in the highly developed countries, stated that farm families have apparently shared fully in the growth of real *per capita* income over the past century. In other words, the functioning of markets, primarily factor markets has been such as to result in real income increases for farm people of the same order of the magnitude as enjoyed by persons in the rest of the economy. Thus, despite the low income elasticity of demand for farm products, the rapid adoption of technological change, the low price elasticity of demand and the higher birth rates in rural areas than in the urban areas, farm people have enjoyed the fruits of the economic growth.

In the developed countries, the farm people have shared in economic growth in three other ways. First, the difficulty of physical labour has declined on farms in much the same way as in the rest of the economy. Second, the amount of time worked (per week or year) seems to have decreased in much the same way as in urban employment. Third, there has been a significant decline in the proportion of women and children doing farm work.

Another fundamental relationship pointed out by him was that the return to labour in agriculture has been, and continues to be, below the return to comparable labour in the rest of the economy. He pointed out that the effect of support of agricultural policy has been to increase farm output especially through inducing

greater investment in machinery and through increased purchases of non-farm production items such as fertilisers, and to increase land prices. The long-run increases in labour incomes due to such programmes have certainly been quite small, given the relative ease with which labour can be induced to remain in agriculture, since a positive decision is required if labour is to leave. It is pointed out that there must be some income differential to induce the migration of farm labour to non-farm occupations; farm labour earnings will be below non-farm for comparable labour. He stated that if a part of the expenditure on agricultural policies would have been spent on expediting the transfer of labour from agriculture to non-agricultural occupations, farm labour returns could have been increased quite substantially. However, it has not been politically expedient to attack the problem directly by aiding the transfer of labour from agricultural to non-agricultural occupations.

Another relationship to which he referred was, that the average farm incomes vary significantly from one area to another within the same economy. Some slow progress is being made towards raising incomes in the low-income areas through high rates of migration but the time required for adjustment seems inordinately long. He pointed out that even the most highly developed economies with relatively cheap methods of transportation and national communication systems have difficulties in maintaining even development of all geographical areas. This is true of the socialist or communist economies to at least the same degree as it is of the private enterprise economies.

Lastly, he referred to the decline in the relative importance of agriculture in the national economy and in many cases the absolute decline of farm employment in the developed economies. Referring to acceptance of the apparent inverse relationship between national *per capita* income and the percentage of the nation's labour force engaged in agriculture as proof that the way to increase *per capita* income is to industrialise as rapidly as possible by concentrating investment funds in the urban sector, he made the following points. First, the high proportion of the labour force engaged in agriculture is, in itself, a consequence of a low level of productivity in the economy as a whole. If food output per farm worker is low, the proportion of the total population engaged in agriculture must necessarily be large. An increase in the non-farm population at a rapid rate under these circumstances will lead to a shortage of investment funds, to difficulties in obtaining the necessary imported capital equipment and to the inflationary disturbances. Second, the experience of more developed countries is quite consistent with the view that the rate of return on many types of investments in agriculture are fully as high as in the industrial sectors. Some investments will be primarily labour-saving while others may have primarily an output effect. But both are important over a period of time. Even labour-saving investments in agriculture which release labour at a more rapid rate than at which industrial employment increases, and are used for building schools, roads, sanitation facilities and other labour-intensive special improvements, can be of great benefit. Third, the experience of more developed areas show that, as the real income of the farm population increases, a considerable demand is created for services from the non-farm sector. This, in itself, results in a reduction of the proportion of the population engaged in agriculture. The shifting fortunes of farm people in the developed countries have been a long-run process of improvement, limited in large part of the *per*

capita growth of real income of the particular national economy. There is evidence that, at any point of time, the real returns to agricultural labour are less than for non-agricultural labour, but there is no indication that the difference has widened over time and in several countries it has apparently narrowed.

Prof. D. R. Gadgil, Gokhale Institute of Politics and Economics, Poona, India in his paper dealt with the shifting fortunes of agriculture in less fully developed countries. Viewed as a human problem, the problem of agriculture is essentially a problem of the less developed countries.

While giving the statistical background of economic developments in these countries, he stated that the rate of growth of population in these countries is relatively higher than the average world rate. A large proportion of population in these countries is dependent on agriculture for livelihood. Although the agricultural production has shown a rising trend in the post-war years, the *per capita* agricultural production is still below the pre-war level. The rate of industrial production is, however, much larger than that of the agricultural production. In respect of food output the *per capita* food production is also below the average for the pre-war years. After the war, international trade in agricultural commodities has reached the pre-war level. However, it showed two important variations, *viz.*, that the exports from North America of food and feeding stuffs have increased considerably and there is complete cessation of food exports from the ECAFE region. Referring to the agricultural prices, he stated that during the post-war years, agricultural prices have recovered from the low level reached in the thirties. However, there seems to be an adverse trend in the parity since 1954. This was counteracted to a certain extent by the growth of agricultural output. Referring to the terms of trade of agricultural products in the international trade, he stated that there was unevenness in the distribution of the gains and continued instability in relation to the volume and value of old trade in agricultural products. In view of the changes in purchasing power of agricultural commodities from period to period which are spread unevenly over individual agricultural commodities, he stated that greater emphasis should be placed on diversification of agricultural production or on selective expansion.

In order to meet the increasing demand for food, which accompanies a rise in income level and to provide for large agricultural exports for importing capital goods for industrialisation and also to provide a wider agricultural base for sustained industrial development, increasing and diversifying agricultural production is necessary in these countries and most of them provide for this in their national development programmes. Besides the programmes for increasing area and productivity, the other aspects of the programmes of agricultural development include land reforms, provision of better credit and marketing facilities, control, support and stabilisation of prices and subsidies for long-term development programme of land improvements and purchase of fertilizers, etc. In the under-developed countries, price policies cannot increase the share of the agriculturist in the total national product as the agriculturist is here the majority group. Nevertheless, through any incentive effects that they have, they might increase total production and might increase the average real level of incomes through elimination of uncertainty and fluctuations.

In order that the policies for stabilisation of agricultural prices prove effective, efforts at international action towards this end have been marked since the thirties. International Commodity Agreements were entered into which brought the producers and consumers together in one agreement. Wheat and Sugar agreements are two important among them which affect the less developed countries. Some countries have entered into bilateral trade agreements.

In the post-war period social welfare policies have been responsible for improving the conditions of the people in a number of countries. However, significant programmes of social security, etc., have not been undertaken in most of the less developed countries. Even allocations for education of rural population in some countries are very low. The data on national income show that in all less developed countries the agriculturist is relatively inadequately rewarded. The *per capita* income in agriculture is less than one-half of that in other occupations. But there are no data to study the trends in *per capita* income. A study of total income in agriculture in some countries revealed that in Philippines and Brazil the share of agriculture rose continuously from 1950 to 1955. In other countries the share of agriculture in the total in the years after 1952 was less than in the years before 1952. Because of stratification within the agricultural community and because of better economic position and hold of some groups over the rural community, the favourable trends may not necessarily prove beneficial to the bulk of farmers.

The two main factors responsible for low relative incomes in agriculture are economic instability in agriculture, and immobility outwards associated with mobility inwards. The demand instability in respect of agricultural products has intensified during the post-war years. All national and international attempts to make markets and prices for the agriculturists more stable have achieved little real success. Rapid growth in population continually adds large numbers to agriculture and the limited number of openings in other occupations reinforces the other factors responsible for outward immobility. In the older, the poorer and the more populous of the less developed countries all the factors operate in a cumulative manner. Unless in some way or another, the vicious circle is broken there is little prospect of the beginning of an upward trend, relative or absolute, in the fortunes of the agriculturist.

Dr. Karl Brandt of U.S.A. in his speech made some comments on these three papers. As regards the movement of farm population outside agriculture, he said that the income differential between farm and non-farm employment is necessary to induce wider transport. In other words, farm labour earnings must be lower than for comparable labour elsewhere in order to keep economic development and lifting of farm incomes going.

Referring to the agricultural policies of the industrially advanced countries, he expressed the view that if these countries unload the by-products of their agricultural policies with subsidies on other countries, it has damaging effects on the economies of the latter. If they cannot abstain from such policies they should at least compensate their negative economic effects abroad by a substantial positive economic aid. According to him, such economic aid should be channelled into industries which supply agriculture with means of production and thereby get effective aid for greater productivity of their labour.

Referring to the price stabilisation policies he stated that elimination of seasonal fluctuations is uncontroversial. But when it comes to price stabilization over long periods, he was of the view that these measures may not be in consonance with the constructive agricultural policy if they lead to transfer of capital from agriculture to other industries.

Prof. Max Rolfes of Germany in his speech referring to Prof. Lewis's statement that the remedy for ills of farmers is to have fewer farmers stated that to use this remedy effectively, the non-farm sectors should be in a position to absorb the surplus man-power in agriculture. Alongside, in such measure as we take man-power out of agriculture we must at least under the Central European conditions put capital into agriculture. Discussing the readiness with which and the cost at which man-power could be moved out of agriculture, he referred to the four types of institutional structures of agriculture. The large commercialised farms which are highly susceptible to changes in costs and prices have very high elasticity in adjusting to such changes. They have reduced their labour costs through mechanisation and capital invested gives good returns. The second type is small farms which are highly commercialised and cultivated very intensively. These farms are very susceptible to price fluctuations but they cannot take to the remedy of mechanisation like the big commercial farms. They have low adaptability and many times become sub-marginal. The third type is the family farms of the mixed farming type which produce more for domestic consumption than for the market. On these farms farming is stabilised at a lower level. On these farms the problem of rationalisation of labour is influenced by sociological as well as economic considerations. But even under economic aspects there are great difficulties in transferring man-power out of this section into other parts, as the proportional cost of labour is high and mechanisation is not practicable. In other words, modern economic development tends to render quite a section of family farming sub-marginal. The obvious remedy is to increase the size of farms which depends on availability of land and capital. The fourth type is that of part-time farmers. This type is fast fading out due to pull on the operators from the industrial labour market.

Technical Peculiarities of Agricultural Supply

Dr. Sherman E. Johnson of the United States Department of Agriculture, U.S.A., read a very interesting paper on "*Technical Peculiarities of Agricultural Supply*." The analysis was presented in relation to supply conditions of two types of farming, viz., commercial farming and semi-commercial and subsistence farming. On commercial farms production is largely market-oriented. Purchased inputs constitute a major share and family labour a gradually decreasing part of the farmer's production resources. Substantial increases in the level of output usually occur in response to favourable price-cost relationships. Output tends to be maintained under unfavourable prices and costs; in fact, it often continues to increase even under such conditions. These farms have three basic characteristics. First, maximization of net money income is the primary condition in changing production. Second, farmer operators are alert to changes that will increase incomes. Third, non-farm inputs constitute a major share of the production resources used by these farmers. The effect of the third characteristic is that it generally increases output per farm and in total.

It makes it rather difficult for farmers to get in and out of production in short periods of time. It increases earnings of the individual farmers even in periods of low prices because most of non-farm inputs have a high marginal productivity per dollar of increased expenses. Because of these effects there is a strong tendency towards outward expansion in total output on commercial farms when price-cost relationship is favourable. There is also a tendency to increase area under cultivation if available. Further output per worker increases which leads to increase in farmer's incomes. Thus adoption of new techniques results in reduction of cost per unit of output and is usually associated with an increase in total output.

Once the total output has expanded, it is quite unresponsive to less favourable price and cost relationship for the reason that inputs which have been added are highly productive as long as the farm continues in operation. Consequently the supply curves on individual farms are not readily reversible in response to lower prices. Further, some farmers who have not adopted new improvements will find the marginal productivity of additional capital even at low prices still high enough to yield a net return on the use of more non-farm inputs. Total output, therefore, tends to be maintained under declining prices and net incomes. In fact, under such conditions, output actually tends to increase. In a dynamic economy, total output may continue to increase for sometime despite considerably lower prices and reduced incomes, though its rate may slacken down.

