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'PLANNING PROCEDURES'

(a) INDIA

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AS Professor Anjaria was called away suddenly on urgent official business, the President accepted his paper and invited Dr. S. R. Sen to introduce it, which he did in the following words.

I do not propose to cover the whole of Professor Anjaria's field. Instead, I would emphasize a few points which seem to me to have special significance so far as agricultural planning in India is concerned.

As you are aware, we have in India a mixed economy. While there are important sectors of the economy where the Government plays an important part, there are large areas where laissez faire is the rule. Moreover, India is not a closed economy. It is open, subject to all the pressures of international economic forces. While administration of a completely laissez faire economy or the management of a fully socialized economy have their own problems, the management of a mixed economy of the kind that we have here is peculiarly difficult and complicated. No doubt, we enjoy certain advantages of both systems; but at the same time we have to contend with some of the disadvantages of both. To the extent that planning disturbs the usual self-balancing mechanism of a market economy, we have to face a number of difficulties. On the other hand, to the extent that the existence of an open market limits the effectiveness of any action taken by the Government, we do not have the operational advantages which planning authorities in a completely socialized economy often enjoy.

Then there is also the basic difficulty to which a reference was made by our Prime Minister in his inaugural address. In other countries economic development came before political democracy. In India, political democracy has come before economic development. The politically conscious masses are constantly pressing us for faster development and quicker results. They are pressing the Government to give them jam today and also jam tomorrow, with the result that the choice between present consumption and future investment is becoming increasingly difficult.

There is another difficulty inherent in planning in a country like India. Because of the lack of statistics and other information, the First Plan had necessarily to be rather imprecise. On the other hand, in the First Plan the resources were so small and the shortages were so obvious that it was not very difficult to take a general decision about the most important priorities. But

as economic development takes place and as progress is made from a first to a second plan and so on, and some of the more urgent needs are satisfied, the question of priorities becomes more complicated, although it must be said that each plan makes possible the collection of more precise statistics and other information for the formulation of the succeeding plan.

Because in India we have to work in the context of a mixed economy and political democracy, the process of planning has necessarily to be somewhat of a backward and forward process in which the technicians have an important role to play but the ultimate decision is not just the result of a technician's analysis, and far less the arbitrary decision of a supreme political authority, but rather a series of compromises between different politico-economic interests.

Professor Anjaria has tried to give you an idea of the procedure of agricultural planning for our First and Second Plans. It may interest you to hear how we are proposing to formulate our Third Plan. Although the Plan will not commence until 1961, work on it has already started. A number of economists and statisticians are currently engaged on what is essentially an exercise in econometrics. They are trying to make a rough estimate of the resources and requirements of the country twenty years hence. These projections are being discussed with the various technical people in the ministries concerned, and certain long-term targets are being formulated. As a first step each technical group is being asked what targets they would envisage, say in 1976, if they had to contend only with physical problems and did not have to worry about financial problems; then, keeping their sights at that level, what they think is necessary and possible for the period 1961-6.

On the basis of such a procedure a plan-frame will be prepared by the technical workers in the Planning Commission and considered by the National Development Council. This is composed of the Prime Minister and Ministers of the central government and Chief Ministers of all the state governments, and represents the highest political authority in the country. Certain control figures will be agreed upon and the plan-frame finalized for discussion. It will be sent to the various ministries and state governments as a preliminary guidepost, and in the light of it, each village, each district, each state and each ministry of the central government will prepare its own plan. All these plans will be co-ordinated by the immediate higher authority and forwarded to the Planning Commission. Then a process of balancing will begin in the Commission—balancing demand against supply, imports against exports, raw materials against finished products, consumption against production, financial resources against physical resources and so on. From this exercise a draft plan will emerge which will be published and subjected to country-wide discussion in the press, in the universities, and in scientific, political, and social organizations. Then in the light of all these discussions, a final plan will be prepared by the Planning Commission in further consultation with the

ministries and state governments and placed before the Government and Parliament for final approval.

It will be seen that this is essentially a backward and forward process in which the first exercise is undertaken by technicians but is followed by a series of compromises. The final plan is the resultant of many diverse considerations—technical, social, and political. It is obvious that planning in the field of agriculture in a country like India cannot be purely an econometrician's handiwork or a technician's exercise. The technician, the politician, the public, and the various interests in the country must all have their say. It therefore represents many compromises. But even this is not enough. The plan has further to be broken down into annual plans where perhaps the technicians have a greater say. Thus our planning is in three parts—the perspective plan, the five-year plan, and the annual plans—and in this we have perhaps some similarity with countries which are completely socialized. In these countries, however, the role of the free market is probably much less, compromises are fewer and technicians play a relatively more important part. But we feel that in a mixed economy and in a political democracy, the technician has to work along with others and subject his analysis to the various social and political considerations which are presented by society as a whole.

The disadvantage of this procedure compared with that in some of the completely socialized countries is that the targets, as Professor Anjaria points out, are only broad indicators of the tasks to be undertaken. They are not a precise target of achievement, as their fulfilment depends very much upon factors not amenable to directives. Professor Anjaria rightly points out that what can be expected is not that the procedures and techniques adopted will yield the results foreseen, but that effective steps will be taken to exploit resources, and that conditions will be created in which the agriculturist has the will and capacity to improve upon his performance. Agricultural planning in this country therefore, does not involve the imposition of a rigid crop pattern. Here public works, provision of essential supplies, agricultural extension work, and price and credit policies play a much more important role than directives given by government.

Our first task is to provide conditions or, as we call it, to create production potentials, which will make possible a certain general development of agriculture. This is a target which is to be definitely achieved. Then we try to achieve a certain increase in the total agricultural productivity. This is less firm than the target of production potential but is nevertheless a target which has a relatively greater degree of firmness. Less firm are the targets for individual crops within the overall target of agricultural production, because these crops depend not only upon the economic conditions created by the relative level of prices, but also upon natural factors like the weather. By and large, our experience is that during the First Plan we achieved more or less the target of

production potential as a whole and also the target of agricultural productivity in general, although some crops varied considerably from their targets. So far as the Second Plan is concerned, the same has been generally true during the first two years, although by the end of it there may be some over- and some under-fulfilment. So far as the creation of production potentials and the development of agricultural productivity are concerned, we should be reasonably successful. But actual production of different crops may vary considerably from the targets envisaged.

The question may then be asked: if the targets of production of individual crops vary very much from the targets set out in the plan, will not that make our plan meaningless and infructuous? If we were a closed economy that danger would be real indeed, but we live in an open economy so that, even if the production of individual crops varies from the targets, so long as the target of over-all agricultural production is achieved, it should be possible to make adjustments to minimize the difficulties.

In international trade we have one safety valve, and another in the price mechanism of the domestic markets. Planning in a mixed economy may lack some firmness and precision but it gains in several other ways, especially in flexibility. In an under-developed country, and especially in agriculture, one need not be discouraged by a lack of precision. Flexibility, on the other hand, has some advantages. As a railway engineer keeps a gap between two rails to allow for expansion and contraction, similarly in fixing our targets we should have sufficient margin for adjustments. We live in a dynamic world and while we give as much concrete shape as possible to our ideas of economic development, we should also ensure that the entire structure is flexible enough to meet changing conditions.

This paper¹ attempts to discuss the two related, but not identical, questions of (a) the procedures, and (b) the techniques of agricultural planning in India. Procedures are taken to comprise, in the main, the administrative processes involved; they follow from the Constitution or from the conventions which have come to be adopted in practice. Techniques cover the ways and means or instruments for implementation, and are related to policies, economic and social. The two become linked through the agencies for formulating and/or implementing the programmes.

Agricultural planning of a rudimentary sort began in India during the Second World War. The attempts to control food prices, in the face of a sizeable shortfall in supplies because of the cessation of rice imports from Burma, led to the initiation of a campaign to 'grow more food'. The main lines of action were: diversion of land from commercial crops to food crops; extension of irrigation; supply

¹ Written by the author in his personal capacity; it has no official sanction.

of better seed and manures; improvement of farm practices; and extension of cultivation by bringing more land under the plough. Considerable sums of money were spent by central and state governments in pursuance of this broad objective. But there was no definite target, nor any estimate of the costs involved relative to the increase in output desired. The results obtained were also small.

The system of price and distribution controls which operated during the war helped to keep inflationary forces in check, but it is doubtful if they helped in increasing output, and they reacted unfavourably on marketable surpluses. Soon after the end of the war, the emphasis of the grow-more-food campaign was changed from action on a wide front to schemes for intensive development of specific areas. A target of 4.8 million tons of additional foodgrains for the five-year period ending March 1952 was worked out. The need for early attainment of self-sufficiency in food was widely publicized. It was soon found, however, that this target could not stand by itself. After the Partition, the country was short also of raw jute and raw cotton, and an increase of food production through diversion of land from other crops to foodgrains could no longer serve the purpose. Inevitably, the question was asked, what the priorities were, and how the necessary balance between them was to be kept.

In the First Five-Year Plan, formulated in 1951-2, therefore, it was necessary to take a connected view of the whole problem: the aggregate increase in output to be aimed at, the increases in particular crops, the role of price incentives in this context, the provision of credit facilities and, above all, the machinery for implementing the accepted programmes. The procedures followed are of interest at this stage. Under the Constitution, agriculture falls within the purview of state governments. The centre's role is confined to overall direction and co-ordination. Agricultural programmes have to emanate, therefore, from the states and their implementation has necessarily to be their responsibility. The centre can and has continued to render financial assistance to state governments, it can and has attempted to work out a co-ordinated programme on the basis of proposals brought forward by the states. This division of responsibility is part of the Constitution.

The First Five-Year Plan accorded top priority to agricultural production, as shortages of food and raw materials since the war and partition constituted an urgent problem. It was also recognized that without a well-developed agricultural base, a stable industrial edifice could not be built. But, certain limitations had to be borne in mind. First, the total outlay permissible was limited by the resources avail-

able, and the aggregate investment targets were fairly low. Secondly, various major irrigation projects had already been commenced and they had to be provided with funds before new projects could be undertaken. Thirdly, the statistical data of costs and outputs were inadequate, and there was not enough preparation for assessing local targets and the financial and organizational resources required to ensure their fulfilment. For arriving at the national targets of agricultural production, the likely achievements of state governments relative to the outlays considered feasible were worked out. There were considerable discussions, first among the technical and administrative officers at the state level and, second, between these and the central Ministry of Food and Agriculture and the Planning Commission. The output targets finally accepted were a summation of the production potentials of various types of schemes, each scheme or group of schemes being evaluated in terms of certain 'yardsticks' (e.g. so much additional area irrigated yields so much additional output) derived from broad experience. A sizeable proportion of the outlays on major irrigation was expected to bring in results only after the end of the Plan period.