On the subsistence farms, the supply of agricultural products is subject to three conditions. First, land and labour constitute the large bulk of the inputs and only a small part of the production resources are purchased. In the absence of alternative employment, these resources are retained in agriculture even when farm prices decline. Second, production is mainly for domestic consumption. Thus the quantity marketed varies substantially with yield conditions. Market is unorganised. As a consequence of the nature of farmers' production plans and price uncertainty, there is little response to either upward or downward movement in farm price and cost conditions. Third, the tenure system plays a significant role in impeding changes in agricultural supply. Despite these conditions, because of Government policies to encourage adoption of new technology and to increase output, agricultural production has increased in several subsistence areas. Sustained improvements in levels of living can be obtained only by increasing production per farm worker and thus widening the margin of output above the minimum needs of the farm population. This will involve adoption of new technology and changes in economic organisation of production and distribution of farm products. This may be brought about by intensive cultivation of land. However, eventually more complex changes, technical, economic and institutional, are needed if productivity levels are to continue to rise at significant rates. In less developed economies, the higher income elasticity of farm products is likely to sustain adoption of improved technology, greater commercialisation and resulting increases in farm output at prices and income relatively favourable to producers. Under these conditions it is desirable to strive for farm output expansion in order to reduce the food deficit and to provide food insurance for the entire social group. It becomes extremely important to achieve the higher output by means that will result in greater production per worker.

Commenting on the paper by Dr. Sherman Johnson, **Dr. A. Gonzalez Santos** of Mexico stated that the tendency of agricultural production to oversupply and the consequent deterioration of the terms of trade are of a great importance especially in the case of under-developed countries. In these countries economic development has to be based to a large extent on agriculture. Farm output has to be increased enough to meet the needs of farm population and in addition, has to pay for imports of capital goods required for development of agriculture and industry. Growth of agricultural supply must be simultaneous, if not previous, to industrial development as a means to advance this development, but always with the net result of over-supply of national and international markets of export crops. If balanced development is a goal, and a desirable condition, frequently out of reach of countries that are in the first stage of the development, as Dr. Johnson states, giant strides in development of non-farm enterprises are required in order to absorb the surplus farm population and expand national market for agricultural output.

Prof. Aresvik of Norway in his speech said that though it is true that maximisation of net money income is the primary consideration in changing production on family-operated farms, agriculture here is not only a form of production but also a way of life with certain cultural and social values which together with money income determine the total welfare. That the use of non-farm inputs generally increases output may be a questionable statement in the form in which it is given. It may also represent a substitution of production factors. Such cost-reducing substitution is very important where we have surplus of agricultural production and should perhaps be stressed more by the extension workers.

Regarding the high marginal productivity of non-farm inputs, he stated that the conditions for maximum return must be far from fulfilled and especially so before the drop in the price-cost ratio.

Regarding the commodities produced on small farms, he stated that if the commodity is not important for the producers' total income, they have ordinarily declining demand curve ; if, on the other hand, the sale of the commodity is important to the producers' income so that changes in the price also affect their marginal utility of money, the effect can be that home consumption declines when prices fall below a certain level and rise again when prices rise.

He also emphasised the importance of organising and regulating marketing conditions for agricultural products alongside the technological improvements.

Changes in Demand for Farm Products

Prof. M. Cepede, Institut National Agronomique, Paris, France, read a paper on '*Changes in Demand for Farm Products*'. For purpose of analysis, he divided farm products into two groups, viz., food and non-food. Discussing the demand for non-food products, he stated that on the one hand, these products are facing growing competition from non-agricultural substitutes. On the other hand, the demand for these products from the chemical industries as raw materials is growing. However, as the use of natural renewable forces for purposes of power and energy will grow, the non-food products will have to face competition from them also.

It is rather difficult to forecast the future course of demand for non-food products. However, it is observed that any increase in the standard of living results in a greater increase in expenditure on non-food commodities and services. In studying demand for competing and complementary commodities, Prof. Schultz proposed comparing the coefficients of variation for the price and supply ratios for two competing commodities to measure the degree of substitution. If the two items were nearly perfect substitutes, the price ratios will be nearly constant, whereas the supply ratios would be expected to vary considerably. If the two items were complementary, the price ratios would vary more than the supply ratios. Thus the ratio of coefficients of variation for the two ratios would vary between zero and one for substitute commodities and for complementary goods it would be more than one. To this test objections have been raised by some agricultural economists. In view of the limited space allotted to his paper, he did not examine Prof. Schultz's test.

The demand for food is inelastic. However, as the calorie content in diet rises, the proportion of animal products increases. But the production of animal products requires much larger production or use of food products. Thus the inelasticity of food demand even in terms of aggregate volume of farm products is less rigid than is usually felt. He suggested the method of comparing the changes in calories consumed daily with the initial calories required for such consumption. By considering population trend and level of income it may be possible by using such methods, to forecast the aggregate demand for food products in terms of agricultural production.

Another approach to forecasting demand for food products will be to measure elasticity of total food expenditure relative to total living expenditure or disposable income. This method is very useful for short-term studies dealing with a rather homogeneous group in which elasticity may be known with a reasonable degree of accuracy. In a more general study it is obvious that such complex data cannot be adjusted for very different conditions, whereas the need for food expressed in calories and initial calories is physiologically defined with a greater and more similar rigidity for every human being at a certain level of living.

Changes in demand for specific groups of food can be studied by using two approaches. First, elasticity of expenditure in a certain group of foodstuffs can be calculated in correlation with total living expenditure or disposable income. Inside each group the problem of change in demand for specific food may be dealt with by using the methods of studying demand for competing (or complementary) commodities. For studies dealing with a wider range of conditions and/or nutrition levels the method of using volume of consumption of groups of food may also be applied. However, the forecast will be less precise if the group of foods considered is narrowest, thereby making substitutions easier.

In this connection he referred to a study made in 1952 which pointed out that (a) the consumption of pulses declines not only in percentage, but even in quantity when the level of nutrition increases, (b) consumption of expensive food increases more than proportionately when the level of nutrition rises, (c) consumption of staple food including starchy foods increases and stabilises itself, reaching

a maximum at a level of about 2,500 calories consumed per day and decreases when the nutrition level continues to rise. Changes in the composition of population may influence the needs and consequently the demand for specific foods at a given economic level. Changes in the distribution of disposable income in a population will have similar effects. Consequently one of the lines of action for a policy of welfare including a nutrition policy may be to intervene in the distribution of disposable income in order to foster a demand in better line with a greater satisfaction of primary needs, of which food is the most important.

Commenting on Prof. Cepede's paper, Prof. Misawa of Japan referred to the functional relationship between *per capita* number of calories consumed and *per capita* number of initial calories and stated that usual method in economic analysis of measuring changes in demand in relation to changes in the level of living is to measure demand changes relative to income changes. If the income terms would be adopted instead of calories, changes in demand relative to changes in the level of living would be expressed in more exact economic terms. Referring to the measurement of 'initial calories' to represent demand for aggregate food products, he said that requirement of food exists not only in calories, but in proteins, vitamins minerals, etc., most of which drop out of account in the calculation of initial calories. If a satisfactory common denominator is not available in physical terms, another way would be to introduce price terms. He further stated that more accurate features of changes in demand would be obtained when elasticity analysis is applied to a more homogeneous consumer group in a specific period and it may be found that even the same kind of food has fairly wide range in income elasticity or expenditure elasticity of demand according to the group and also to the period.

Changes in Composition of Farm Inputs and Farm Outputs

Prof. N. Westermarck, Helsinki University, Finland, read a paper dealing with changes in composition of farm inputs and farm outputs with changes in terms of trade. The greater the physical output of a sales produce is per area unit and the greater the advantage a product has from developed terms of trade, the greater the dependence of the production on the terms of trade. On the basis of available farm account data for the Scandinavian countries, he showed that the proportion of trade part of inputs to total farm costs indicated a rising trend during the twenties, a downward trend during the depression years and again a rising trend during the second half of the thirties. During the war years the proportion showed a declining trend reaching the lowest point in 1945. Since then it has been showing a rising trend. To what extent these trends depend directly on the developed terms of trade and to what extent on industrial progress is impossible to ascertain, but it is probable that changes in terms of trade have played a considerable role. With the market purchased element of inputs increasing, *ceteris paribus*, the farm business will be more sensitive and more vulnerable with respect to price fluctuations and opportunities to secure requisites and capital goods. This sensitivity becomes apparent even in the matter of an increased need for credit, and consequently in a greater dependency on the credit market. On the other hand, with the increased use of commercial fertilizer, machinery, feed, etc., the farmer will have greater resisting power against unfavourable weather conditions and other natural factors.

Examining the connection between commercialization and changes in output, he said that physical distribution of products is very important in a highly organised and highly specialized society. Referring to the process of vertical integration of production, he stated that the processing of farm products is being gradually taken over by processing plants and factories and the farms are becoming more and more producers of raw materials for them. As a result, it is possible to secure the fixed capital which is not possible for an individual farmer to secure.

With the development of transport and the consequent change in terms of trade, changes in the types of farming also take place. For example, with imports of wheat from U.S.A. there was a change from crop to livestock production in British agriculture. The second effect is that fodder crops are grown in one region and fed to livestock in another area. But in smaller countries, the benefits of regional specialisation are negated by custom barriers.

Referring to the proportion of cash receipts to gross revenues, *viz.*, output, he pointed out that the trend is gradually upward since 1920 in South Firland. During the depression the proportion actually showed a rise. The trade part of outputs on small farms showed greater variation than on large farms and has risen more rapidly with developed terms of trade than on large farms. This happened because the small farmer first satisfies his family demand for the farm products and then sells the remainder in the market.

The Disparate Stability of Farm and Non-Farm Prices

Prof. A. F. Hanau, Goettingen University, Germany, discussing the differences in stability between farm and non-farm prices stated that a more simple comparison between primary and secondary products is not enough for analytical purposes. A number of important features which deserve attention in comparison of these prices include, among others, the processing and trading stage, market organisation, utilisation and elasticity of demand and behaviour of supply. Thus prices of raw materials vary more than those for finished products; wholesale prices vary more than consumer prices, prices on world market vary more than the prices on the home market. Under perfect competition prices fluctuate more than under imperfect competition and finally farm prices fluctuate more than non-farm prices.

On the supply side, agricultural production being dependent on nature is exposed to wide fluctuations. Thus adjustment of supply to demand is not possible as in the case of industrial production. Further, the conditions obtaining in agricultural production being radically different from those obtaining in industry, temporary surpluses cannot be overcome in agriculture by working short time or by cutting production. Industrial supply is relatively dependent on price-cost relation but the supply of agricultural commodities is not strictly dependent on commercial methods of production. If the total supply is too high for the demand, the farmers still keep to their production level, because a reduction in production would not improve the position of the individual farmer, thus resulting in downward rigidity of supply. The price support and Government subsidies in agriculture by which agricultural production receives stimulus also deserve special consideration. Agricultural supply, therefore, exercises an influence on the formation of prices.

On the demand side, a distinction has to be made between the demand for foodstuffs and that for industrial raw materials. Within the group of foodstuffs, there are considerable differences among the different commodities. For instance, the demand for cereals is highly inelastic, that for animal products less inelastic; but that for fruit and luxury goods is highly elastic.

An examination of behaviour of agricultural prices during the trade cycles before 1929 and especially before 1913 showed that on the whole prices of agricultural products were relatively unaffected by small variations in general business conditions. On a closer examination, however, it was found that those agricultural products were least affected for which the income elasticity of demand was small. Since the great depression every Government has endeavoured to achieve a sustainable economic growth and the idea of 7-11 year trade cycle has been given up. He then proceeded to discuss the longer-term disequilibrium between supply of and demand for agricultural products. Comparing the movements in the agricultural price level and the general price level, he pointed out that these were always parallel. If, however, prices are allowed to move freely, agricultural prices tend to fluctuate more so that, on the ascent, the terms of trade improve in the farmer's favour and, on the descent, they worsen to his disadvantage. Within the various countries, longer rises in prices, however, are usually prevented for social reasons by the introduction of price ceilings. Referring to the 'long waves' of price movements by Kondratieff, he pointed out that the study was based on the price movements in England. The price movements in U.S.A. did not always show a clear result. Secondly, the tendency shown by Kondratieff does not apply to prices of animal products.

Posing the question : was the depression farm-led and farm-fed, he said that it was the contraction in the total demand in the course of depression which had the most unfavourable influence on the prices of income in agriculture.

Though agricultural prices usually move in the same way as the general price level but more sharply, they sometimes show independent movements. The recent decline in prices of agricultural commodities since 1948 is an illustration. It shows that in agriculture a period of price depressing surpluses can last for a considerable time even when the general economic situation is booming and the purchasing power of the consumers is increasing.

Regarding terms of trade between agriculture and manufacturing industry, he feels that a search for a secular trend in the terms leads to no clear results. The causes for larger fluctuations in agricultural prices according to him are both monetary and non-monetary operating singly or jointly. The spread in price movement depends on the extent and duration of the deviation shown by the other similar but weaker price movements.

Apart from the monetary influences, the reasons for larger movements in agricultural price level and in terms of trade are shifts in demand and supply of the commodity. The factors causing shift in demand in the long run are growth in population, real income per head of population and the elasticity of the quantitative demand in relation to income. The conventional means to increase production on the other hand are: (1) the expansion of area under cultivation, (2) increase

in yield per unit of area, (3) the raising of animal production by increasing the number of livestock, by raising productivity per head and by improving the conversion of fodder, and (4) decreasing losses in harvesting and utilisation of production. It may, however, be noted that the heavy price fluctuations cannot be wholly attributed to events either on the side of demand or the supply side alone. Changes in both sides must be taken into consideration.

It is very difficult to predict the outlook for farm prices. But the future food situation in many parts of Asia seems to be largely unsettled as far as the increase in population is concerned. This increasing population which accounts for half the world's population will not only demand more food but the continuing industrialisation will strengthen the desire for an improved diet as real income per head increases. At present the inadequate food supply in many parts of Asia does not prevent surpluses in other parts of the world from depressing prices on the world market.

Mr. J. R. Bellerby of U.K. generally agreed with the views expressed by Prof. Hanau and after giving the available information bearing on the problems considered as unresolved, posed a number of questions with a view to getting further clarification. Regarding the finding of Prof. Hanau that the search for a long-term trend in terms of trade between agriculture and industry led to no clear-cut results, he felt that the ratio of indices of prices received and prices paid by the farmers were more suited for the purpose and this relative price type index could be further developed to show the effects of changes in the terms of trade more fully. The approximate index of this kind constructed by him for nine countries, among other things, showed that the terms of trade moved unfavourably to agriculture during a period of rapidly falling prices whereas there was often, though not always, a reversal of this effect in a period of rising prices. Since 1938, the indices in general indicated a rise, the largest rise being in those countries which exported animal products or were linked with the British market. During the period 1954 to 1956, the trend was generally steady. The indices had reached a high plateau in a number of countries between 1942 and 1950. At present, the indices were appreciably below the plateau which had caused grave anxiety. He, therefore, requested Prof. Hanau to give his judgement on whether the ratio would fall further and reach pre-war levels.

He referred to the statement made by Prof. Hanau that in family farming much of the cost was for maintaining the farm family which could even be pressed down to the level of subsistence and asked him to state whether he observed any likelihood of a change in this condition or its consequences in the world generally.

Further, Mr. Bellerby pointed out that farmers were leaving agriculture at the rate of 3 per cent per annum and death or retirement accounted for an equal number. There would be very soon a shortage of man-power if others did not fill in the gap. The difficulty was at the point of entry which could be influenced either by increasing the size of holdings which would result in improving the farm income in long-run, or by applying tests of efficiency to those who wished to enter. He, therefore, requested Prof. Hanau to throw some light on the progress likely to be made either in adjusting the size of farms or developing husbandry as a profession, with specialised training or apprenticeship as the essential qualification for entry.

Lack of Institutional Flexibility In Agriculture

Prof. Rudolf Bicanic, University of Zagreb, Yugoslavia, in his paper dealt with persistence of non-financial elements, both in commercial and subsistence farming, rigidity in the patterns of settlement and in the institutional structure. Referring to certain theoretical concepts by way of introductory remarks, he said that even the definition of agriculture has an institutional character. Thus many auxiliary activities which in a more developed economy belong to another group of activities, in a lesser developed society, they are still considered as agricultural activities. Agricultural institutions are influenced, and ultimately even fundamentally changed by many non-financial elements. Population pressure is one of the non-profit motivated forces which may change the character of agricultural institutions. The number of family members remaining on land or leaving it is flexible and depends on both financial and non-financial considerations. The agricultural population shows a tendency to decline with economic development, as farm people move to other occupations. In this movement most inflexible are the male and the female owner operators and, therefore, the owner-operator farms show a tendency to increase. Hired labour is next in inflexibility; but the male labour is more mobile than female. Unpaid family labour is the least inflexible and moves away from agriculture fastest. Thus it is observed that as the agricultural population decreases with the spread of economic development there is a tendency towards deproletarianisation of agriculture, fast reducing the number of hired labour.

Referring to the fundamental inflexibility causing changes in the number of farm holdings, he stated that entry or exit depend to a very great extent on socio-economic structure and its development. In a tribal economy the entry and exit are regulated by tribal customs. Under the joint family system, the family holding remains more or less perpetual. In the capitalist economies, new entry can be made by purchase of farm. In some of the countries in Europe, Asia and Latin America, because of land reforms there was a large number of new entrants on small production units. In the collectivisation process in the Soviet Union a large number of independent units went out of existence. In countries like Poland and Yugoslavia this process was reversed and a large increase in the number of small family farms took place. In some countries particularly in France and Germany there is a large exodus from agriculture, which in the near future is bound to result in great institutional changes.

Agricultural inflexibility is often linked to the preservation of the 'peasant way of life'. In this connection he referred mainly to two institutional rigidities. First, the 'prejudice of growing one's own food' and second, the 'desire to have one's own implements and machines.' Growing one's own food is one of the fundamental principles of subsistence agriculture. In spite of evident loss in growing food crops instead of cash crops, the peasant continues to grow the former because of his prejudice based on the family institution as a consumption unit as close as possible. In many European countries since the beginning of the present century the peasants have been moving away from this type of agriculture. But in some other countries, this tendency is manifesting itself in the form of national self-sufficiency in food for various reasons.

Secondly, the peasant families desire to own their own implements and machines even when their capacity oversteps the organisational framework of the peasant family holding. This leads to the uneconomic use of machines and implements which means an excessive investment in agriculture which is otherwise poor in capital. This over-investment then leads to underemployment of capital goods at the same time that there is a great shortage of capital in other machines or other means of production.

Discussing the institutional influence on the agricultural terms of trade he stated that it is too often assumed that agricultural producers face a market of perfect competition. But it is observed that in a capitalist developed country the existence of agricultural protective organisations provide the best proof of the existence of monopsonistic pressures though they are partly neutralised or checked. The purchase of agricultural products for the "ever normal granary", strategic stock-piles, foreign aid, etc, provides some institutional forms to relieve monopsonistic pressures by increasing demand for farm products. In the underdeveloped countries, the traders and other intermediaries dominate the marketing organization and thus reap benefits by purchasing agricultural products at low prices immediately after harvest and selling them later at high prices. In the Soviet Union the system of fixed prices and delivery quotas led to grave consequences on agricultural production on the collective farms. The small plots of land given to the members of collectives for personal cultivation, however, showed a rapid expansion in production.

Prof. J. O. Jones of U.K. referring to the insistence of farmers on production of food crops, referred to in Prof. Bicanic's paper, stated that this may well be due to greater value placed by the farmer on security or self-sufficiency. Secondly, any attempt at diversification of production from food to non-food crop presupposes an organized market which in its turn presupposes an organized transport, storage and distribution system. Regarding the point of over-investment in farm implements, he stated that some of the machines used on the farm are used partly as a factor of production and partly as a means of satisfying purely personal and domestic needs. Some of the machines, though may not be economically justifiable, perform the very desirable function of reducing drudgery. Further, the investment in machinery will serve the purpose of insurance in a bad season. Thus from the farmer's point of view, there are three entirely rational elements involved in such investment, viz., production, insurance and consumption; the first being more important on the large commercial farms and the latter having very considerable effect on the small family farm. In any realistic analysis, a producer must take all three elements into account.

Shri M. Shafi Niaz of Pakistan in his speech referred to the statement made by Prof. Bicanic that the tendency of mobility of farm population in the developed countries being repeated in the under-developed countries and stated that some of the interim developments may be omitted or blurred and the experience of more and more advanced countries could prove to be misleading. The recent growth of large cities in Asia has occurred at rates faster than the increase in non-agricultural employment opportunities. Food and housing subsidies and other welfare programmes, which were unknown in the corresponding era of development of most advanced countries, have contributed substantially to this flow of population from agriculture.

Regarding the conservatism of the peasant, he stated that in many countries farmers are in fact highly responsive to more promising economic opportunities, whether these appear in the form of more rewarding farm enterprises or a more remunerative occupation. Not even the desire to safeguard the family food supply will deter a farmer from shifting to more profitable crops or livestock industry.

Education, Research and Extension in Agricultural Economics in Asia and Latin America Today

Dr. A. T. Mosher, the Council of Economic and Cultural Affairs, New York (U.S.A.) read a paper on "*Education, Research, and Extension in Agricultural Economics in Asia and Latin America today.*" There are four characteristics that need to be embodied in under-graduate education in agricultural economics in Asia and Latin America today. The curricula should enable each student to recognise the need for choice making, economising and for resource allocation, combination and management ; to think about the immediate problems of his own country's agriculture ; to have considerable practice in collecting, presenting and analysing economic data and to take the challenge with the unknown. Accordingly, under-graduate courses should include (a) a study of the agriculture of the student's own country, (b) a preliminary exploration of problems in farm management, marketing, land economics, prices and agricultural policy, (c) a study of agricultural development and (d) elementary practice in the basic operations of economic analysis. The first year should be devoted to a general study of the agriculture of the country ; in the second year students should be introduced to the specialised fields of agricultural economics ; and the third year course should be centred on the problem of agricultural development. This programme requires new materials and uniquely qualified professors and cannot for that reason become the immediate pattern in every college. But each country has a few such professors who should be able to tackle this job for the country as a whole, if they are set free from their other responsibilities for a period of time.

As regards research there are two main problems. The demand of national government and planning bureaus for trained economists is considerably increasing, while the supply of such men is very limited. Still, there is so little realisation of the importance of research that very inadequate provision is made for it. It is necessary that (a) sufficient provision is made in each country for at least a few basic studies to be made, (b) projects which are obviously valuable to farmers and governments are chosen, (c) attempts are made to secure conditions for stimulating productive research and (d) every trained man has a fair chance to demonstrate what he can do. It may be advantageous for each country to study the research programme of the Office of Special Studies of the Mexican Ministry of Agriculture.