The First Plan target for additional production of foodgrains was 7.5 million tons, i.e. an increase of 14 per cent. Cotton production was expected to go up by 1.26 million bales or 42 per cent.; output of raw jute by 2.1 million bales or 63 per cent.; of sugarcane by 0.7 million tons or 12 per cent.; and of oilseeds by 0.4 million tons or 8 per cent. For attainment of these targets, the maintenance of an appropriate structure of relative prices was postulated. This objective of increased production was viewed as part of an over-all long-term programme of rural development. The Plan itself provided for community development and national extension covering as much as a third of the rural areas; for roads and communications; and for considerable expansion of social services. Improvements in rural credit and marketing and a programme of land reforms were envisaged as essential elements in this comprehensive reorientation of the agricultural community.

Compared with the targets mentioned above, the actual increases in output by 1955-6 were larger for foodgrains and oilseeds and smaller for other crops. The foodgrains target was exceeded by 43 per cent., the increase in production being 10.8 million tons compared with 7.5 million tons. 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.

While the index of agricultural production (base 1949-50) recorded a significant increase from 95·6 in 1950-1 to 115·9 in 1955-6, it is difficult to judge how much of this could be attributed directly to the investments made during the Plan period. The index of foodgrains production rose from 90·5 in 1950-1 to 113·5 in 1955-6, but 1950-1 was a bad year. Nor was the rise a steady one; the index for 1951-2 was 91·1 and for 1952-3 101·1. The peak output for the five-year period was obtained in 1953-4 when the index touched 119, receding in the subsequent two years to 114·4 and 113·5. Commercial crops, except for jute, have, on the other hand, shown a relatively steadier upward trend, the index rising from 105·6 in 1950-1 to 120·7 in 1955-6. The monsoons account considerably for the sharp increase in foodgrains production in 1953-4. Of the programmes in the Plan, irrigation and community development lagged considerably behind the targets aimed at. The area under irrigation increased by 14 million acres, which is 5 million acres below the target. On community projects and national extension, Rs. 33 crores out of a total allocation of Rs. 90 crores remained unspent, mainly because this was a new programme the requirements of which could not be estimated accurately in advance, and partly because the programme was commenced only towards the end of 1952. A state-wise analysis of the increases in output of foodgrains shows that notable increases were recorded in states like Rajasthan, Madhya Bharat, Vindhya Pradesh, and Pepsu which had no proper data for the earlier period. A part of the aggregate increase in foodgrains was thus due to improved statistical coverage. If allowance is made for this, the increase would be fairly close to the original target; but, again, this cannot be correlated directly to plan outlays, which were stepped up considerably in the latter part of the period. An interpretation of agricultural production trends in a country like India where the outcome depends so much on the monsoon can hardly be attempted except over a fairly long period—say, a decade or more.

These limitations notwithstanding, it must be emphasized that since the First Five-Year Plan, the production potential in agriculture is being steadily increased; the use of better seed and fertilizer is spreading; the rural community has felt the impact of the community development and national extension movement; and there is general agreement that although the techniques of plan formulation and implementation are as yet not fully satisfactory, the efforts are in the right direction and need to be intensified.

We may turn, however, to the problems of the Second Plan before attempting an over-all appraisal. The Second Plan lays major emphasis

on industrialization, including mining and transport. Of the total outlay envisaged, some fifty per cent. is accounted for by industries (including small scale and village industries), mining, railways, and other programmes in the field of transport and communications. There is thus a shift in priorities as between the First Plan and the Second, so that agriculture (including irrigation) has been allocated a smaller share of the total than in the 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. The proposals in respect of agriculture were worked out by the states; they were discussed in the central Ministry of Food and Agriculture and in the Planning Commission; and they were given a final shape after the states had re-worked their programmes in the light of the over-all targets indicated by the centre and the financial allocations available. At the centre, the techniques adopted for arriving at the plan targets were more elaborate than in the First Plan. An attempt was made first to determine the broad targets in major fields in the light of the 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. A plan-frame was thus provided as a guide-map to the central ministries and the states for formulating their proposals. The plan-frame itself was based on a very rough assessment of the cost-output relations in various sectors and the increases in demand associated with the rise in national income. The states, for their part, worked out their schemes district-wise, and some attempt was made to relate the proposals to be put up to the centre to local requirements and possibilities. The deliberations preceding the adoption of the Second Plan were fairly prolonged, and the major objectives and targets were approved by the National Development Council (comprising the Planning Commission, some of the Ministers at the centre, and the Chief Ministers of states presided over by the Prime Minister). The original assumptions and technical ratios of the plan-frame could not, of course, be followed through in all cases, and in several fields it was found that the physical targets proposed could not be attained with the financial outlays which had necessarily to be kept within limits. Nor, with the statistical data available, could balance as between the growth of demand and supply in various sectors of the economy be worked out in any precise terms.

The Second Plan is, however, an attempt to present and implement correlated programmes for the economy as a whole and to stretch available resources to the maximum in order to put the economy into

its growth orbit. It was emphasized in this context that each five-year plan has to be set in a wider perspective covering a longer period, and that from this point of view, rapid increases in agricultural productivity were called for. Since the Second Plan involves a substantial step-up in investment, an increase in consumer goods, principally food, is of special importance for the maintenance of economic stability.

The target for additional production of foodgrains by the end of the Second Plan is about 15 million tons, or an increase of almost 24 per cent. compared with the level at the end of the First Plan. The percentage increases aimed at under cotton, jute, sugarcane and oilseeds are 62, 31, 33, and 35 respectively. It is proposed to provide irrigation facilities for a further 23 million acres, raising the total irrigated area from 65 to 88 million acres. The other programmes for achieving the target include seed multiplication and distribution; use of fertilizers and especially of local manures; soil conservation; and extension of better credit facilities, linked wherever possible with marketing. The Plan also aims at a rapid increase in the coverage of community development and national extension programmes, which are being re-orientated in the direction of organizing local effort for production rather than for building up of amenities.

It is not possible yet to assess fully how the Second Five-Year Plan is progressing in respect of agriculture. In 1956-7, the first year of the Second Plan, the output of both foodgrains and other crops was larger than in the previous year, and the index of agricultural production went up from 116 to 123. In 1957-8, there were droughts over large areas and a decline in food production is expected. On rough estimates made in the Planning Commission, a production potential of 3.6 million tons corresponding to the schemes executed was added in the first two years, and a further addition of 3 million tons to the production potential is envisaged in 1958-9. The fact remains that the actual output is still dependent on the monsoons. Altogether, the increases in agricultural production, especially food production, have been short of requirements and some six million tons of foodgrains have had to be imported since the commencement of the Second Plan. Demand, of course, continues to increase because of the growth of population and the rise in incomes arising from the development programmes.

An important problem that has come to light in connexion with the fruition of agricultural programmes is insufficient utilization of new irrigation. Of the 6.3 million acres for which irrigation was available for the first time by the end of the First-Plan period, some 2.3 million

acres remained unirrigated. Utilization of irrigation involves new farming techniques which it takes time for the farmer to adopt. The question, obviously, is one of preparing the farmer in advance for the change-over required so as to reduce to the minimum the lag between the availability and actual utilization of irrigation water. In some parts of the country the farmers have yet to construct the channels from the canals to the fields. This is a recognized responsibility of the farmers themselves, but special effort is needed to persuade them to undertake the task promptly. Rapid development of agriculture is agreed to be the most difficult part of planning. The problem is not just one of building up a few new production units or of marshalling resources in a concentrated area. It is one of activating the entire community, of teaching them and persuading them to adopt more efficient techniques of farm management, and of providing them with the necessary facilities and incentives. Planning of agriculture has been by no means easy even in totalitarian systems; it involves complex problems of communication (i.e. transmission of ideas) and organization in a democratic system.

The targets for production worked out in the plans are thus only broad indicators of the tasks to be attempted; their fulfilment depends upon factors not quite amenable to directives. What can be expected, then, is not that the procedures and techniques adopted yield the results foreseen, but that effective steps are taken by way of investment of resources and the creation of conditions in which the agriculturist has the will and the capacity to improve his performance. The financial resources that can be allocated are limited by over-all availability and the other claims that have to be met. Organization of the rural community for more efficient production is partly conditioned by structural factors, such as the size of holdings and the terms on which land is owned and cultivated. This is itself a vast and complex task which merits separate consideration. Suffice it to say here that it is not easy to judge whether the right balance is being struck between the long-run claims of efficiency and equity and the short-run pressures for stability and maximization of results within the existing structure.

Planning in India proceeds within a democratic framework, and, in fact, the plans themselves are regarded as a means of strengthening the democratic system. In both First and Second Plans, the need for building from below has been stressed; the aim is not merely more production—although this is crucial—but an enlargement of opportunities for all, the setting into motion of forces which the farmer a participant rather than a mere agent in the process of

development. This is the concept behind the community development and national extension programme. The state aims at providing the initial push and congenial environment, but it is the rural community which has to organize itself for a better way of life. Agricultural planning, in the last analysis, can succeed only to the extent that the farmer in the field is brought actively into the scheme of planning and has a plan of his own which fits into—and is the very basis of—the national plan. Institutional changes are vital in this context, and the plans have in view the building up of a co-operative structure which while retaining individual initiative enables the farmer, through a pooling of some of the resources required, to get the benefits of operation on a larger and more efficient scale.

Co-operation so far has been confined mainly to credit, and in several states, even credit co-operatives have not developed significantly. In marketing, progress has been still slower, and the experience of the few co-operative farming societies that exist has been anything but encouraging. The Rural Credit Survey Committee, which reported in 1955, made a series of far-reaching recommendations for reorganizing the co-operative movement, especially by the establishment and expansion of state-partnered co-operative institutions with an economically viable large-sized primary unit at the base. 'These recommendations have been broadly accepted in the Second Plan and a programme of establishing large-sized societies covering from forty to fifty thousand villages has been approved. A substantial increase in village societies is also envisaged. It is realized that re-organization of the co-operative structure should not be such as to entail a loss of personal contact and direct participation by the farmer in the operation of the co-operative society, and care should be taken to avoid any tendency on the part of the co-operatives to depend excessively on government support.'

Agricultural planning in India, it need hardly be stated, does not involve the imposition of any rigid crop pattern. The targets for individual crops stated in the Plan are rough estimates of what the trends are likely to be rather than an enunciation of the optimum or a judgement based on any detailed assessment of the likely responses of the farmer to the price pattern. Agricultural price policy itself 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 change-over since 1956 to 'selective controls' reflect this approach.

It is possible, of course, to base the case for controls on other grounds than that of securing a particular crop pattern. But it is probably fair to say that the shifts in emphasis between control, decontrol and selective control have followed more or less what one might call the ebb and flow of inflationary tides. The floor and ceiling prices which are prescribed from time to time for cotton, and the prices fixed annually for sugarcane, have also in view the broad objective of preventing an 'undue' fall in the return to the agriculturist or an excessive upsurge in prices, rather than of bringing about a particular change in the crop pattern.

The experience of the last few years, however, has brought out the need for a more clearly defined price policy. With development plans in operation, one expects a persistent rise in the tide as the dominant trend rather than an ebb and flow, and it is in the light of this consideration that the Foodgrains Enquiry Committee has recently recommended a system of regulation through licensing traders, buffer stock operations within a broad price range and limited compulsory procurement—a system described by the Committee as intermediate 'between complete free trade and full control'.