In regard to extension education there are two distinct situations. While much emphasis is laid on agricultural extension education in Latin America, most Asiatic countries have multi-subject matter extension. Agricultural economists who do not play a significant role so far in any of these extension programmes of Asia, or Latin America should be involved in them by undertaking many more micro-studies in farm management, marketing, etc., by establishing close contacts with the extension and community development programmes which are in opera-

tion and by participating into the pre-service and in-service training of extension agents and administrators.

A close functional relationship needs to be established and maintained among education, research and extension, which is at present lacking in Latin America and Asia. This can be done by adding a training component to research projects, by making project grants for research to agricultural colleges, by giving regional extension responsibility to colleges of agriculture and by strengthening professional societies of agricultural economists. It is very important that the men in each field should constantly keep in mind the inter-relationships between education, research and extension so as to take the fullest advantage of the opportunities for co-operation and mutual service.

Prof. D. G. Karve of India referring to the relationship between agricultural economics and extension, pointed out that the alleged provincialism of agricultural economics in North America and in Europe, must not be taken too literally. The progress made in agricultural economics in Western countries generally in the spheres of agricultural development and of marketing has a bearing on all agriculture. Especially where technological and scientific processes are changing and commercial agriculture is replacing subsistence farming, the relevance of Western experience is all the greater.

Further, he stated that the gulf between technicians and economists or even more broadly between physical scientists and social scientists interested in agriculture, has never yet been bridged, at least in the under-developed economies. He expressed the view that just as every student of agriculture should have a course in economics, every professed agricultural economist should have a suitably structured course in agriculture.

Referring to agricultural extension education, Prof. Karve remarked that unless agricultural extension becomes more economics-minded, and *vice versa*, the full benefits of agriculture or of economics will not be secured. As regards the integration of education, research and extension he said that it is true that in schemes of community development having much wider scope than agricultural extension the suitability of agricultural training centres as basis of extension activity would be limited. But it is emphasised that on the material side agricultural extension is the most important part of community development, and unless those whose normal function it is to teach and to do research are also made primarily responsible for chalking out overall as well as particular programmes of agricultural extension, the quality of extension will suffer, as it has in fact suffered, for instance, in India.

Using Economic Research in Policy Making

Dr. T. H. Strong, Bureau of Agricultural Economics, Canberra (Australia), read a paper on '*Using Economic Research in Policy Making.*' The terms of trade of agricultural commodities have deteriorated substantially in the past year or two and the question arises—Is there a specific group of people to blame for this situation, if so who are they? The period since World War II has witnessed three phases of agricultural commodity outlook: the era of increased production,

the era of retreat and the era of defeat. In the light of these relatively short-term changes, the problem of long-term planning is extremely difficult. Considerable research is already done concerning basic factors affecting demand, with the help of which some useful projections can be drawn for planning purposes, although assumptions have to be made in respect of rates of change in real incomes and the redistribution of income. But these are minor matters when compared to the deficiency in our understanding of the factors affecting the supply of farm products.

In the latter part of the forties there was fairly general emphasis on increasing food production in all countries. The problems of maldistribution of purchasing power between countries were recognised but it was assumed that they could be solved, by the formation of Commodity Clearing Houses, if necessary. As surpluses in one or two countries became chronic, devices such as P.L. 480 had however to be resorted to. It appears that partial analysis has been largely responsible for faults in the policies leading upto the present sorry conditions of the terms of trade and the world's commodity markets. There have been and still are conflicts in the policies adopted by different countries and one might well ask whether our universal aims still stand.

Government policy in Australia since the end of World War II has been consistent in respect of two major objectives, full employment and economic development with a rapid absorption of immigrants. Advising economists have not always agreed on the means of achieving policy aims. It is difficult to see how the economic advisers during the early post-war years thought that rapid industrialization of Australia would be financed without special provision for the expansion of agriculture. The defect in this line of thinking was brought out in the balance of payments crisis of 1952, which led to the adoption of a positive policy of agricultural expansion. Agricultural economics is a comparatively recent development in Australia and the resources of the Bureau of Agricultural Economics (1946) are heavily committed to short-term enquiries having immediate policy implications ; but it is not correct to say that the Bureau has transcended its role as an independent fact-finding institution and has become a policy-making body. The head of a government advisory service or the public administrator cannot obviously stand aloof by adopting a dispassionate attitude. The agricultural economist must pursue a vigorous educational and informational programme among the people and the politicians so as to move political expediency and economic soundness closer together and research findings must be presented to administrators and politicians in a lucid, intelligible form. "The primary business of the economist is to understand the world, not to set it right," as stated by Sir Dennis Robertson, cannot be accepted.

Marketing, Communications and Transport

Prof. W. S. Anderson, University of British Columbia, Canada, in his paper discussed with the problems of marketing, communications and transport. Marketing is as important as the expansion of physical food production in deficit areas. The 9th F.A.O. Conference has, therefore, urged member-governments to make adequate provision for marketing work in their development programmes. A good marketing system has two objectives :—(1) to provide

efficiently the form, place and time utilities and (2) to provide an effective price-making machinery. Products to be marketed should be clearly identified in different grades so that buyers and sellers know exactly what is being traded and quality differences are reflected in prices. Grading is an important but difficult problem especially in international trade. An international authority defining grades would therefore be a valuable aid. Packages and labels can be, and are, also used for identification of products under some conditions. A market institution should provide accurate price differentials based on location. It should also provide efficient transportation, price reporting and communication services. The next problem is how to cope with the uncertainty associated with future events, as many commodities are produced seasonally and are marketed over an extended period. The private trade has invented the futures market. This, however, does not help the primary producers who are in fact often hostile to futures trading as they feel that speculation enhances price differences rather than reducing them. The alternative is for the State to undertake a forward price or support price programme. In any case adequate storage must be included among the key marketing services and banks must supply the necessary credit.

Marketing should also provide a satisfactory solution to the problems of price and production cycles in agriculture. One way to meet the problem is by a government programme of support or forward prices and the other is the vertical integration of production and marketing firms. There is a general feeling among farmers and consumers that they are affected by free competition while middlemen benefit by imperfect competition and it is necessary that the marketing machinery should guard against the distortion of terms of trade. This can be done by extending the scope of legislation in restraint of trade and secondly, by equalizing the bargaining power on both sides of the market. A voluntary solution to the problem is by way of marketing co-operatives. A special word is necessary about retailing. The "super market style of distribution" has led to considerable savings in U.S.A. and Canada. Retail trade must adjust its service to each class of customers. The streamlined retailing is a good example. But there is also the problem of underemployment which has to be tackled somewhat gingerly.

Maximising value added in relation to resources used is the proper test of good marketing. There are, however, other values and attitudes. Some of these are : exchange of goods is not a productive process ; price-making is highly unilateral and that marketing should allocate a fair share of the national income to different groups. These ideas make marketing policy a more complex process. The first idea has no substance. The second can be met by positive policies which reduce the possibility of unilateral price-making. The third is more difficult to take into account, for the efficiency of the marketing system will go down to the extent it is expected to provide "fair" income distribution.

Prof. M. L. Dantwala of India, commenting on Prof. Anderson's paper said that the point relating to the unequal bargaining power of those who provide the marketing services, *i.e.*, the middlemen and traders on the one hand, and the producers and consumers on the other, has much significance in many Asian countries. Its importance is not diminished, even though the problem of low net income is only partly due to degree of bargaining power.

Referring to vertical integration as one of the devices for reducing price uncertainties, he stated that instead of integration between the producing and the

marketing firms as envisaged by Prof. Anderson, what happens is a well understood liaison, if not integration, of manufacturing and marketing firms. In that case, the consequence of vertical integration would be entirely different.

Referring to pricing under imperfect competition he remarked that as in farming, so in marketing there are both big and small operations. The small trader is often ineffective in the context of aggregative buying by the big, but he may not be so ineffective in a situation of less than competitive prices created by the "non-aggressive" attitude amongst the big operators. Referring to the institutional remedies against the various practices associated with non-price competition, it is emphasised that in the absence of comparable bargaining power, many of the improved devices and regulations may not yield the desired results for the protection of the interests of the producer and consumer. The ultimate guarantee of good marketing lies in the equality of bargaining power of the buyer and the seller.

Agricultural Support Measures

Mr. J. H. Kirk, Ministry of Agriculture, Fisheries and Food, United Kingdom, in his paper dealt with the agricultural support measures. Agricultural support is a system of special assistance for farmers to raise their incomes, and probably farm output, by means of tariffs, import quotas or subsidies. While tariffs are most ubiquitous, import quotas mainly operate as protective measures. Public and private monopolies improve producers' returns by limiting or diverting supplies. Direct subsidies to farmers are nowadays a major form of support, though they are quite expensive financially as well as administratively. Supports should also include tax reliefs and subsidies not wholly intended for the benefit of agriculture as well as major works of irrigation, flood control, transport development and housing construction.

In under-developed countries supports are given mainly to raise production and productivity, to lift farmer's incomes, to increase food consumption and national income. The cost of supports may partly be met by loans/gifts from abroad, but part must also fall on the local consumer and tax-payer. Support measures used in Europe, U.S.A. and Canada have other objectives also, such as reducing the evil effects of over-production and sustaining farmer's purchasing power during depressions. In Europe, there have been mixed motives—sustaining farmers against foreign competition, securing greater equality of incomes and increasing home production to reduce/solve balance of payments difficulties. Exporting countries which depend on only one or two products, such as Denmark, New Zealand and Ceylon must find it difficult to operate a system of supports, as the cost cannot be easily passed on to consumers abroad, nor borne by home consumers.

In overpopulated/under-developed countries, the main motive is to improve food consumption and the benefit to producers is relatively subsidiary. But most of the cost is thrown on the consumer in Europe and U.S.A. and, rather uniquely, on the tax-payer in U. K. However, if a number of countries compete on the world market, at least part of the benefit must go to consumers. When tariffs are used for support, the consumers' indirect benefit may not be apparent; even then,

as world agricultural output rises, consumers somewhere will benefit—probably at the expense of tax-payers. In many of the poorer countries higher food consumption is the overriding need and the process as a whole may be highly beneficial. Farmers may get substantial benefits, though over long periods, supports must become part of the normal supply price of farm produce. There are also social arguments for supports, which may have to be accepted as political necessities.

Support may perpetuate an unsatisfactory structure of agriculture, as in Europe. It may be noted that but for the severe foreign competition after 1850, U.K. and Denmark would not have passed through a stage of agricultural progress that they did. Under certain conditions, however, support can be consistent with and promote efficiency, as in American farming. Even in U.K. the additional money put into farmers' hands has led to increased investment and output. Support can also be used for encouraging particular farm practices, provided the means of support are well selected. For the under-developed countries, priority should be given to massive investment in physical works and general as well as agricultural education, while in the rest of the world a combination of advisory and technical services with a judicious selection of subsidies should work well, the support being distributed, if necessary, in proportion to the farmer's needs or output.

Prof. C. von Dietze of Germany in his speech referring to Mr. Kirk's paper, raised three points : (1) the need to find out countries with a more or less open system of economics, (2) the need for special measures to improve the agrarian structure and (3) the value of research work for preparing such measures. He stated that the approach to a clear understanding of the problem is barred by trying to group the measures systematically merely on the basis of formal similarities. Referring to the measures for improving the agrarian structure, he said that these measures are so numerous and their forms are such that in many countries the whole economic order seems to be changed, or at least, restricted. As a rule, generalised measures are not the proper way to improve the agrarian structure. Optimal results can only be expected if the measures are prepared on the basis of detailed knowledge of the peculiar local and regional conditions.