To sum up: agricultural planning in India is primarily an attempt to raise production all round—first, through provision of economic overheads by way of public investment and, secondly, through promotion of effort by the farmers themselves, aided so far as possible by institutional finance and other similar facilities. Greater significance, therefore, attaches to the over-all targets and to the winning of the right response by the farmer than to particular targets. Although this approach permits a certain flexibility in the techniques of formulation as well as in the implementation of agricultural programmes, there is need for improvement. Partly, what is required is a more systematic study of the technical-economic relations governing inputs and outputs in agriculture; partly—and this is even more important—the question is one of building up a network of institutions from the village level upwards to assess local needs and possibilities, to organize the local community for the tasks accepted and to act as the basic link in the arrangements for liaison with the planning authorities. The village panchayat, the co-operative society and the National Extension Service have to function together to this end. In a federal, democratic structure such as India's, the role of the central government is, in the main, to provide over-all direction and co-ordination, together with finance for the major developmental projects. The states, on whom lies the direct responsibility for working out and executing the various programmes on the spot, have not

only to utilize their own administrative machinery for ensuring the desired results, but also to foster and assist democratically organized village agencies so as to achieve a co-ordination of effort all along the line. A better integration of procedures and techniques depends considerably on how soundly such agencies function.

(b) JAPAN

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IN December 1955 the Japanese Government made public for the first time an over-all economic programme called the *Five-Year Plan for Economic Self-Support*. Before that, in the rehabilitation period of the post-war economy, several economic programmes had actually been compiled but never officially approved by the Cabinet. The rate of economic growth (5 per cent. per annum) adopted in that Plan, however, has been greatly exceeded by the actual expansion rate of the economy during the course of its first two years. Many targets in the Plan appeared to be attained before its completion, but at the same time this excessive expansion brought about a serious imbalance in the international payments accounts which necessitated in turn depressive policies by the Government. In view of these circumstances, by taking into account various factors which are believed to be responsible for the failure, the Government in December 1957 decided to adopt 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.

It goes without saying that the Japanese economy depends, in principle, upon a private-enterprise system. However, it has been recognized generally both in public and private that an over-all guide-post or yardstick for the formulation of future policies is highly desirable in order to avoid several difficult situations which private free enterprise cannot control, such as severe economic fluctuations, acceleration of unbalanced growth between advanced sectors and backward sectors of the economy, bottlenecks due to shortages of investments for basic industries and, in particular, a serious employment problem due to the great increase in the labour supply (around 2 per cent. per annum) in the next ten years. Thus, the primary objective of the new plan is to provide a sustained increase

in the standard of living for the people by overcoming these difficult economic problems. From this point of view, the rate of economic growth should be as high as possible. On the other hand, the demand for imports would increase almost parallel with the increase in economic activities, and this might lead to an unfavourable balance of international payments, as there is always a limit to the boosting of exports to counterbalance this gap. At the same time, a high expansion requires a rate of investment which would exceed the amount of voluntary savings, leading to the danger of inflation.

Taking into full consideration these counteracting factors, the plan has assumed as an optimum an annual rate of economic growth of 6.5 per cent. in terms of gross national product. If the plan is carried out successfully in the future, the gross national product and personal consumption expenditure in 1962, will be 40 per cent. and 38 per cent. higher respectively compared with 1956, the base year for compiling the targets. The pre-war rate of growth of the economy was round 4 per cent. per annum. After the war, it reached as high as 15 per cent. for the period 1947-52 because of the process of rapid rehabilitation from the ravages of war. It slowed down to 6 per cent. for the period 1952-5, so that the planned 6.5 per cent. sustained rate cannot be realized without particular policy efforts of implementation.

The programme of the economy involves setting up specific objectives and even quantitative targets as in the case of controlled planning. But their meaning is different in the case of a private-enterprise system: the ways and means of implementing them are largely left to individuals and private businesses, free to make their own decisions without direct controls. The Government aims in principle at influencing the whole economy by indirect controls such as public finance, monetary policy and foreign trade policy. On the other hand, it is also different from a mere projection of the past trend. It is true that the programme has been mainly based on the economic analysis of past trends by highly elaborate statistical computations, but the plan is the combined result of various policy requirements for the future, resulting in a specific economic perspective which calls for necessary policy decisions as well as concrete measures of implementation. In the process of carrying out such a long-range programme, the Government is requested to formulate an economic plan for each successive fiscal year in response to actual changes in the current economic situation, and this annual plan or short-term perspective gives a basic guide-post for compiling each year's

national budget. Therefore, the long-range plan deals only with the desirable course of future economic trends without dwelling upon the details of the process of implementation. I would like to concentrate my discussion on the problems of agricultural planning as one of the important, integral parts of the over-all framework of this long-range programming.

One of the basic terms of the long-term economic plan lies in the pursuit of the so-called 'balanced growth' between various sectors of the economy. The primary industries (agriculture, forestry, and fisheries) are required to supply more food and raw materials to meet an increased demand as the result of economic growth, and must make their increase of productivity balance those of other industrial sectors. How to maintain an increasing rate of *per caput* real income in this sector parallel to those in other sectors of the economy is another problem in this context.

The core of the current agricultural problems lies in the backwardness of development relative to the speedy expansion of non-agricultural sectors. The fundamental reason for this is the unfavourable factor proportions (in particular, the man-land ratio), which can be improved only in the process of absorbing the under-employed labour from this sector into the other sectors, as there is a severe limit on the expansion of farm land. It is impossible, however, to attain this improvement within a short period such as five years, in particular because of the rapid increase in labour supply. Accordingly, it was decided that in the formulation of the new plan, the targets for agriculture should be appropriate to the framework of a national economy growing at 6.5 per cent. per annum.

The primary objective of employment policy is to provide normal employment opportunities for the additional supply of labour which is expected to show an unprecedentedly high rate of increase for about ten years to come. While the total population will increase by only 0.8 per cent. annually because of the remarkable decrease of the birth-rate, the working population (aged 15-59) is estimated to increase at 1.9 per cent. mainly because of the past high birth-rate and the recent lowering in the death-rate. Under such a heavy pressure, the principal target was to attain a complete absorption of newcomers to the labour market and to carry out some modernization of the employment structure by increasing the number of hired workers and by reducing unpaid family workers. The economy at present is far from a situation in which direct programmes for full employment can be fully effective.

The expected changes in employment are summarized as follows

(figures in tens of thousands), the primary sector being mentioned in brackets :

	1956 (a)	1962 (b)	(b) - (a)
Total labour force employed	4,250 (1,730)	4,611 (1,645)	361 (-85)
Self-employed	1,086 (582)	1,119 (568)	33 (-14)
Hired workers	1,787 (14)	2,285 (14)	498 (0)
Family workers	1,377 (1,065)	1,207 (994)	-170 (-71)

(The number of unemployed will be kept unchanged at the 1956 level of 0.6 million.)

These expected improvements in the employment situation were mainly projected from the recent trends in relationships between output increase and employment increase in the non-agricultural sectors, together with some modifications based on the expected effects of policy, such as the promotion of labour-intensive industries such as machine manufacturing and small-and-medium-sized establishments. The expected decreasing trend of family workers, particularly in agriculture, is based mainly on the past relationship of this group to the upward trend of *per caput* real income. It was admitted that such a desirable decreasing trend in this sector would not be much accelerated before around 1965, when the rate of increase in the labour force of the economy as a whole will diminish very considerably. Anyway, the programme assumes that the growth-rate of the non-agricultural sector is high enough to absorb all the increased labour within agriculture as a basic condition for future agricultural development.

The programming of outputs of industrial origin was integrated into a national aggregate in three broad categories—primary, secondary, and tertiary—and the respective growth rates of these sectors were set at 3.0, 7.2, and 7.2 per cent. per annum. The basic figures of domestic national product by industrial breakdown is as follows (Yen 100 million in 1956 prices) :

	1956 (a)	1962 (b)	b/a (%)
Domestic national product	74,136 (100.0)	108,110 (100.0)	145.8
From primary sector	14,186 (19.1)	16,940 (15.7)	119.4
From secondary sector	31,019 (41.8)	47,170 (43.6)	152.1
From tertiary sector	28,931 (39.0)	44,000 (40.7)	152.1

Note: The figures in brackets indicate composite percentages. The 1956 figures are not actual but are normalized by smoothing fluctuations. Normalized figures were used in compiling the whole programme.

The increasing rate of production in agriculture which, together with forestry and fisheries, represents most of the primary sector, was

programmed at 3.3 per cent.—less than half those of the other sectors of the economy. Thus the composite ratio of primary industry will diminish from 19 per cent. in the base year to around 16 per cent. in 1962, despite a composite ratio of labour as high as 39 per cent. in the latter year. This does not necessarily imply a great imbalance of the rate of increase of productivity as between the primary and the other sectors, as the amount of employment will increase rapidly in the latter, while in the former it will decrease by 0.85 million, as I have already mentioned. Thus the estimated increase in productivity in the primary sector is 25.6 per cent. over the base year, occupying an intermediate position between a 34.2 per cent. increase in the secondary sector and a 24.8 per cent. increase in the tertiary sector during the planned five years.

For farmers' incomes the plan has made no definite estimates. According to our own estimates, the real income (including income from non-farm jobs) of the average farm household was almost equal to that of the average urban worker's household in the base year. (However, the amount of labour input in the farm household was estimated to be much larger than that of its urban counterpart.) Therefore, it may be said that if the programme is successful in raising productivities in the relationship mentioned above, farmers' relative incomes will not decrease substantially during the years under the plan.

The production targets were approached by estimating both the possible area of crop planting and the average crop yield per unit area. The cultivated land in 1962 is estimated to be 5.87 million hectares—an increase of only 0.12 million hectares over the base year. However, progress in agricultural techniques and the development of land improvement projects will make it possible to promote some double or multiple cropping systems. The ratio of land use (which is 2 in the case of double crops) was 1.38 in paddy fields and 1.51 in upland fields in 1956. In 1962, it will be raised to 1.42 and 1.60 respectively. Thus the total crop plant area will increase by 6.4 per cent. during the period. Crops such as soyabeans, corn, fruits, rapeseed, sugarbeet, green manure, and forage crops will greatly increase their areas of cultivation, while wheat will show a decline and rice will remain almost the same as in the base year. All these programmes were compiled by taking into account different situations from district to district on the basis of past trends and expert judgements of the effects of planned measures.

For estimates of average crop yields per unit area, the past normal trends were carefully extrapolated to the planned period, crop by

crop, with some modifications according to the specific prospects of introducing new techniques or land improvement projects, &c. Thus it is estimated that upland rice, wheat, barley, sweet potatoes, potatoes, soyabeans, corn and sugarbeet will show an increase of more than 20 per cent. in 1962 over the normalized yield in the base year, while paddy rice, the biggest crop, is estimated to increase only 7.8 per cent. in its yield per area. Corresponding to the increase of production of forage crops and of imports of foodstuffs, the number of livestock is expected to increase rapidly, with the exception of horses. Dairy cattle, in particular, will reach twice the base year numbers and other livestock will also increase by more than 50 per cent. This, together with various technical improvements, will lead to an epoch-making increase of livestock products towards 1962—for instance, a 123 per cent. increase in milk, a 28 per cent. increase in meat, and a 58 per cent. increase in eggs.

These individual targets are then aggregated in terms of a production index number, according to which the increase of farm products is 14.6 per cent. and that of livestock products 62.6 per cent. over the normalized base year production level. This means that the annual rate of increase of agricultural production as a whole is projected at 3.3 per cent. In view of the fact that the corresponding average realized in recent years was estimated to be between 2.5 and 3.0 per cent., the planned target shows a little more acceleration which is supposed to be achieved by putting particular stress on the expansion of livestock farming.

The inputs to agricultural production in recent years have been increasing—particularly farmers' expenditures for various intermediate goods such as machinery, livestock, chemical fertilizers and insecticides. Accordingly, the net income ratio (the ratio of net product to gross product) of this sector has shown a tendency to decline, since there have been no counter effects from changes in the terms of trade between the agricultural and non-agricultural sector. In spite of this fact, the growth rate of agriculture in terms of net products was determined by the plan to be the same as that of gross production—namely 3.3 per cent. per annum. This was based on a policy decision: the official report of the plan stated that policies to promote measures for supporting agricultural prices, rationalization of marketing, more efficient utilization of capital equipment and so on should be encouraged for this purpose.

In projecting demands for food and other agricultural products these three factors were used: increasing rate of total population, increasing rate of *per caput* real income (on average 5.7 per cent.), and

estimated income elasticities of main individual items. The items for which *per caput* demand will increase slightly or be almost unchanged (not more than 15 per cent. above the normal level in 1956) are rice, wheat, potatoes, starch, vegetables, whale meat, fish and shell-fish, soyabean paste and sauce. The demand *per caput* will decrease for such items as barley, miscellaneous cereals and sweet potatoes, although the use of these for feeding livestock will increase. On the other hand, the demand will increase rapidly (more than 20 per cent.) for such items as fruits, meat, milk and other dairy products, eggs, sugar, edible fats and oil. In particular, *per caput* consumption of milk and other dairy products will increase by 77 per cent. during the years under the plan. The data for income elasticities were derived both from urban and rural family budget surveys, and their weighted average figures were used on the assumption that there will be no substantial changes in these relations in the near future. Price elasticities of demand were not considered in this connexion as it was assumed that the relative prices of the commodities concerned would be almost unchanged throughout the whole period.

In summary, the calorie intake per person in 1962 will be 2,200 per day—3 per cent. above the level in 1956—but the increase of protein and fat is noticeable: from 65.1 to 68.0 grammes in protein and food intake. These are mainly the results of demand projections based on recent trends, so that the problem here is to maintain this desirable tendency in the future. As a first step, the projection of demand and the estimation of production were worked out independently. After that, adjustments between demand and supply were made by reducing the amounts demanded or supplied where there was no possibility of adjustment through import or export programmes.

Despite the fact that 40 per cent. of the total labour force is occupied in agricultural production, the Japanese economy depends to a large extent on the imports of farm products—not only textile raw materials such as cotton and wool, but also food and animal fodder. The problem whether it is more 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 the economic programming.

In the former *Economic Self-Support Plan*, the production targets for agriculture were set so as to increase food production sufficiently to meet the increase in domestic demand during the period, the purpose being to keep the amount of food imports at the normal base year level. This, in a relative sense, was a self-sufficiency programme. The new plan stresses primarily the importance of increasing both

agricultural productivity and farmers' incomes, so that some increase in imports of main food items, such as rice, wheat, soyabean, sugar and corn, was mapped out. Thus, the import of all farm products is expected to increase 9.7 per cent. (from 589 million dollars, average, in 1954-6 to 646 million dollars in 1962), in addition to the planned increase in the domestic supply. However, the ratio of imported farm products to total imports will diminish from an average of 21.5 per cent. in 1954-6 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 planned targets of the economy. The export of farm products, together with those of forestry and fisheries, is designed to contribute to the maintenance of the international balance of payments. These exports, as a whole, are expected to increase by 27.6 per cent. (from 349 million dollars in 1956 to 446 million dollars in 1962). However, since the expansion of total exports is expected to be as high as 80 per cent. during the period under the plan, the role of the primary sector in exports will diminish relatively.

Such aspects of agriculture in relation to international trade were projected within the framework of the structural changes in demand for the supply of farm products.

The over-all plan involves an estimated annual amount of gross domestic investment needed to carry out the targets, of Yen 3,718,000 million, or 28.5 per cent. of the gross national product in 1962. In view of the fact that the rate of gross national savings in the past several years previous to the plan was estimated as 24-27 per cent., this rate of investment seems to be somewhat ambitious.

The estimated amount of private industrial equipment investment, which comprises the largest part of total domestic investment, was based mainly on the incremental capital coefficients calculated on an industrial basis. These were not officially made public. But, according to our own calculation, based on the same data for 1952-5, the coefficients of equipment investment were estimated as 2.6 in the primary, 3.2 in the secondary, and 1.6 in the tertiary sector, resulting in a national average of 3.0, including government investments. The private equipment investment for the primary sector in 1962 is expected to reach Yen 248,000 million, or 12 per cent. of the total amount above-mentioned. This is a slight decrease from the percentage in the base year. It suggests a relative increase in investment for agriculture which was expected to be supplied mainly from private savings in this sector.

As to government investment in various sectors, no breakdown was made public. Within the framework of total projected invest-

ment, the plan calls for Yen 678,000 million in 1962, or about 25 per cent. of the total equipment investments. Allocation is entrusted to the annual plan. However, for the investment in land improvement and land reclamation projects it was estimated that government investments needed during the years 1958-62 would be roughly Yen 230,000-300,000 million in total.

The role of the Government in leading towards a better allocation of investment among various sectors of the economy is the most important matter for the implementation of the programme. The planning procedure of the Japanese economy and therefore of her agriculture appears to be weak at this point, as the long-term targets of government investment for basic sectors are rather vague.

(c) ISRAEL

L. E. SAMUEL

Ministry of Agriculture, Israel

I MUST begin by describing a number of characteristics of our agriculture. Planning is being carried out in order to attain certain production targets intimately linked with increased settlement on the land. These targets were quite different during the period starting late in the nineteenth century and ending with the establishment of Israel in May 1948, from those adopted since 1948. However, the earlier conception of agricultural policy had and still has a considerable impact on the policy decided upon and put into effect during this first decade of our independence.

Within the earlier pre-state period we should differentiate between two periods, the first lasting from roughly 1890 until 1925, and the second from then until 1947-8. The first period, under the guidance of the famous Rothschild family, started agriculture for Jewish settlers by setting up villages and farms largely on the indigenous pattern. There were cereal farms, olive-almond and wine plantations; the first citrus plantations were begun and generally financed by private capital, whereas the Rothschilds gave generous settlement budgets to the farmers, as well as assistance in meeting current expenses in many ways. Today the rather small number of Rothschild settlements are generally quite well off but, apart from the production of wine-grapes, their output constitutes only a very small percentage of over-all production. Citrus plantations still form an essential part of the resources of older settlements some of which today are small towns.

The agricultural policy during the two decades between 1925-6 and 1945-6 is still clearly recognizable in today's policy targets—in part because a number of leading personalities in agriculture are still active in authoritative positions, in part for inherent reasons.

This policy was designed by the late Professor J. Elazari-Volcani, who was the first and for long years the only member of this Conference from our territory. He was convinced that the Jewish farmer had to build up diversified farms or to plant citrus plantations in a way that would stand competition from indigenous farms throughout the Middle East on the local market and, for citrus fruits, also competition in the world market, or more precisely throughout Europe.

Owing to the scarcity of land in Jewish possession during that period, we planned in the first place fully irrigated small farm units of $2\frac{1}{2}$ -3 hectares on which high pedigree cattle and poultry had to be maintained, and a crop rotation introduced for green fodder, vegetables and potatoes as well as peanuts or irrigated corn. A small part of the land was generally set aside for plantations. On such farms, dairy farming grossed 40 per cent., poultry farming and vegetables each 20 per cent., the remaining income being derived largely from various kinds of fruit and to a small extent from field crops. Only on partly irrigated and entirely unirrigated farms were cereals and hay grown, but the majority of these farms were established in some northern districts of the country where the rainfall is far higher than in the coastal plain and further south.

Right up to the present the production of perishable protective food, such as milk, eggs, vegetables and fruit, as well as carp from ponds and, more or less as by-products, beef and poultry meat, have formed the backbone of diversified farms, although during the last three years or so the production of industrial crops has become substantial. But, in some major aspects, targets in agricultural policy have nevertheless changed. During the earlier period, settlement on the land, at a decent although modest standard of life, formed an end in itself, apart from that of providing food for the urban population. The agricultural settlements gradually supplied Jewish urban consumers with essential food but, in terms of money, the share in total supplies amounted only to one-third by 1939-40 and to one-half by 1946-7. In terms of calories, the percentage was even lower. The question of the trade balance in agricultural commodities did not arise in Palestine under the British Mandatory Administration because Palestine's currency was fully covered by the Pound Sterling. With the establishment of the State of Israel this position changed overnight.

Turning now to our agricultural policy since 1948, this currency

issue is one of two factors which still have a very large influence on production targets. The other concerns the fodder basis for the live-stock industry, which still provides almost 60 per cent. of the gross income on diversified farms compared with some 65 per cent. in the earlier period. One of the first and most urgent tasks of the Israel Ministry of Agriculture was to expand rapidly production of feeding stuffs. Until 1946-7, a very large proportion of fodder—about 70 per cent.—was purchased from indigenous farms in Palestine and surrounding countries. Today only 30 per cent. is imported.

The desire to reduce imports and to expand exports cannot astonish anybody who knows that Israel has an adverse trade balance of over 300 million dollars a year for a population which just surpasses two millions. Such a trade deficiency is probably unique, but I am not going into this issue which lies outside our subject. I shall only state that imports of food cost \$70 million, but that, on the other hand, citrus-exports almost equal this amount.

With this in mind, official production targets, until 1955, were full self-sufficiency but for wheat; and a stimulus to exports, even if considerable export-premiums were needed, was given throughout. Only during the last two or three years it has been gradually, although not yet fully, recognized that, in the long run, the economics of import-replacement as well as of export expansion must be carefully weighed, because of two dangerous effects otherwise unavoidable: (a) Import replacements regardless of differences of prices are bound to increase the cost of food to the urban consumers who must therefore strive for higher wages, and whose purchasing power for industrial goods is reduced, or (b) heavy consumer and export subsidies must be granted which the urban population will have to bear to the extent of almost 90 per cent. In this respect export expansion has the same consequence. Agriculture does not yet provide a full living for more than perhaps 12 per cent. of the population. Nevertheless, and partly to bring more people on the land, a rather ambitious programme for the production of sugarbeet, peanuts and cotton was adopted and in part put into effect. With regard to peanuts, it was already becoming obvious that production is so expensive as virtually to prevent processing into margarine and cooking fats which was the main goal. But a considerable export of table peanuts developed. Concerning sugarbeet production, economics would dictate a limitation to requirements of the industry. Only cotton seems on the way to being produced at reasonable costs, and perhaps a small export of the long staple variety may be initiated and may prove an economic proposition.