Dr. S. R. Sen of India in his speech referring to Mr. Kirk's paper, said that in the context of under-developed economies, the appropriateness or otherwise of various agricultural support measures has to be considered in a somewhat different light. In these countries agricultural support measures are necessary not merely for safeguarding the interest of the farmers but also to stimulate agricultural production in the desired direction. While agreeing with the view of Mr. Kirk that for under-developed countries both massive investment in physical works and agricultural education are essential, Dr. Sen pointed out that if reliance is kept only on these two, the progress may be too small or too slow. There is a limit to the capacity upto which the State can undertake massive investment in physical works in the field of agriculture and this limitation is greater, the less developed a country is. He emphasised that the bulk of investment in physical works in agriculture has to be undertaken in small bits by the farmers themselves. It is pointed out that just as it was in the U.S.A. before the middle thirties, in under-developed countries also, even if the State provides certain massive investment and facilities for education, the **take off**, as it were, in the field of agriculture

does not come about automatically until a situation of economic stability is ensured and possibility of recession is reduced to the minimum. Therefore, a policy of price stabilisation is essential for any real and sustained progress in the field of agriculture in under-developed countries. Stabilisation of agricultural prices has to be taken for creating the climate in which larger investments by individual farmers become possible.

Finance for Development

Dr. E. D. Vries, Institute of Social Studies, Hague, Netherlands, read a paper on finance for development. He stated that finance for development ought to be considered in a wide framework, as agricultural investment cannot be isolated from other types of investment. In the earlier stages of economic development, little financing for development is necessary. It is only after the commercialization of agriculture in the 19th century that new trends in financing development appeared. Although the exact relation between the structure of agriculture and the pattern of financing may be doubted, institutionalized private financing tends to be highly developed in commercialized farming, while non-institutionalized financing predominates in subsistence farming in underdeveloped areas, such as India and Latin America. Agriculture is, however, getting commercialized in underdeveloped countries also. Can one then expect an automatic development of institutional credit in them? This seems to be doubtful.

There are four general approaches to the problem : firstly, the provision of transportation and marketing facilities should lead to an increased productivity in areas with surplus land and labour. In fact, the opening of the world since the first World War has given rise to a danger of overproduction. Secondly, the peasant has to be liberated from the landlord/moneylender by increasing the supply of governmental/co-operative credit. Land reform also increases the need for finance. But credit co-operatives flourish only under favourable conditions and this recipe has a rather limited effect. Thirdly, government and semi-government organizations can do a lot, especially with the assistance of international agencies for raising productivity through land improvement, including irrigation, reclamation etc. This requires sufficient finance for putting the new land under proper use. Fourthly, farmers themselves should learn how to use the new opportunities through community development and similar devices. These four approaches need large investments, the capital-output ratio for land improvement varying between 2.8-3.5 to 5.5-7.0. But society as a whole has such a great interest in agriculture and food production that subsidies seem justified.

Agriculture almost everywhere must be assisted by governments and international agencies in financing the change. The experience of developed countries should be useful here. All sources of finance have alternatively and concurrently to be used in a process of trial and error, some of them being more necessary than others. Most authors point to the fact that short term or crop loans are an overwhelming part of agricultural credit in low-producing countries. In India, for instance, in 1955-56 the co-operative banks drew over 250 million rupees at concessional rates from the Reserve Bank for short-term loans. The Agricultural Credit and Co-operative Financing Administration of Philippines made over 4

million pesos in loans in its first two years upto June 30, 1954. In U.S.A. however, the Farmers' Home Administration and its predecessors had upto June 30, 1953 made loans of \$600 million for farm ownership, etc., as against \$614 million for production and subsistence.

Even without a comprehensive set of data, it can be concluded that finance for agricultural development is inadequate, unbalanced, insufficiently co-ordinated or imperfectly timed. Further studies of the pattern of investment and finance in relation to the structure of agriculture are urgently needed in order to help countries develop more efficient patterns.

Commenting on Prof. Vries' Paper, **Dr. E. D. Brandao** of Brazil said that he is largely in agreement with the fundamental ideas set out in the paper. But he remarked that it is somewhat disappointing to know that even in more developed countries "no single pattern of Government assistance to financing agricultural development has evolved." With regard to the general avenues of approach to the problems of directly or indirectly stimulating and financing agricultural development, he particularly referred to the method of stimulating people to organise their self-government, *i.e.*, community development and similar devices and stated that Dr. Vries should have developed it further because this feature seems to be one of the possible answers for capital formation in agriculture.

Rural Population Movements in relation to Economic Development

Prof. Keith O. Campbell, University of Sydney, Australia, in his paper discussed with the problems of rural population movements in relation to economic development. Economic development draws rural population to urban areas. The rate of the migration increases with the rate of development until urbanization reaches a point when such transfers become small. There is however a significant movement in the reverse direction also. Moreover, there is also a movement of agriculturists to new lands. These two movements are parallel to the 19th century international migrations from Europe to America, Oceania and Africa.

Population growth, the low elasticity of demand for food and technological progress in agriculture cause rural-urban migrations. But adjustments have rarely proceeded fast enough and wide disparities in rural and urban incomes have tended to persist even in the long run, though they tend to be narrowed in the process of development. Even with perfect mobility, exact equality of incomes would not be expected. Mr. Bellerby has found that in 1938 the average incentive income in agriculture was 60 per cent of urban income and that rarely did the ratio exceed 75 per cent. Population readjustments do not occur uniformly over a country. In fact there is evidence that interregional disparities increase as economic development proceeds. The problem of depressed rural incomes resulting from inadequate redistribution of rural population is important even in the developed countries. The overall pattern of population growth of a country has an important effect on the rate of migration out of agriculture, which in its turn affects population growth. With the exceptions of India and Egypt, it appears that the forces operating to reduce death and fertility rates work more slowly in a rural than in an urban environment. The fertility differential usually worsens the relative position of farmers and intensifies the need to move them out.

So long as agriculture acts as a population reservoir for other sectors, the farming community has to bear an added burden through the immobilization and eventual loss of the capital invested in the upbringing of children.

Apart from secular economic forces, short-term economic fluctuations, wars or threats of wars and shifts in world trade, as also governmental intervention affect the rate of migration. As the 'pull' of alternative occupations operates more powerfully than the 'push' of agriculture, a policy of reducing the number of farmers as a means of improving the relative incomes of those that remain is destined to be frustrated, unless industrial and other opportunities are created simultaneously. Rural population changes have been achieved more easily in some countries than in others. A proper balance has to be achieved between the rate of population growth and the rate of industrial progress. The transfer of large numbers of mature workers and their families gives rise to difficult social and political problems, especially if the rate of economic growth is very rapid.

Although our knowledge of the process of economic development in the world perspective is scanty, it appears that the present under-developed countries are embarking on industrialization at a much earlier stage. Moreover the initial size of their population is infinitely greater. The primary emphasis in these countries should not be on the movement of rural labour or on the acquisition of industrial capital but on raising the levels of the skills, on introducing new technology and on raising productivity everywhere. Eventually, movement of population out of agriculture will become a necessary condition of continuing economic growth. But even in the long run, the underdeveloped countries of today may move towards an inter-sectoral equilibrium, in which agriculture occupies a relatively more significant place than in the most advanced countries today.

Prof. E. Nash of Aberystevyth made some comments on Prof. Campbell's paper. He challenged Prof. Campbell's attempt to relate the process of reduction in the proportion of working population to particular stages of economic development and viewed with suspicion any suggestion that there is a particular proportion which represents a final or equilibrium figure that would be established when a country has reached full economic security. Wage paid labour is much more mobile than farm labour or the farm family labour and it is susceptible to the influence of the push forces, the importance of which, he said, Prof. Campbell seems to be rather doubtful.

Referring to the relevance of the experience of relatively advanced countries to the problems of the underdeveloped countries, seeking to initiate the process of development, he stated that the law of demand for food is by itself surely of sufficient universality to make it practically certain that a country which does not reduce the proportion of its labour force in agriculture below the level usual in underdeveloped countries is also a country whose real income per head will remain lower.

The Interdependent Development of Agriculture and other Industries

Dr. U. A. Aziz, University of Malaya, Singapore, in his paper on '*The Interdependent Development of Agriculture and other Industries*' said that underdeveloped countries which face the problem of limited resources can plan to achieve vast changes from a correct disposal of their resources, with proper regard for the

principle of cumulative causation. There are four main possibilities — (i) to develop agriculture at the expense of other industries (ii) to develop other industries at the expense of agriculture (iii) to move in a series of zig-zags developing first one and then the other and (iv) to develop agriculture and other industries simultaneously. The second and fourth possibilities would appear unrealistic. Which of these possibilities is chosen will depend on the arrangement of resources in the country and the type of the economic organization it has.

Western imperialism led to the decline of industries, the excessive dependence on land and the disruption of the village in the Eastern countries. The main problem in backward countries (of Asia) is how to eliminate poverty. The first cause of poverty is low agricultural productivity. This has to be raised. Many governments are spreading their resources on too wide a front and fail to achieve a significant impact anywhere. Industrial development needs foreign aid, technical as well as financial, which is being secured by many countries. The need for economies of scale as well as for integrating the various activities is very great, the D.V.C. (India) and T.V.A. (U.S.A.) being the best examples. Secondly, farmers are exploited in every possible way by landlords, money-lenders and middlemen. This must be put an end to. Thirdly, government budgets in backward countries are largely spent on urban development. Farmers who account for the biggest share of the national output and taxation should not be neglected any longer. The location of industrial sites should be integrated with agricultural development plans and the training system be adopted to the special needs of backward countries.

Many economists have a number of beliefs regarding labour in backward countries, some of which are myths. The elasticity of demand for income is supposed to be negative, which is not wholly true. Secondly, labour is supposed to be often under-employed. This under-employment may be seasonal, chronic or non-existent. The remedy has to differ according to the situation. Thirdly, there is some disguised unemployment and if that is to be reduced by developing industries, it must be demonstrated that such types of unemployed will be attracted. Racial specialization of labour often complicates matters. A fundamental prerequisite is better and more useful education especially through the medium of indigenous languages. In regard to land, if there is a shortage in relation to farm population, it is essential to develop suitable industries; but if there are large cultivable areas, land development may be the best strategy. Agrarian reform, improved credit facilities and development of co-operative farming are the three essentials of economic progress, which must all be properly co-ordinated. At the same time capital should be prevented from being used as a tool for exploiting farmers and rural workers—by creating new institutions like co-operatives and marketing boards and state undertakings. Mechanisation of farming can raise productivity very rapidly but it has numerous limitations. Mechanisation should not, therefore, be carried out until industries can provide the requisite type of equipment. While agricultural development is largely a matter for national action, negative or passive international action may also be helpful. There is also considerable scope for international action in the supply of the requisites for the development of other industries through loans, grants and other facilities.

Miss E. H. Whetham of U.K. commenting on Dr. Aziz's paper, stated that his approach to the problems of economic development in a country mainly agricultural

closely resembled that of the earlier classical economists in Britain. While the early economists were well aware of the factor of increase in population, Dr. Aziz hardly mentioned this factor. Referring to agricultural poverty as the basic problem of the backward countries, she did not support the view that Western capitalism had intensified poverty. She suggested that the greater inequality of wealth which had occurred through the increasing power of land-and-capital-owners was the result, not of Western capitalism but of Western medicine and hygiene which had permitted an increase in population to occur faster than technical progress or capital accumulation could provide food or capital or jobs. This increase in population made the task of agricultural development urgent.

While generally agreeing with the view that shortage of capital and credit is the key factor in the task of rapid agricultural development, she did not support the statement that the landlord, moneylenders and monopolistic merchants who commanded the supply of these scarce factors cannot be allowed to lead agricultural development, and yet are unlikely to invest in industry. She stated that if the supply of scarce factors commanded by these groups is rejected then the process of agricultural development will be unnecessarily long and slow.