Turning now to procedure in agricultural planning, it is obvious that the targets of policy have a decisive impact on the organization of our planning as well as on the methods used. The more technical side is done in the Agricultural Planning Centre, an Institute which is directed and financed by the Ministry of Agriculture and the Settlement Department of the Jewish Agency. The Agricultural Planning Centre prepares blue-prints for new settlements or additional farms in already existent settlements, adjusted to the special conditions prevailing in the different parts of the country. It devotes much time to the design of new farm types with the aim of increased over-all efficiency. Its most difficult task is to keep planning on a scale related to market conditions, whilst simultaneously safeguarding a certain minimum standard of life for the farmers. It is easier to take notice of available resources, but also in this field there are difficulties which must be permanently kept in mind. Available labour resources are never known in advance in Israel where fluctuations in immigration have been pronounced during the last decade. Another difficulty is involved in the estimates of water resources. Very often, earlier estimates have had to be revised. Financing has proved comparatively easy so far, because in this respect settlement on the land has a first priority, and huge investments in settlement have indeed been made. The layout of settlements and of farms is entrusted to the Settlement Department of the Agency which has a large staff trained in administrative matters and also a large staff of farm instructors.

The integration of economics into this planning is the job of the Division of Economic Planning in Agriculture, the director of which holds the position of Economic Adviser to the Ministry of Agriculture. An inside knowledge of the work of this division will complement the brief explanation I gave of the activities of the Agricultural Planning Centre. In this circle of Agricultural Economists it seems indeed justified to discuss in some detail the job of this research unit which is scarcely three years old. It was established on the initiative of Dr. A. G. Black who, over a long period, was an adviser on agricultural planning to my office on a Food and Agriculture Organization assignment.

The Division has two sections, one dealing with the marketing side, agricultural policy proper, prices, subsidies, and the role of agriculture within the national economy. The other is in charge of farm management, costs of production and agricultural credits.

The foremost job of the marketing section is to determine the absorptive capacity of the markets for locally produced farm commodities—food and fibres—at prices which cover reasonable costs of

production. The local market absorbs about 85 per cent. of supplies, if citrus is left aside. Correspondingly intensive research on domestic market conditions is of great importance. Concerning export markets, citrus is so far the only commodity with a very large market abroad and some 70 per cent. of production is exported. Table-peanuts, table-grapes, bananas, melons, flowers, and certain vegetables and seeds are sold abroad in increasing, but still small quantities.

Great attention has been paid to the problem of the purchasing power of consumers for food. A food basket was designed which tries to reconcile this aspect with that of an optimal agricultural development. This has been quite a delicate job, and now a study of food expenditure by 6,000 families split up into ten income groups according to their income *per caput* is under way. The purpose of this study is to initiate a nutrition policy, complementing agricultural policy. In this respect I might add here that the blending of occidental and oriental food habits into a national diet constitutes a most interesting target and the basis for a quite original nutrition policy. The calculation of such a food basket, both in terms of *per caput* consumption of all essential foodstuffs and in terms of prices to consumers, had to be based on detailed studies of all major markets. Moreover, the nutritive value of the total basket has to be taken into account.

With regard to all foodstuffs, the Section for Farm Management was requested to provide information on reasonable costs of production which were then compared with c.i.f. prices in the case of bulk commodities like wheat, fodder-cereals, oil-seeds, and sugar. Concerning perishable protective foodstuffs, such as milk, eggs, vegetables and fruits, the decisive factor was the level of actual costs on fairly efficient farms. Only the lowest costs reconcilable with local conditions can assure optimal consumption levels, and that means the broadest markets. Over a number of years, farm inputs and outputs were carefully determined for a wide range of farm types in order to get a reliable picture of the costs of farm operations.

The two sections of the research units are complementary in many ways; notably in the question of prices. Also, however, there are quite different tasks. The marketing section must attend to policy questions proper, both in short-term and long-term policy, and it must also care for consumers' interests and those of the national economy as a whole. Such recommendations are forwarded to the Minister of Agriculture. In the farm-management section, recommendations must be made on the design of new farm types and on

new and more efficient possibilities in the combination of farm enterprises. These recommendations are presented to the Agricultural Planning Centre.

Another major issue in both policy and planning is the assistance needed for new farms to bring them as soon as possible to an economic scale of operation. They constitute 40 per cent. of the farms of the country and produce about 35 per cent. of the produce. The settlement agencies, notably the Jewish Agency, cannot provide the new settler with a fully equipped farm, both for psychological and for financial reasons. Generally he receives roughly half the living and dead equipment and only between 40 and 60 per cent. of the water needed. He must complement farm income with outside income. If this transition period of building up the full farm is too long, he is often discouraged and leaves the land for urban areas. This is so, although he receives a generous gift in the form of a long-term loan, at a very low rate of interest, payment of which starts only after several years. Private capital is available only for citrus plantations. Pronounced differences in the standards of living prevail as between older and younger settlements, and certain subsidies for young farms are taken into account in the planning stage.

The Economic Planning Division has also to prepare policy recommendations on price policy in general, and that includes guaranteed or support prices as well as the subsidies involved in maintaining certain price levels. Guaranteed prices cannot be avoided for a range of major commodities, if production targets are to be reached in fairly short periods. We are trying to meet two conditions in this direction: the first is to base guaranteed prices on reasonable and not on the highest marginal costs. The second is to limit guaranteed prices more and more to a few products only—among them milk, wheat, and some industrial crops. At present many vegetables and eggs also enjoy guaranteed prices, but these will be abandoned.

I may conclude by saying that I do not think that we have yet reached a satisfactory level in our planning for agricultural development. Many issues have not yet been clarified. But we keep trying to improve on our methods and not to lose sight of over-all economic targets. Agricultural issues should never be reviewed without taking into account the general economic situation. It follows that assistance given to agricultural development should stand in a reasonable relation to that given to industry, trade, communications, and public services. Only in recognizing this limitation can a realistic policy be designed and put into effect. In Israel, agriculture, binding people to the land, will always enjoy a high priority in the distribution of

available resources. But, we have to be resigned to the fact that it will provide a living for only 15 or 20 per cent. of the population. The agricultural economist should present his recommendations on future developments with this in mind, and he should avoid becoming a representative of farm interests only. This danger is inherent in his position, but in the long view, the national economy as a whole will decide the scope for agriculture, even where, as in Israel, the return to the land of an almost entirely urbanized people has been a foremost target of policy.

(d) UNION OF SOVIET SOCIALIST REPUBLICS

I. S. KUVSHINOV

Moscow, U.S.S.R.

THE development of the Soviet national economy is founded on objective laws of economics. The economy is built upon a socialist foundation where the means of production are in the hands of the people, where there is no exploitation of man by man, and equal pay is issued for equal work irrespective of nationality, race, or sex. The scientific cognition of the objective laws of economic development facilitates planned management of the entire national economy. In our conditions the plans are the major instruments ensuring a regular, well-balanced development of the national economy, providing the utmost continuous growth of the productivity of social labour, the fullest utilization of the production forces, and the satisfaction of the growing requirements of socialist society. Socialist planned economy ensures a regular development of science and engineering in conformity with the requirements of the national economy and of its branches. Social ownership of land and of other means of production have not only rendered the planning of agricultural production a necessity, but also a possibility. Our country, in a brief period of history, has carried out extensive work in elaborating the most modern forms and methods of management for the national economy and for the over-all business life in the country.

The basic principles of management for the economic life of a country which has taken the road of socialism were worked out by Lenin, the founder of the Soviet State.

From the very inception of the socialist system of economic relations it was necessary to devise such an organization of labour, and such forms of production management as would correspond to the

objectives of progressive, large-scale machine production, and at the same time be in keeping with the new socialist relations of production, which would ensure the participation in managerial work of the masses of people who became the masters of the country.

Lenin foresaw that there never could be once for all forms of management for the national economy. The forms, as has been proved by our experience, may vary, but there is the basic steering principle that should be adhered to in the management of social production at all the stages of socialist construction—democratic centralism. The essence of this principle in the domain of planning consists in the fact that planning gives the perfect balancing of the constructive activity of the producers themselves and the planning leadership on the part of the State. The producers, in the plans of separate enterprises, collective and State farms, themselves reveal the potentials for further development of production and define the conditions necessary to bring it about.

The State, acting in the interest of over-all national development of the U.S.S.R. and the uplift of the economy in the national republics, determines the economic objectives for each area of the country with due consideration of its natural and economic conditions. Moreover, the fulfilment of these objectives is always backed by the necessary material resources of the entire State. This balancing in the planning of national economic development is possible only in a socialist society, which is devoid of antagonistic contradictions between the State and the producers.

Centralism in a democratic sense presupposes the possibility of full and unhindered development not only of the local potential, but also of the local initiative. Thanks to the planned development of the national economy, the Soviet Union has turned in a comparatively brief period from an agrarian country into an industrial one by directing all the necessary resources, particularly for the priority development of heavy industry and machine building. This helped to settle the problem of equipping agriculture with modern machinery and on this foundation to carry out the reconstruction of agriculture, combining millions of small farmsteads into big agricultural co-operatives—the collective farms—and creating a ramified network of State agricultural enterprises—the State farms.

The planned economy of the Soviet Union is progressing confidently, being free from crises and anarchy in production. The basic economic objective—to overtake and outstrip in a historically brief period the most developed capitalist countries in *per caput* output—is being successfully implemented.

Thanks to the planned method of conducting our economy we have the opportunity of directing, at every stage of agricultural development, the material funds and the manpower to complete first and foremost those tasks which are the basic ones at any given stage. Here are several examples.

(a) During the first stage of putting the private farmsteads on a collective basis, the main task was to equip them with modern machinery. Under the early conditions, when the collective farms were small and economically weak, when they did not have the necessary funds to purchase complex machinery, and when the machinery was not available in sufficient quantity, the State undertook the establishment of State machine and tractor stations. These stations had the task of servicing the collective farms not only with machinery but also with the necessary agronomical, organizational, and other requirements. The machine and tractor stations were maintained at the expense of the State, while the collective farms paid them in kind for the work done. They were paid in grain or other products, the payment amounting to a small portion of the overall harvest.

When the collective farms became capable of purchasing this complex machinery and when industry was in a position fully to satisfy the demand of the collective farms for this machinery, the State, in 1958 adopted the method of selling it directly to the collective farms, and it reorganized the machine and tractor stations into repair and technical stations.