Dr. J. Marull of Costa Rica speaking of some of the features of the Latin American countries said that income per person employed in agriculture is roughly one-third of that for individuals engaged in non-agricultural activities. Therefore, it becomes urgent to increase output per worker in agriculture. In order to attain such higher output per worker, both a reduction in agricultural labour force and achievement of higher yields in plants and in animals are required. A transfer of technology would need larger investments in agriculture as well as industrial supplies such as fertilisers, pesticides, and equipment. Sound policies are needed to keep adequate balance in investment in agriculture and industry.

International Organizations

"International Organizations" was another aspect taken for discussion. **Dr. D. Paarlberg** (U.S.A.), **Prof. W. E. Haviland** (Canada) and **Dr. A. G. Baptist** (Belgium) read papers.

Dr. Don Paarlberg of United States Department of Agriculture while discussing the reasons for the development of international organisations, stated that efforts at international co-operation in the field of food and agriculture have been of recent origin and have various purposes from facilitating exchange of information and ideas and providing technical assistance and rendering aid to backward countries to stabilising currencies and markets. There have been far-reaching developments in agriculture which have led to these efforts at international co-operation and have brought about an expansion in the number and vigour of international agencies in agriculture. These features are generation of powerful motives for the transfer of technical knowledge from the more advanced to the less advanced nations, coupled with a tremendous increase in population numbers, a rapid but uneven emergence from a subsistence to a commercial type of agriculture with increased dependence on and vulnerability to the market mechanism, and the shrinkage of distance and improved means of communication, which have thrust aside the veil of ignorance regarding conditions in other lands.

The technical advance in agriculture has been made possible due to scientific revolution and various motives commercial as well as humanitarian have led to spreading of this knowledge over a wider field. The less advanced nations also realised that hunger could be overcome and expanding population can be adequately fed. This desire to share the problems and solutions to mutual advantage facilitated the function of International Organisations and spreading of technical knowledge. With the change from subsistence agriculture to commercialised agriculture over large areas of the world, the markets and the price mechanism became important and international trade in agricultural commodities also accelerated the promotion of international agencies in agriculture. The shrinkage of distances and improved means of communications made the world smaller and easily accessible, with the result that knowledge of the conditions of other areas could not be kept away from peoples and a general awakening for better living paved the way for International co-operation.

The main objectives of international agricultural agencies are to improve agriculture's terms of trade, to raise the whole level of living and to help to bring about world peace. The work of international agencies like Food and Agriculture Organisation, Point Four, the World Bank, the Colombo Plan, General Agriculture on Trade and Tariffs and other programmes of various international agencies have to be reviewed in the light of these objectives. There are also non-governmental agencies like the International Federation of Agricultural Producers, Ford Foundation and Rockefeller Foundation and other charitable agencies which are international in outlook and can claim considerable achievements. These non-governmental organisations must reinforce the efforts of national governments. Their services should have wider scope and should reach the people through local organisations or institutions of government, the criteria being efficiency and development of broadly shared responsibility.

These international organisations differ in sponsorship, motives and spheres of work. Some are governmental, while others are non-governmental; some are bilateral, others are multilateral; some relate either to commodities or to production or to markets. Some have political objectives while others are related to technical matters. But the activities of all these organisations are overlapping and they have an ideological basis with a genuine desire to be helpful.

Referring to the International Conference of Agricultural Economists, he said that it is primarily a non-governmental professional organisation, broader in scope and technical in character. It has helped in the solution of many controversial matters and have played an important role from the point of view of exchange of ideas and experiences. This has led to better international relationships and better economic understanding resulting in mutually advantageous exchange of goods leading to better terms of trade for the farm people.

Prof. William E. Haviland, of the McGill University, Canada, in his paper on *'International Commodity Agreements: Performance and Prospects'*, appraised the scope for international commodity agreements (ICA), in the background of the Canadian economy. He assessed the performance of the international commodity approach to commodity marketing problems and examined the records of specific commodity agreements. Multilateral commodity agreements can be

traced back to the inter-world war era. They are associations of more than two countries—importing as well as exporting—for the purpose of organising the marketing of some product for their mutual benefit. But their working has been characterised by complexity because of diverse commodity characteristics and diverse national needs, attitudes and policies, both economic and political. This inherent complexity is further aggravated by domestic conflicts of interest and inconsistent actions, by wishful thinking (coherently articulated), by vague and ambitious terminology and by outright propaganda.

The aim of ICA is generally to stabilise prices at “fair levels” and guarantee “fair shares” in the market to the exporting and importing nations, the assumption being that the demand and supply of these commodities tend to be inelastic. The products involved therein are generally raw materials, particularly foodstuffs the trading of which is characterised by severe fluctuations in volume and value. Expanding markets, promoting efficiency, conserving natural resources, etc., are other motives that inspire these commodity agreements under various conditions. General interest in the subject of ICA has been enhanced now due to various agreements as also due to mounting surpluses of farm products, attention to which has been drawn by the 1957 Purdue Conference of International Federation of Agricultural Producers.

Appraising the performance of important agricultural commodity agreements, he referred to the International Wheat Agreement (IWA). He stated that the IWA was first negotiated in 1933 among 22 exporting and importing countries upon the initiative of the exporters to restrict surplus wheat supplies in conformity with a reduced world demand. Since then, it has been renewed from time to time. Its main objectives were to minimise fluctuations in wheat prices round about a “fair level”, to assure exporters “fair shares” of the market and importers of supplies. The objectives were ambitious and have not been very much realised. All the same, achievement of the IWA in the post-war period has been substantial in relation to demands made upon them by the rapid shift-over from conditions of scarcity to surplus. Referring to the International Sugar Agreement (ISA), he said that the agreement was first signed in 1937. After 1953, sugar surpluses reappeared. Its object was to stabilise sugar prices at a level which would encourage the consumption of sugar and yet maintain living standards in the exporting countries. There have been other ICAs like Consultative Rice Agreement of 1956, Olive Oil Agreement of 1955, etc. Other primary commodities subject to ICA are tin, rubber, tea, wool, beef, whaling, fur seals, lumber, drugs and coffee. All these ICAs could function effectively as a stabilising instrument only in a suitable environment.

In regard to the prospect for ICAs, he said that being commodity arrangements, they are necessarily a piece-meal approach to trading and are subordinate to no overall supervising (not to say controlling) agency which might keep them in harmony with each other. With a view to co-ordinating agricultural ICA and promoting prevention of surpluses, he suggested the setting up of an Agreement on Agricultural Tariffs and Trade.

But the ICAs seem to have been more interested in stabilising fluctuations than in promoting long-run supply—demand adjustments, in preventing fall in

prices than price rises, restricting supply in times of surplus than in expanding consumption by lowering prices. This shows a basic bias of ICAs in favour of the producer-exporter.

ICAs can cope up with mild recessions but not with deep, prolonged depressions. Its immediate future depends mainly on whether we are lucky enough to avoid the depression which has been haunting us. But the long-run future of ICAs cannot be popular with powerful nations because these nations, faced with surpluses, will insist on reserving control over their trade as a tool of diplomacy and an armament of economic warfare using this term in its militant sense. State trading could be compatible with ICAs but the accent is still on power. All the same, with markets weakening, the need for multilateral marketing agreements, flexible and diverse, sometimes on a commodity basis, sometimes temporary and sometimes continuous, is greater than ever before.

Dr. A. G. Baptist, Rijkslandbouwhogeschool, Ghent, Belgium, in his paper on '*Inter-Regional Groupings*' sketched the evolution and inter-dependence of the principal treaties and the success of the various initiatives which led to the organization of the Common Market (whose statute is ready) and to the organization of a Free Trade Area (whose statute is being examined). More than the rest of the world, Europe has witnessed several attempts at inter-regional regroupings for economic purposes since the end of World War II. The oldest attempt at a regional re-grouping is found in the treaty of pre-union by Benelux, signed on 15th October, 1949. The gradual abolition of obstacles to trade between the three countries was one of the objectives. About 91 per cent of the trade between the three countries was free by 1950 and a common list of free exchanges was fixed in March, 1954. All obstacles to the free circulation of goods and property were abolished on 15th May, 1956. The treaty of Economic Union which came into effect on February 3, 1958, contained the fundamental rules for the economic co-operation between the Benelux countries and is to be completed within the next five years.

The Benelux pre-union led to an increase of trade within Benelux and with countries outside it. The experience of Benelux, however, showed that the abolition of customs and adoption of a common external tariff were not enough. The problems of harmonization and specific agricultural problems needed solution.

The Organization of European Economic Co-operation (O.E.E.C.) was set up on April 16, 1948 with similar objectives as the Benelux pre-union. It consisted of 17 members. Apart from the distribution of Marshall Aid, O.E.E.C. has not gone beyond freeing commercial exchanges and creating the European Payments Union. Though the exchanges upto 90 per cent of individual imports have been liberalised, it has not prevented new protective measures in favour of exports.

The treaty of the European Coal and Steel Community (C.E.C.A.) which came into force on July 25, 1952, covers the plans of production, investments, sharing of orders and production, prices and transport tariffs.

The success of the Benelux pre-union, the O.E.E.C. and C.E.C.A. paved the way for the creation of the European Common Market which came into force on

January 1, 1958. The treaty provided for the association of overseas territories controlled by the members in the common market. By means of a common market and progressively bringing together the economic policies of the member-states, it aimed at the promotion of harmonious development of economic activities in the whole community, continued and balanced expansion, increased stability, enhanced standard of life and closer relations between them. Irreversibility, interdiction of discriminatory practices based on nationality, progressiveness and open-door for other European States to join in are the fundamental characteristics of the treaty. A system of minimum prices has been foreseen in the transitory period and would be administered by each country according to criteria unanimously fixed by the Council of Ministers, on the proposal of the Common Market Commission. The treaty provided for a common organization of agricultural markets, co-ordination of agricultural organizations and creation of a European organization of markets. The common organization would regulate prices, subventions, systems of stocking, mechanism for stabilization of external markets within the limits of the fixed aims, avoiding all discrimination. It contemplates the possibility of the creation of orientation and guarantee funds. The progressive nature of the common market envisages the creation of the European Economic Union within 12-15 years. One of the more delicate tasks is the establishment of a common customs tariff. The common market must also promote trade between the member-countries and others.

Regarding the organisation of the Free Trade Area, there has been favourable response to its creation from certain European countries, under the aegis of the O.E.E.C. However, the United Kingdom accepts the formation of a free trade area and its membership, on condition that agricultural products should be excluded from it and that overseas territories controlled by the members should not be associated with the common market. Other members of O.E.E.C. are reluctant to abandon the protection of their national agriculture for such a step would impair the possibility of balancing the advantages and disadvantages of the free trade area.

The creation of the Free Trade Area has become more difficult since the formation of the Common Market. There were initial difficulties in bringing about a more advanced economic union such as the Common Market, with countries which, by becoming numerous, were more and more divergent in character. In order to effect the harmonization of the Common Market with the Free Trade Area, he felt that it would be necessary for both groups to keep to the lowest level of external tariff, for the progressive abolition of the other trade restrictions between members to be applied and for a solution to be found for agricultural products which are more or less protected in the Common Market. It is necessary also to provide for a harmonious development of the two organizations together. It is believed that the inter-regional regroupings which are now developing in Europe would have repercussions favourable to everybody.

Dr. C. M. Castillo of Mexico made some comments on these three papers. Referring to the transference of technological knowledge from the more to the less developed countries, referred to in Dr. Paarlberg's paper, he stated that not all is well with the technical co-operation activities as the way they have functioned and grown in recent years. The more developed countries will have to tackle the

problem of the relationship between their programmes of technical co-operation and the purely political objectives of their general foreign policies. The administration of bilateral programmes should be taken out of political departments and placed in either technical centralised departments or in decentralised, autonomous institutions.