(b) When the State set the task of radically increasing the national production of cotton to meet the consumer demand for cheap fabrics, it allocated substantial funds to carry out large-scale irrigation work in the Central Asian Republics, thereby making it possible to extend the cotton sown areas in these districts. It also earmarked large amounts of mineral fertilizer covering the full requirements of the areas sown to cotton; and provided for the cultivation of the crop by modern machinery. As a result, the cotton yields increased in a comparatively brief period from 10·8 centners per hectare in 1913 to more than 20 centners per hectare; the over-all gross cotton production increased from 0·74 to 4·33 million tons, and the U.S.S.R. became one of the leading producers of this valuable raw material.

(c) In 1953 when the task was set for a radical development of agriculture and particularly of animal husbandry, the prime objective was to augment substantially the production of grain for animal husbandry and for supplying the industrial crop cultivation areas. There were various ways of doing this. However, the most swift and

economically expedient way was the development of great areas of virgin and long fallow lands in the eastern districts of the country. With this in view, the State worked out a programme of virgin land development and, in keeping with it, 36,000,000 hectares were developed in three years. Large quantities of machinery were directed to these districts, including 267,000 tractors, 110,000 grain harvesters, and 53,000 lorries. At the same time the Government addressed an appeal to the young people to volunteer for work in the virgin land areas. 350,000 young people and a great number of experts responded and volunteered to work there.

Here is another example.

It has been proved by experiment and practice that differentiated grain harvesting makes it possible radically to cut harvesting losses and to obtain an additional yield of from 1 to 2 centners per hectare. With this aim in view the State had planned the production, at a number of plants, of a large number of mowers and pickers for combine harvesting. While in 1956 the differentiated method of harvesting was practised on not more than 18 per cent. of the entire area under grain crops, in 1958 it was used for the harvesting of 80 per cent. of grain crops in the Russian Federation and for 75 per cent. in the Ukrainian Republic. In 1958 the collective and State farms are taking in a fine harvest of cereals and other crops over practically the whole country. The country will receive more grain than in the peak year of 1956, when it obtained 61.2 million tons of marketable grain. The production of milk, meat, butter, and other livestock products is increasing. The most modern machinery and the most progressive methods of farming are being introduced in keeping with the plan.

A variety of other examples may be cited when the State taking advantage of planned management and making use of the necessary resources of the country, has swiftly solved big nation-wide problems to bring about an over-all increase in the output of farming produce and to improve the welfare of the people.

The Soviet national economy, which is founded upon social ownership of the means of production, requires centrally planned guidance. However, without democratic centralization it is impossible to ensure that the entire national economy is balanced and developed in the interests of the working people. The principles were first used in industry, where rapid advancement, especially of heavy industry was the key to the socialist reconstruction of agriculture.

When private and small farming was the predominant practice from 1918 to 1928, direct planning of production was impossible. During that period the Soviet State had directed the development of

agriculture through such channels as the price policy, the policy of credits, taxation, machinery supply, the supply of mineral fertilizer; also by other material and technical means, and through the channel of farming produce procurement systems. Direct planning of agriculture became possible, and *The Plan* became the backbone of the development of agricultural production, only when the collective farm system triumphed—when the State-owned enterprises (State farms) and the co-operative agricultural enterprises (collective farms) were established. At present Soviet agriculture includes 78,000 big collective farms, 5,800 State farms, 3,445 repair and technical stations, and 2,300 machine and tractor stations.

The forms of State planning for agriculture changed and improved with the development of agriculture itself and with the consolidation of socialist economy. At the initial stage of the collective farm development, when the collective farms were not strong enough either economically or organizationally, the system of agricultural planning was distinguished by excessive centralization. The paramount expression of this feature was that the State plan for each collective farm, each State farm, and each machine and tractor station specified the size of the areas to be sown to various crops, the harvest yield, the head of cattle and its productivity, the volume and types of tractor work to be done, and the agro-technical and the zoo-technical measures to be taken. At a certain stage of development this system of excessive centralized planning began to contradict the aim of continuous development of agriculture and became a handicap to the economic initiative of the workers. The system was altered in 1955, and the State now exercises control over the production of the basic products only to the extent of ensuring the quantities necessary to supply the towns and industrial centres, to cover the needs of trade and to build up the necessary reserves. At the same time, broad scope is given for the exercise of initiative by the collective farmers, enabling them to achieve a fuller utilization of all the opportunities of a given collective farm under the given local conditions.

There is great variety in the natural and economic conditions throughout the Soviet Union. Agriculture can achieve utmost productivity of labour, provided it is founded on a comprehensive study of all the peculiarities corresponding to the natural-economic zones, districts and every farming enterprise taken separately. What may be suitable and necessary at one place may be unfit and inefficient somewhere else. Therefore, consideration of the zonal conditions of production is of supreme importance for the elaboration of plans for agricultural development. Planning in our country has always taken

into consideration the natural and economic conditions of separate districts and collective farms. However, it is being continuously improved, and the methods of accounting for these conditions are being perfected.

The new system of planning for agriculture which was introduced in 1955 is designed to give the collective farmers and the workers on the State farms an opportunity to take into fuller consideration the peculiarities and the potentialities of every collective or State farm. When this system was introduced, the rights and the role of the farms in planning became much greater, while the role of central agencies was restricted to the elaboration of only a narrow range of indicators. Thus, the collective farms now decide for themselves the types of production on which to concentrate and the amounts they should produce. They approach these questions first of all from the point of view of expediency and economic advantage. In its turn the State encourages the production of certain farming goods by fixing a scientifically elaborated system of prices, credits, capital investment and material and technical supply. The plans of collective and State farms are used as the basis for the compilation of general annual plans of development as well as plans for longer periods which are a part of the over-all national economic programme. This system has widely tapped the initiative of the collective farmers. It became possible because the collective farms grew stronger and because the socialist consciousness of peasant-collective farmers and collective farm managers has advanced to a higher level.

Another important feature of socialist agricultural planning is the presence in it of two forms of social property—the State and the collective farm-co-operative property.

The State farms, the repair and technical stations, and the machine and tractor stations are State property. For the State farms the State programme fixes the basic targets of work, the volume of marketable output, the number of staff workers, and the wage fund. It also fixes the production costs and allocates the necessary funds and material resources. The State establishes the volume of work that the repair and technical stations and the machine and tractor stations should carry out on the collective farms which they service. It also establishes the cost of the work, and allocates the necessary means to carry it out.

It is a different matter with regard to the collective farms. In this case every farm itself plans the development of its socially owned economy. The State programme fixes only the amount of marketable farming produce which the collective farm sells to the State.

The new system, as has been shown by experience, facilitated

a substantial development of the initiative of collective farmers, workers of State farms, and experts in agriculture, to achieve the fullest utilization of resources in order to increase the output of agricultural produce. The development in the collective farms under the conditions of the new planning system followed the line of further specialization of separate areas of the country and the extension of production of the most economically efficient farming branches for the specific peculiarities of a given locality. The development of virgin and long fallow lands in the eastern areas of the country is of great importance for grain crop cultivation. This in turn creates the opportunity of extending the area sown to sugarbeet in the Ukraine, the North Caucasus, and in the Central Chernozem areas; it has also made possible the consolidation of the fodder base for animal husbandry in the Ukraine, in the Baltic Republics, in Byelorussia, and in the central areas of the Russian Federation. It has given an opportunity of extending the areas sown to cotton in Central Asian and Transcaucasian Republics, and of accelerating the development of orchard growing and viticulture in the Kuban, in the Crimea, in Moldavia, and in other areas of the country. When the plans are worked out, particular attention is paid on collective and State farms to the correct combining of the crops and breeds of cattle. Consideration is given to the quality of the soils and to the introduction of new farming methods, which in turn facilitates better use of the land, the machinery, the manpower and all the available resources of a given enterprise. It enables every farming enterprise to cultivate the crops and to breed the cattle which are economically most suitable for the specific natural and economical conditions.

Work has been done during the last few years to determine for every natural-economic zone, and for every separate enterprise, the most rational scientific pattern of farming in order to augment the productivity of labour and to achieve the utmost yield per unit of land. The elaboration of farming and cattle breeding patterns for every natural economic zone, every republic, region, and district, makes it possible to use more fully the achievements of science and progressive practice in agricultural production. This is promoted by a broadly ramified network of research institutes, experimental stations, and model farming centres.

The problems of planning supplies of materials and machinery for agriculture are of particular importance. The planned supply of new machinery acquires a particularly important role at this stage when the collective farms have the opportunity of purchasing the machinery which is necessary for them and which is most efficient for their

specific conditions. The collective farms themselves present the preliminary request lists for the necessary machinery. They are compiled and used to establish the planned targets for the industry and to work out the plans for material and technical supplies for the collective farms.

The planning is conducted with due consideration for the future development of the collective farm system and the reorganization of the machine and tractor stations. Obligatory deliveries and payment in kind for the services of machine and tractor stations have been discarded, and prices and conditions of produce procurement have been changed.

The Soviet system of planning is based on long-range programmes, and is founded on the programmes worked out by the enterprises, construction projects, councils of national economy for economic-administrative districts, collective and State farms, and the local soviets of working people's deputies. The long-range plans for the succeeding five or seven years make annual provisions for agricultural development. When a programme for agriculture is worked out consideration is given to the necessity for the maximum increase in the production of farming goods to meet the consumers' food demand and industrial needs for agricultural raw materials, for stockpiling the necessary national reserves and for export funds.

The following basic features in particular are taken into account when long-range plans are worked out:

(a) Improvement in the distribution of types of farming and the correct specialization of certain districts with due regard for the natural and economic conditions of the agricultural zones of the country.

(b) Continuous improvement of mechanization and electrification standards in all branches of farming by further development of integrated mechanization.

(c) To reveal fully and to utilize to the utmost advantage the available reserves in order to increase the output of farming products, and to increase the productivity of labour and other resources.

(d) Large-scale introduction of the achievements of agricultural science and progressive experience as the foundation for the continuous improvement of farming and cattle-breeding.

The following basic indicators are provided for the elaboration of programmes for farming and forestry development:

1. The volume of State procurement of farming goods and raw materials.

2. The estimates and balances of grass farming and animal husbandry products.
3. The estimate of requirements in tractors and other agricultural machines, mineral fertilizers and chemicals.
4. The development of electrification in farming, the employment of electric power for production and other purposes, the employment of power and water resources of big capacity hydro-projects with a view to increasing the harvest yields and the production of cheap farming produce.
5. Irrigation, reclamation, and watering of pastures.
6. Forestry.
7. Development of new lands.
8. The balanced estimate of collective farm incomes and expenditure.
9. The output per 100 hectares of farm land per head of population.
10. Productivity of labour in agriculture.

In order to achieve an economic foundation for the compilation of plans, estimates are made of the gross output, of the material expenditure, gross income, and yields of products per 100 hectares of farming land, which together describe the economic efficiency of farming production for a Union Republic, for a region, a district, and a separately considered enterprise.

When the long-range programmes are compiled, consideration is given to the farming development data covering the previous years and the target data of the base year; and with due regard to these principal data the targets are set for the years covering the period of the long-range programme.

The planning of farming production begins directly at the collective and State farms with broad participation of all the workers in agriculture. The State plan for the development of agriculture in relation to these farms provides only for the volume of goods to be sold by the collective farms and delivered by the State farms to the State resources with due consideration for the food requirements of the population and the needs of industry for agricultural staple goods. When a State-planned target is determined for the procurement of farming goods, a balance is compiled of the gross national farming resources and of their distribution along the consuming channels. At the same time a balance is elaborated for the seeds, the fodder, the fertilizers, &c. The balance method makes it possible to attain a correct co-ordination of the development of agriculture with that of industry and other branches of the economy, and also to co-ordinate

the operation of individual farming branches. This helps to avoid disproportional development.

At present, under the new conditions when the collective farms themselves purchase machines, much attention is paid in planning to the correct utilization of machines, to material and technical supplies, and also to the elaboration of request lists for material and technical supplies. The collective and State farms present their requests for machinery, fuel, lubricants, and other materials to the repair and technical stations, which in their turn send them to the agricultural and planning agencies. Thus, the over-all plan for agricultural material and technical supply is formed.

The correct utilization of the advantages of planned socialist farming helps the collective and State farms to put into operation all the available reserves, to achieve a greater productivity of labour, to increase the production of farming goods, to reduce their cost, and to create the necessary accumulations for extended socialist reproduction.

R. AKTAN, *University of Ankara, Turkey*

The first three countries described (and I shall restrict my comments to them) have very different natural, social, and economic conditions. Among other things, the role of agriculture within their economies is of varied importance. However, there is at least one important similarity amongst them, namely that they have all been spending great efforts on economic development, and in doing so have resorted to fairly elaborate plans covering many sectors besides agriculture. A further similarity is that free private enterprise is the main basis of their economy, so that planning has been by indirect controls without destroying the market pricing system. But there are striking differences which deserve to be pointed out briefly. For one thing, the special goals vary somewhat in accordance with the needs and specific conditions of the respective countries. This, of course, makes the scope of the plans, as well as the ways and means which are used in reaching the specified goals, vary from one country to another. In the case of Israel, for instance, the scope of the plan covers practically the entire field of agricultural activities farm by farm; and the State provides, wherever possible, great allocations of all the necessary means for its implementation. In India only the main branches of production are planned, the State providing a suitable environment and the initial push for a higher output. In Japan planning aims essentially at providing some guiding principles for bringing about well-balanced economic growth, the State involving itself as little as possible.

Of the three countries India, no doubt, is facing the greatest hardships because of her essentially unbalanced and ever-deteriorating resource relationship and distribution, her enormous size, and the more tradition-bound nature of her rural people. In addition, two other factors, namely the urgency of the need for economic as well as agricultural development, and the rather ambitious goals set for agriculture in the Second Five-Year Plan, make the achievement of the aims more difficult. Thus, in these circumstances, in order to start and to assure continuity in agricultural development and to attain better results than those which were obtained in the past, it is necessary, probably, to give Indian agriculture a stronger initial push and to use stronger persuasion. For instance, fuller use should be made of irrigation systems provided by governments. A policy of price supports, I agree, does not do much good and may not be used efficiently and wisely in a nearly self-sufficient agriculture. Modest amounts of subsidies, however, if they can possibly be envisaged, may be used beneficially in order to bring about a wider adoption of newer and better techniques. The solution of agricultural problems in India will require great efforts and sacrifices, no doubt; and in the face of the limited amount of public and private financial resources available, a substantial foreign loan is greatly to be desired.

Japan's problem, essentially, is to keep the productivity of farming abreast of the rest of the economy, so that an unbalanced condition which might be generated from a more rapid development in non-agricultural sectors is avoided. In her agricultural plan Japan has a very modest aim and, considering her past experience and achievements, is very likely to succeed in reaching her goal.

Compared with these two countries, Israel has development problems of much smaller magnitude, and she is already ahead in solving them, although there is no end, of course, to improvement of any kind. The planners of Israel act very wisely in not trying to stretch the possibilities of agricultural production to the self-sufficiency level.

Certain facts and truths may be drawn from this comparative study of planning procedures in the three countries of the free world. At the present time 'the invisible hand' cannot even provide a smooth operation of economies, let alone attain a high rate of development. Thus, a balanced economic growth can be reached only by careful planning. Economic planning is needed much more by the newly developing countries, although it is more difficult there to plan and administer economic programmes, especially in the field of agriculture.

There is more than one way to plan an economy, and planning as

such is not necessarily inconsistent with democracy. This simple truth does not receive general recognition in some countries, including my own, and much harm is being done by wasting valuable resources and time. The experiences of many democratic countries prove that a nation may gain a great deal by adopting ingeniously prepared economic plans.

Planning or, more generally, policy-making necessarily involves three steps: (1) defining targets or objectives with a certain amount of compromise between various alternatives; (2) setting out the determinants, i.e. determining related factors and the interrelations among them; and (3) establishing an administrative machine to administer or at least control the factors; to enforce the policy measures; to maintain equity; and to finance the operations.

With regard to certain objectives of policy there is usually an accepted logic or theory, as in the case of price support programmes, where the outcome may be forecast with reasonable certainty. But when we deal with economic growth or with some economic relations over time, the objectives of the policy may be clear, but there is no accepted logic or theory, therefore there is no effective *a priori* analysis of alternative development procedures. Thus, administration must be more or less *ad hoc*, with no compelling basis for *a priori* choices among alternative plans. It is for this reason that we should perhaps allocate more resources to developing the theory or logic of economic development—a crucially important field which remains now more or less under-developed.

O. SCHILLER, *Institut für Agrarpolitik und Sozialökonomik des Landbaus, Stuttgart-Hohenheim, Germany*

If we analyse the programmes of agricultural policy in the different countries of the world we can observe certain forms which may be classified into three groups:

1. Indirect planning by means of agrarian and economic policies applied with the aim of achieving certain targets which are fixed only in terms of general principle, and not in terms of concrete figures.
2. Direct planning by one-year and several-year plans with fixed all-round and regional targets in terms of figures but without fixing plan targets for each individual farm.
3. Planning as the governing principle of totalitarian economy with one-year and several-year plans and with definite targets in terms of figures for the whole of agriculture and for each individual farm.

I would say that the planning principle as dealt with in the first three papers we have heard belongs to the second group. It is interesting to compare the methods applied and the results achieved in these countries with the experience of countries of the first group, where the principle of indirect planning prevails. It would be interesting also to make a comparison with the experience of countries belonging to the third group—specifically the communist countries where private ownership of the means of production has been abolished entirely or for the most part and planning governs economic life. Unfortunately Mr. Kuvshinov's paper was not included in the programme as originally arranged; it came as a surprise. But from Mr. Khrushchev's speeches we know something of the difficulties of Soviet planning. He has specially mentioned decentralization, and there are other interesting problems. The experience of the Soviet Union in this field is very wide, but I find it difficult in the time that is left to discuss their planning techniques. The difference in principle between groups 1 and 2 on the one hand and group 3 on the other is that in the first case planning is designed as an auxiliary measure for promoting and steering in a certain direction the natural trends of development which arise from incentives of the private economy, whereas in the other case agriculture is included in the framework of a totally planned economy of which the main objective has become the fulfilment of plan targets..

In considering specific difficulties of planning in agriculture, Dr. Anjaria mentioned that, in a country like India where the outcome depends so much on the monsoon, production trends can hardly be estimated except over a fairly long period. In a country like Germany the year-to-year fluctuations in yields are much smaller but they are still quite high—for instance, in vine and tree fruit production. The difficulties in planning resulting from instability of output are further aggravated by the low elasticity of demand, which is felt especially in those agricultural products which are produced in great quantities. Dr. Anjaria indicated another difficulty when he mentioned the lack of statistical data for a precise prognosis of the growth of demand, and Professor Ohkawa has indicated how such projections are made in Japan. Specific difficulties appear when larger proportions of imports and exports are involved, as described by Dr. Samuel for Israel.

The consumption of foodstuffs cannot easily be estimated beforehand nor can it be regulated except by introducing ration cards, as practised in some countries in war-time and in the post-war period. In countries with total planning the real difficulties in adapting a planned production to unregulated consumption are bound to

increase once the stage of general shortage in this, that, or the other product is overcome and the changing demands in nutrition, as described in Professor Cépède's paper, come into play.

In all the examples of planning given in the first three papers we can distinguish between long-term measures for directing and influencing the changes of agrarian structure and the short-term measures of price policy designed to direct production according to the needs of the national economy. An instructive example of both sides of planning was given by Professor Ohkawa. As to the long-term planning, Dr. Anjaria mentioned that India's plans have in view the building up of a co-operative structure. This structural planning may be easier in a country like Israel where, as Dr. Samuel has told us, the new settlement on land has played and still plays an important role. Programmes for the improvement of agrarian structure have also been developed in recent years in some European countries under the impression that modernization of agriculture does not correspond in pace with the quick progress of technology. It is intended, therefore, to accelerate this natural process through planned measures with certain targets in view such, for example, as an agrarian structure in which the family farm working without hired labour is predominant. Short-term planning also is known in European countries. In Western Germany, for instance, according to new legislation, a so-called Green Plan has to be produced every year. On the basis of investigations similar to those described by Dr. Samuel for Israel, where over a number of years farm inputs and outputs were carefully determined for a wide range of farm types, in this Green Plan all measures for the promotion of agriculture and the financial means for executing them have to be worked out. It is significant that the financial means asked for in this plan have increased from year to year.

Dr. Anjaria mentioned that in India a more clearly defined planning of prices and, perhaps, a system intermediate between complete free trade and full control is felt to be necessary. Obviously, in countries with a private economy the difficulty consists of deciding how far planning from above can go without violating the rules of the private economy, leading step by step to dirigism and finally to a total planning. It is a question of the right degree. Experience has shown that beyond a certain limit it is quite difficult to restrict planning to a tolerable degree. The tendency is for one measure of planning to lead to another.

Planning also has a tendency to become more and more comprehensive because of the human factor. Often, planners are faced

with psychological difficulties. For instance, planning which results in stabilizing or raising prices is generally welcomed by producers; but they are usually in opposition if it becomes necessary to take measures which lower prices. If the planners can be put under political pressure by producers, some measures which are recognized as useful and necessary may be omitted. The same applies if it is intended to restrict planning measures for which there is no longer any economic necessity. Usually it is easier to proceed towards rather than away from dirigism. It is, so to speak, a one-way traffic. If this inherent danger is not counteracted consciously, the procession towards a more and more comprehensive dirigism cannot be avoided.