Referring to international commodity agreements, he stated that this approach to foreign trade difficulties is probably applicable to problems that arise from maladjustments of supply and demand of individual products. He does not see how they could be used successfully to stabilise prices in those instances dealing with general economic fluctuations. Although available evidence showed at least a slightly favourable effect arising out of international commodity agreements, there should not be any cause for discouragement by recent failures or deviations from the main objectives ; and this approach should be given a fair chance. Referring to the United States Public Law 480 on surplus disposal, he said that while other relatively more developed countries have cause for concern with some of its effects on their economies, a fair evaluation of this programme should take into account the benefit that its operation has brought to other countries.

With regard to inter-regional groupings for economic purpose, he said that regional integration seeking to facilitate economic development by enhancing the extent of the market makes it possible to attain a more adequate and efficient division of labour. But specialisation is very difficult to obtain along the lines of already existing economic activities, mainly in the area of traditional agriculture.

“Planning” Procedures

Another aspect discussed at the Conference was ‘planning procedures’. Shri J. J. Anjaria (India), Prof. K. Ohkawa (Japan) and Dr. L. E. Samuel (Israel) read papers on this subject.

Shri J. J. Anjaria in his paper on *‘Agricultural Planning in India: Procedures and Techniques’* confined his discussion to (a) the procedures, which are taken to comprise mainly the administrative processes involved, following from the Constitution or from the conventions adopted in practice, and (b) the techniques of agricultural planning in India, which are the instruments for implementation, and are related to economic and social policies. Agricultural planning of the rudimentary sort was initiated in India at the beginning of the Second World War. Attempts were made to control food prices in the face of sizable short fall in supplies because of the cessation of rice imports from Burma. A campaign to ‘Grow-More-Food’ was launched. By a system of price and distribution controls, the efforts of the Government to keep the inflationary forces in check met with a large amount of success but the targets of increase in production largely remained unfulfilled. The situation worsened after the Partition. Not only the goal of self-sufficiency in foodgrains became difficult to achieve, new shortages in agricultural raw-materials also manifested themselves as large areas producing jute and cotton were seceded from Indian Union. Inevitably, a programme of integrated production had to be formulated and necessary priorities and balances had to

be decided. The First Five-Year Plan formulated in 1951-52 took a connected view of the whole problem.

In formulating targets of agricultural production, the role of Union Government is confined to overall direction and supervision, as under the Constitution, agriculture is a State subject. For arriving at the national targets of agricultural production there was considerable discussion, first, among the technical and administrative officers at the State level, and, later, between the State Governments and the Central Ministry of Food and Agriculture and the Planning Commission. In the First Five-Year Plan, top priority was accorded to agricultural production both to meet the current shortages in food and raw materials and to prepare a well-developed agricultural base for industrialization. The First Plan target for additional production of foodgrains was 7.5 million tons. Cotton production was expected to go up by 1.26 million bales; output of raw jute by 2.1 million bales; of sugarcane by 0.7 million tons and of oilseeds by 0.4 million tons. In order to fulfil these and other targets in the rural sector, measures embracing all aspects of rural life and agricultural business were postulated simultaneously which included, among others, comprehensive programme of land reforms and the Community Development and National Extension Schemes.

As compared to targets, the foodgrain production exceeded by 43 per cent. The output of oilseeds turned out to be 56 per cent above the target. The performance in respect of cotton, jute and sugarcane was, on the other hand, 82, 43 and 35 per cent respectively of the original expectations. The index of agricultural production (base 1949-50) rose from 95.6 in 1950-51 to 115.9 in 1955-56. The increase in production was neither steady nor evenly spread over all the commodities. It can be stated, however, that since the First Five-Year Plan, the production potential in the field of agriculture is being steadily added to, and also, that the efforts being made are in right direction and need to be intensified.

In the Second Plan, attempts to present and implement correlated programme for the economy as a whole are further accentuated. There is a shift in priorities as between the First Plan and the Second Plan as agriculture (including irrigation) has been allocated as smaller share of the total than First Plan. Nevertheless an increase in agricultural production remains a major objective.

The procedures followed for formulating the Second Plan were in essence the same as those for the First Plan. The overall targets, however, were arrived at after more elaborate estimation. The broad targets in the major fields were determined in the light of increase in national income felt to be desirable and feasible against the background of the long-term model set forth in the First Plan with certain adjustments.

The Second Plan envisages an increase of 24 per cent in the food production. The percentage increases aimed at under cotton, jute, sugarcane and oilseeds are 62, 31, 33 and 35 respectively. All the necessary facilities to reach these targets, like more irrigation, improved seeds, more fertilizers, easier credit, etc., are provided. The Community Development and National Extension Programmes are oriented towards higher production.

It is not possible yet to assess fully how the Second Five-Year Plan in respect of agriculture is progressing. Though a production potential of roughly 3.6 million tons was added in the first two years of the Plan, and further addition of 3 million tons is expected in the third year, the domestic supply is not able to cope up with the rising demand. An important failing in this direction is the insufficient utilisation of irrigation facilities by the farmers.

Rapid development of agriculture is the most difficult part of planning specially in a democratic set-up. It involves complex problems of communication (*i.e.*, transmittal of ideas) and organization. Planning in India proceeds within a democratic framework. In fact, the plans themselves are regarded as a means of strengthening the democratic system. What can be expected, then, is not that the procedures and technique adopted yield the results foreseen, but that effective steps are taken by way of investment of resources and creation of conditions in which the agriculturist has the will and the capacity to improve upon his performance.

Institutional changes are vital in this context and India's plans have in view the building up of a co-operative structure.

Agricultural price policy in India has tended to be viewed as an element in the maintenance of over-all economic stability rather than as an instrument for inducing any defined distribution of resources within the broad field of agriculture. The shift towards the middle of the First Plan period from a fairly elaborate system of controls to "progressive decontrol" and the changeover since 1956 to "selective controls" reflects this approach. The experience of last few years has, however, brought out the need for a more clearly defined price policy. In the light of past experience, the Food Grains Enquiry Committee has recommended a system of regulation through licensing of traders, buffer stock operations within a broad price range and limited compulsory procurement—a system which might be described as intermediate "between complete free trade and full control."

Prof. K. Ohkawa, Hitotsubashi University, Japan, discussed in his paper the procedures of planning of agriculture in Japan. In December, 1955, the Japanese Government approved for the first time an over-all economic programme called the "Five-Year Plan for Economic Self-Support." In the course of two years immediately following the Plan, the Japanese economy experienced a very rapid expansion so much so that the estimated rate of economic growth (5 per cent per annum) was exceeded and targets in many directions had been achieved. This excessive expansion brought about serious difficulties in respect of balance of payments and necessitated in turn depressive policies by the Government.

In order to rectify this situation, the Government undertook in December, 1957 the "New Long-Range Economic Plan" for the five years 1958-62, to provide guiding principles for attaining an optimum rate of economic growth consistent with stability. An optimum rate of economic growth is fixed at 6.5 per cent per annum in terms of gross national product. At this rate of growth, in 1962 the gross national product and personal consumption will be 40 per cent and 38 per cent higher respectively as compared with the base year 1956.

Agricultural planning constitutes one of the important and integral parts of the plan, the objectives of which are: (i) to increase agricultural productivity to cope up with the growing demand for food and raw materials, (ii) to maintain an increasing rate of *per capita* real income in the agricultural sector *pari passu* with those in other sectors of the economy, and (iii) to transfer surplus labour from the agricultural sector to non-agricultural sectors.

The First Plan proposes to absorb the new entrants in the labour market and a portion of disguised family workers in the non-agricultural sector. Thus it is necessary that the growth-rate of the non-agricultural sector should be high enough to absorb all the increased labour force within agriculture.

The programming of output was integrated into a national aggregate *via* three broad categories: primary, secondary and tertiary and the respective growth rates of these sectors are set at 3.0, 7.2 and 7.2 per cent per annum. As a result of this, the composite ratio of primary sector will diminish from 19 per cent in the base year to around 16 per cent in 1962 and the estimated increase in productivity in primary sector will be 25.6 per cent over the base year, occupying an intermediate position between 34.2 per cent increase in the secondary sector and 24.8 per cent increase in the tertiary sector during the plan period. It is also estimated that farmers' relative (relative to urban workers' households) income will not substantially decrease. The production targets were approached by estimating the possible area of crop planting, average crop yield per unit area and the progress in agricultural techniques, and the development of land improvement projects. Thus the increase in farm products will be 14.6 per cent and that of livestock products will be 62.6 per cent, over the normalised production level at the base year. This means that the annual increasing rate of agricultural production as a whole is projected to be 3.3 per cent. The amount of inputs in agricultural production has increased during recent years without corresponding increase in prices thus turning the terms of trade against the farmers. To avert this, policies to promote measures for price support, rationalisation of marketing, more efficient utilisation of equipment shall be encouraged.

The Japanese economy to a large extent depends on the imports of both food and raw materials. The problem of whether it is reasonable to encourage domestic agricultural production to substitute directly for imports, or to promote export industries to pay for these imports, presents another important issue of economic planning. The import of farm products is expected to increase by 9.7 per cent, in addition to the planned increase in the domestic supply. However, the ratio of farm products import to total imports will diminish from 21.5 per cent in 1954-56 to 13.6 per cent in 1962, as the import of non-farm goods is expected to increase fairly rapidly to meet the requirements of the growing economy.

The over-all plan involves domestic investment of \$3,718,000 or 28.5 per cent of the gross national product in 1962. This rate of investment compared with that of previous years seems to be somewhat ambitious.

By way of conclusion he said that the planning procedure of the Japanese economy and therefore, of her agriculture appears to be weak, as the long-term targets of Government investment for basic sectors are rather vague.

Dr. L. E. Samuel, Ministry of Agriculture, Israel, in his paper described the main characteristics of agriculture in Israel and examined the planning procedure for agricultural development. In Israel, planning is being carried out to achieve certain production targets and is linked with increased settlement on land. In the evolution of agricultural policy, he distinguishes two periods: (1) from 1890 to 1948 and (2) from 1948 to the present day. The earlier conception of agricultural policy has had a considerable impact on the policy, decided upon and put into effect since 1948. Differentiating the earlier period into two phases: *i.e.*, (1) from 1890 to 1925 and (2) from 1926 to 1948, he said that in the first phase, under the guidance of Rothschilds, agriculture for the Jewish settlers was organised by setting up villages and farm-types. There were cereal farms, and olive-almond, wine and citrus plantations. The Rothschilds gave settlement budgets to farmers and met current expenses. Except for citrus plantations, however, today the rest form a small proportion of over-all production.

During the second phase (1926-48), agricultural policy was designed by Professor J. Elazari-Volcani with emphasis on diversified farms. The production of perishable protective food formed the backbone of diversified farms, though in last three years industrial crops gained importance. In some major aspects, targets in agricultural policy have nevertheless changed. During the earlier period, settlement on land at modest living standards was itself a target.

The production targets since 1948 are influenced by Israel's currency problem as well as the issue concerning the fodder basis for livestock trade, which still provides 60 per cent of gross income on diversified farms as against 65 per cent in the first period. The Ministry of Agriculture was expected to expand rapidly production of feeding stuffs. The official production target until 1955 was full self-sufficiency. Stimulus to exports was given throughout. During the last three years it has been recognised that, in the long run, the economics of import-replacement as well as of export expansion must be carefully weighed. A programme for the production of sugar-beet, peanuts and cotton was adopted and partly implemented.

Discussing procedure in agricultural planning, he stated that the targets of policy have a decisive impact on the organisation of agricultural planning as well as on the methods used. The technical side is handled by *Agricultural Planning Centre*, under the direction of the Ministry of Agriculture and Settlement Department of Jewish Agency. The former prepares blue-prints for new settlements and additional farms in existing settlements. New farm-types are designed with the aim of increased overall efficiency. It has to ensure a scale of planning which will achieve a balance between the market conditions and a minimum living standard. The lay-out of settlements and farms is done by the Settlement Department of the Agency which has a large trained staff of administrators and farm instructors.

The Economic side is handled by the *Division of Economic Planning in Agriculture*, whose director is also the Economic Adviser to the Ministry of Agriculture. The Division has two sections—one dealing with marketing, prices, subsidies, agricultural policy and role of agriculture in national economy, and second with farm-management, costs of production and agricultural credit.

Another issue is that of assistance to young farms to bring them to economic scale of operation. The Settlement Agencies provide the settler only half the

living and dead equipment and 40 per cent to 60 per cent of water needed. If the transition period of building up the full farm is too long, the settler migrates to urban area. This is so, in spite of his receiving long-term loans at low interest rates, to be paid after a definite interval. Certain subsidies for young farms are taken account of in planning stage.

The Economic Planning Division has to prepare policy recommendations on price policy in general, including guaranteed prices and subsidies for maintaining certain price levels.

In his opinion, Israel has not yet reached a satisfactory level in planning for agricultural development. Many issues remain unclear; but improvements in methods are always tried. Assistance given to agriculture is sought to be brought in line with that given to other sectors.

Dr. R. Aktan of Turkey after briefly reviewing the broad similarity among the planning procedures for agricultural development in the three papers, pointed out the striking differences among them. Referring to the development of agriculture in India, he said that it probably is necessary to give Indian agriculture a stronger initial push and to use more persuasive ways of influence in order to start and assure a continuing agricultural development and to attain better results. Instead of a policy of price supports which may not be used efficiently and wisely in a nearly self-sufficient agriculture, modest amounts of subsidies, if they can possibly be envisioned, may beneficially be used to bring about a wider adoption of newer and better production techniques.

In regard to Japan, he said that her problem essentially is to keep the productivity in farming abreast with the rest of the economy to secure balanced development.

Referring to Israel's development problems which are of much smaller magnitude compared with these two countries, he observed that the planners of Israel acted wisely by not trying to stretch the possibilities of agricultural production to the self-sufficiency level.

Referring to specific difficulties of planning in agriculture, **Prof. O. Schiller** of Germany said that the difficulties in planning resulting from instability in output are further aggravated by the low elasticity of demand, especially felt in those agricultural products produced in great quantities. Distinguishing between long-term measures of directing and influencing the changes of agrarian structure and the short-term measures of price policy determined to direct production according to the needs of the national economy, as set out in the three papers, he said that an instructive example of both sides of planning was found in Japan. With regard to the human factor in the planning machinery, he observed that in many cases the planners are faced with psychological difficulties. The more comprehensive planning becomes the more the bureaucratic apparatus needed increases. The success of planning to a high degree depends upon the technical and human qualifications of the persons who are charged with the preparation and implementation of plans.

International Co-operation in Agricultural Economics

Mr. J. R. Currie, Research Department (Economics), Dartington, U.K., in his paper dealt with international aspect of co-operation in agricultural economics, accomplished on a voluntary basis from the individual point of view. He classified the international organizations into two groups: (1) those that are allied to, and supported to a considerable extent by national organisations, and (2) those that have only loose national connections and whose membership is personal and directly international. The organisations in the first group, to a greater or lesser extent have been formed to promote the interests of special groups, through dealing in a practical way with the problems in their particular fields. The findings of these bodies are frequently formulated as resolutions directed to legislators, designed to stimulate government action. The orbit of the second group is world-wide in the sense that their efforts are not directed towards any one section of the community except in so far as there may be specific problem areas requiring attention of thought or action. Each has its place in the unravelling of the tangled skein of social phenomena and in implementing such findings as may be soundly established by the endeavours of its members.

The International Federation of Agricultural Producers (I.F.A.P.) deals directly with farmers and is directly interested in producers' problems. It attempts to assess the economic position so as to establish prosperity trends and the status of its members generally throughout the world. The organisation is based mainly on national groups which in turn reflect not only the economic climate of each area but also its psychological pattern. The Federation has carried out the dual task of bringing agricultural problems to the notice of governments and making producers in any one part of the world more aware of the difficulties and aspirations of the producers in others.

The Confederation of European Agriculture (C.E.A.) seeks to deal with general economic and agricultural problems throughout the continent. Membership is confined mainly to scientists whose training and primary interests are more technical than economic though the Conference programme places considerable stress on economics. The representatives are selected as *individual* members; but most European governments give considerable support to the Federation and, in particular, help members engaged in government service to attend its meetings. The author felt that to the extent that members are supported in this way, it would limit the objective approach and even create a partisan attitude in considering problems of different countries. The formulation of final resolutions and putting them forward as policy statements which would indicate the lines on which governments might take action is a characteristic feature of the Conference.

The European Association of Animal Production (E.A.A.P.) is composed of national groups whose primary interests originally were confined to seeking out those physical factors in animal husbandry that affect the general welfare of agriculture. Now, much greater weight is given to the implications of economic and social factors. Membership is confined to Europe and the Mediterranean countries. Technical and economic questions affecting agriculture are discussed at the triennial meetings held at a new site each time. Though a great deal of individual freedom is expected, there is a natural tendency to stress the problems of particular

countries, especially where economic questions arise. The author is inclined to the view that formulation of resolutions like the C.E.A. may detract from the objectivity of the discussion and could even leave room for pressure groups to operate.

In the second group of international organisations connected with agricultural economics, the World Council of Churches is non-political in nature. It was established in 1951 at Evanston, Illinois. Membership is individual but is closely associated with and to a certain extent governed by religious bodies. It established a commission to study and collect data on the tragic problems of refugees on the one hand and to render 'first aid' in all emergency situations on the other. The organisation forms a remarkable bridge between official bodies and voluntary effort and does much by its practical work and even more by its humane influence to enlighten world public opinion.

The International Economic Association which bears the closest affinity to the International Conference of Agricultural Economists (I.C.A.E.), was established in 1949 largely through the agency of UNESCO. It is made up mainly of economists, representing 25 national associations. Triennial meetings are held each time in a new place where a central theme is chosen around which all the opening papers and discussions are related. The discussions are obviously designed with a central objective of establishing fundamental incontrovertible truths. No attempt is made to arrive at any firm set conclusions that could be put forward as resolutions.

Finally, Mr. Currie gave a brief historical picture of the I.C.A.E. It is an organisation which belongs to the applied sciences. He quoted the objective of the Conference which was formed "to bring together agricultural economists from many countries to discuss research results and research methods that were of common interest; to discuss national and international problems in the field of agricultural economics and to promote a more effective and more rapid exchange of agricultural economic information." Thus its aim is not only to determine the soundness of general principles but also to develop philosophies and techniques of wide application that will cover a wide variety of circumstances in both short and long run. It is believed that this will lead to improved practices and conditions not only for those engaged in agriculture but for mankind in general. It seeks to achieve the final goal of uplifting the standards for all.

Thus agricultural economics as a profession covers a wider realm and has a new and wider responsibility than was thought at one time to be the case. The agricultural economist over the years has been adapting his work and his thinking in response to the new pressures arising from the stress of the new age which was ushered in World War II. The organisation has during this period greatly facilitated the flow of economic knowledge and experience between agricultural economists throughout a great part of the world. The work of the Conference has had considerable influence on the value as well as on the spread of agricultural economics.

The experience of the science of agricultural economics has shown the great value of variety in techniques and in approach when dealing with economic and

social problems. At the same time, the author sounded a note of warning that the activities of the organisation should not become too dispersed and parochial in outlook. He further expressed belief that more and more collaboration with other disciplines and co-operation with fellow-organisations can have a very stimulating, fruitful and possibly salutary effect on the ambitions as well as on the work of the Conference.

Dr. E. M. Ojala of ECAFE, Bangkok, in his speech referred to international co-operation in agricultural economics in Asia and the Far East. He said that two kinds of international contacts are needed in this region, *viz.*, contacts with colleagues in advanced countries overseas and with colleagues in other countries of the region. Referring to the channels for such co-operation outside the region, he said that on the non-governmental side, credit must be given to the International Conference of Agricultural Economists. There are other world professional associations open to agricultural technicians and economists from this regions such as the World Co-operative Alliance and the International Federation of Agricultural Producers. In the case of the latter, he said that there is need for an enlargement of its membership among underdeveloped countries. The association between Asian and North American Universities probably affords another important non-governmental source of overseas co-operation for agricultural economists in Asia. Referring to the role of *ad hoc* meetings, sponsored under Government auspices, on agricultural economic problems, where the agricultural economists of Asian countries meet together more frequently than in voluntary international societies, he said that such official groups cannot take the place of unofficial gatherings of scientists. Independent international discussion of common problems, based on the analysis of reliable data, might exert an important influence on national policies for agricultural and economic development.

Concluding Remarks : **Shri Manilal B. Nanavati**

On behalf of the Preparatory Committee, I thank you all for appreciating what we have been able to do in connection with this Tenth Conference. We have been thinking of it since 1947. It took nearly ten years for its fulfilment. I do not know whether you are all Freemasons. You know, when the Freemasons' meeting is over, a toast is proposed. At the end of the toast, these sentiments are expressed : "Happy we meet. Sorry we part : Happy we meet again." The same sentiments arise uppermost in our minds today. We have assembled here not only for gathering the little bag of knowledge but also developing the friendships and the intimacy in the course of the last 10 to 12 days we have been here. Personally, I attach the highest importance to this—more than anything else that I can think of. After all human society lives on human feelings and sentiments. If I feel grateful today, it is because of the development of fellowship that I see arising out of our contacts here—either at the tea rooms or the Conference rooms or anywhere else where I saw contacts being established. We are all engaged on a very important mission in life in helping the poorest class of people in the world to raise their standard of living. If we can contribute anything by our help, by our co-operation and by our fellowship towards the fulfilment of this mission, I think, we shall have achieved something and your coming here from long distances from many parts of the world would have been justified.

We are sorry that you are going, particularly because of the friendships we have established. Naturally, we like to see that lasting friendship is established between us. But parting is inevitable. We are absolutely sure that you carry with you the best of memories of the time you have spent here. Everyone of us has endeavoured to see that the Conference is a success not only from the point of view of material comforts, but also from the viewpoint of the knowledge that we have acquired here. That is the fulfilment of our objective. The next is 'happy to meet again'. The memories you carry with you will, I am sure, attract you to come here at your earliest when we are prepared to receive you or when you are prepared to come to us. That should be the greatest attraction. The friendship that is developed, the intimacy that we cultivated is important enough. Because, I feel that we are fellow-travellers in a great cause. With that feeling I close once again with the sentiments—"Happy we meet, Sorry we part and Happy we meet again."

Before I conclude there is one more thing I want to say especially about the retiring President. We have been in contact with each other since the last ten to twelve years, and I found in him one of the finest men I have come across in life—his generosity, his readiness to understand each other's point of view, his farsightedness and his burning desire to make this Conference a sort of world institution. When I heard that he was going to retire, it was a great shock to me. He is leaving us when the work is not fully developed. There is considerable amount of work to be done in many fields and the problems of backward parts of humanity are yet to be fully understood and appreciated. There are no limits to knowledge or research. In this complex world, new problems arise and we thought that his presence at the Conference would be helpful and necessary. However, I understand that he is going to be relieved of his executive duties and that he will be able to devote himself to the wider objective in a freer atmosphere. I wish him long life and prosperity. As a token of appreciation of the work that he has done, I present him with an album of the photographs of this Conference and also a silver plated replica of the sacred Nandi Bull found at the famous Chamundi Hills in Mysore.