There is still another psychological factor. The more comprehensive that planning becomes, the bigger becomes the necessary bureaucratic apparatus. Planning institutions have the tendency to develop on their own lines and may easily lose their contact with actual life. There are planners for whom the plan is no longer a means to an end but an end in itself. They are enthusiastic about their own targets and endeavour to adapt the realities to the plan instead of adapting the plan to the realities. If it becomes necessary to choose between giving up a plan target and achieving it by bureaucratic compulsion, some planners are inclined to choose the latter. The success of planning depends to a high degree upon the technical and human qualifications of the persons in whose hands the elaboration and execution of the plans are laid.

A. AMIR-PARVIZ, *Department of Agricultural Economics, Ministry of Agriculture, Teheran, Iran*

It seems to me that planning for agriculture as for anything else depends on the development of statistics, data, and information. This is necessary not only for agricultural economic development, but also for agricultural research, for increasing the incomes of individual farms and farmers, and for formulating policy. Unfortunately, in so-called under-developed countries no real data or statistics are available. They are difficult to collect and process because of the illiteracy of the farmers, the lack of communications, the subsistence type of farming, and the lack of finance for government statistics projects. Since such information and statistics are lacking in these countries, their planning is based on personal and individual observation rather than on exact figures. Perhaps, in first-year plans or even before starting the planning of development projects, the first step should be to provide data and statistics. Fortunately, in the case of agriculture the Food and Agriculture Organization is planning to make a world

agricultural census in 1960, and this could be a good opportunity for the economists and agricultural economists to encourage the responsible agencies of their respective countries to participate in this work in order to provide necessary information for agricultural and economic developments and their measurement.

R. BIĆANIĆ, *University of Zagreb, Yugoslavia*

May I make a strong plea for more planning in agriculture? In agriculture nothing substantial can be done over a short period of time, so planning is necessary. In agriculture long-term planning is easier, perhaps, than short-term planning, and can be more exact. Only, I would give a warning against confusing bad planning with good planning. If sometimes we apply wrong methods to the solution of a given problem we should not think that planning is altogether bad. Planning is action on a high level of human activity, and it requires a very rational approach to problems. It has its limitations, natural, political, economic, and psychological. We have to apply the right methods, and in the course of forty years of experience a typology of planning has been developed which can help in distinguishing different methods and instruments. Planning sometimes requires refined methods but we should not be perfectionists. The approach is comparatively new and experience has to be gained and evaluated every day.

I was very pleased to hear today how much the Soviet planners have recently learned from their past experiences and mistakes, and it was a pleasure for me to listen to Professor Kuvshinov's paper.

In the methodology of planning I would propose that we elaborate a terminology distinguishing the terms: programme, development, growth, planning.

GYAN CHAND, *Delhi, India*

I am very glad indeed that the eminent economist from the Soviet Union has been able to indicate to us the changes in the processes that are at work in his country. From what he has said and from what we know about the events in other socialist countries it is quite clear that a process of approximation is at work which is bringing planning in unregulated economies and planning in socialist countries nearer to each other. Three points which obviously emerge are decentralized initiative, the increasing reliance on the working of the price mechanism, and emphasis on consent as a prime economic mover. These three points give us a common ground from which to discuss the problems

of planning as a whole. In countries like India, as pointed out by Professor Anjaria, we have to take social inertia into account, together with the very serious limitations of statistical material and implementing machinery. Therefore, these countries have a great deal to learn about planning from the socialized countries in spite of significant differences. In India particularly, the need for generating and canalizing social momentum has to be an essential part of the plan. Social inertia is the most important factor limiting planning and planned development, and this is true also of a large number of other countries. Secondly, in these countries normative considerations must play a more decisive role in planning than merely to accelerate existing trends. Consideration needs to be given to structural changes—full utilization of man-power and the reduction of disparities between agricultural and non-agricultural incomes. The man-land ratio is going to grow worse in India, not better, in the next few years. Our friend from Japan pointed out that the level of unemployment there will be 0.6 and will remain stable. In India the level of rural unemployment will increase in the next few years, and the Second Five-Year Plan anticipates this. Any plan which is to be really effective must take this into account and provide for the fullest utilization of man-power. The third point which also is not properly appreciated is that the price policy has also to be normative; it has to realize certain objectives and bring out certain changes. The question of price policy in India has not been looked at from this point of view and we have not got the machinery for putting this view into effect. Therefore, the constitutional changes which are necessary to make price policy effective require to be carefully thought out. One of the main objectives of this policy—not only in this country but in socialist countries—obviously has to be a reduction in the disparity between agricultural and non-agricultural incomes. Agricultural incomes in this country are one-third of industrial incomes and similar disparities exist in the Soviet Union and the eastern European countries. We have to bring about the necessary institutional changes in our price mechanism, in our banking system and its techniques, and in our credit policy, the need for which has not been taken into account at all so far as India is concerned. The last point is fundamental, for in an economy like India's we have to depend on the working of the price factor for regulating and steering our economy.

My last point is that for planning and executing a plan the strategic positions have to be occupied by the State. The need for occupation of strategic height is admitted in India. But in practice it has not been achieved, its significance is hardly appreciated, and as a result we are

drifting. But it must be an integral part of the principles and objectives of planners of this country.

N. B. TABLANTE, *Farm Economics Association, College, Laguna, The Philippines*

Planning for agricultural development should be considered in the full context of economic development planning. The strength of any plan or programme depends upon the quality of the basic information at hand. It is the job of agricultural economists to provide, through research, the basic information that is necessary for policy formulation, so as to make plans and programmes more effective than they ordinarily are.

Our experience in the Philippines has not been quite similar to that of India or of Russia. We have the so-called five-year economic and social development programme which is formulated by the National Economic Council, the national planning body of the Philippines. This programme is translated into fiscal terms by the five-year fiscal plan which is formulated in turn by the Budget Commission. The fiscal plan follows the system of priorities adopted by the National Economic Council in the allocation of scarce resources and provides the finance required to implement the programme. While our plan is stated in terms of a five-year period, it may actually be regarded as some sort of perpetual plan for the reason that it is up-dated or revised every year in the light of changing conditions and needs. The past year is dropped off and another year is added, thereby providing flexibility and continuity. Long-range planning can hardly go beyond rough approximations, forecasts, and estimates. Hence, periodic revisions—in our case, annually. I believe this is where our five-year plan differs from the five-year programmes of other countries.

Our plans and programmes are designed to improve the social and economic conditions of the country. The long-range economic objectives are the reasonably full employment of our natural and human resources and the increase of real *per caput* income. The social objective is equality of real income. We cannot separate agricultural development from industrial development. They complement and reinforce one another. Agriculture is promoted because it is still, and will continue to be, the mainstay of the Philippines economy and because agricultural resources are indispensable to industrial progress. Industrial development, in turn, can substantially supplement agriculture in providing more employment opportunities and in increasing the *per caput* income and standard of living of our people. Thus,

our programme has been geared to attain a balanced agro-industrial society.

During the last few years, we have found that we have proceeded a little too fast with our industrial development. This has brought about the great economic problems which we now face of dwindling international reserves and inflationary pressures. Our economic growth appears to have proceeded faster than the country's foreign exchange resources could adequately support. For the time being, therefore, we have to retrench and adopt austerity measures.

THE PRESIDENT

I cannot help feeling that we have suffered this morning from too much skilful 'sales talk' for economic planning, as though our experiments in this field mostly turned out as 100 per cent. successes with only an occasional failure that need hardly be noticed. May I illustrate my contention that a different sort of approach is needed by telling you a story?

Early on in our farming experiments at Dartington we received an invitation from Sir John Russell, then Director of the famous field laboratory at Rothamsted, to carry out for him a series of replicated plot experiments. When these plots were ready for inspection, Russell came down to Dartington and together we went to look at them. There was a considerable measure of variation. Pointing to a series of blank spaces, I said, 'I'm sorry, Sir John, but these plots look as if they were an absolute failure.' Turning to me on the instant he rapped out the following warning: 'Never, Mr. Elmhirst, please, never let me hear you use that word failure in judging an experiment of this kind. In such a trial as this there are only positive or negative results. For me,' he continued, 'it is the negative results that are the most exciting, the most challenging, and the most productive of new thought and of new ideas. If you once call these blanks failures, or think of them as mistakes, you will tuck them neatly away in your subconscious mind and so forget all about them. They each represent to me a specific challenge, an exciting challenge. They set me thinking how and why they could have come about.'

The point I am trying to make is that this morning we have been given a general impression that, apart from a few failures, all these attempts at overall economic planning have been fairly successful. But is that the most helpful kind of salesmanship? Cannot we as a body of social scientists be much more objective in the future about our experiments in the realm of forward planning? As long as we use these words mistake or failure, we shall try to hide away and forget

just those experiences which, if boldly faced and examined, may prove to the rest of us of formidable use and value. By hearing of the negative results in detail and by a bold and critical analysis of them, we may learn how to improve our own experimentation in this treacherous field. As Sir John Russell said, he could have prophesied so many of the positive results, but the prime use and service of the negative results was that they fired his imagination and caused him to think again. What a good custom it would be for us if we could frankly discuss both the negative and the positive results of our attempts at planning in the whole field of agricultural economics!

N. A. MUJUMDAR, *Indian Society of Agricultural Economics, Bombay, India*

I have two points to make about the planning of agricultural development in India.

In the first place, so far as procedure is concerned, there seems to be a need for decentralization. Though the principle of building from below is emphasized and though the district is regarded as the planning unit, in the actual formulation of the programmes this principle does not seem to have been practised in any meaningful manner. The economic and technical experts functioning at the central level play an important part in laying down over-all targets and in deciding what may be called the major projects. But having done this, say, for a state, the chalking out of detailed programmes at the district level seems to be left largely to the administrative machinery, which does not command technical or economic expertise. This leaves a serious lacuna for two reasons: first, there is a great deal of regional variation in the agrarian structure of the country. The crop pattern, the proportion and composition of the rural population, the employment and wage level, urbanization, monetization—all these characteristics differ not merely from one state to another, but in different regions within a state. Secondly, since we are aiming at the maximum utilization of resources, a detailed study of local resources becomes imperative. Such local resources, taken singly or individually, may appear almost insignificant in relation to the national needs. But I would submit that they may be made to play an important role in meeting local needs. Let me amplify. There may be a cottage industry which by using locally available materials would be potentially capable of providing considerable employment for the local population. But this may escape the attention of the central planners. Similarly a minor irrigation work such as a tank may not receive the attention it deserves. It seems desirable, therefore, that a detailed techno-economic study of such resources in an area should precede

the formulation of the plan. For this purpose, either the machinery of the Planning Commission itself must be at the district level or, if this is not possible, there must be economists and technicians at the district level to help the administrators in the formulation of programmes. Such a procedure would be especially helpful if the aim is to institute construction programmes on a massive scale to relieve large-scale rural under-employment.

My second point relates to the implementation of the programmes. Here the main bottleneck seems to be human organization. In India, as Professor Anjaria has rightly emphasized, the problem of implementation is essentially one of stimulating the entire community, of teaching them and getting them to adopt more efficient ways and techniques of farm management and so on. In this direction we do not seem to have achieved the desirable tempo. Whether it is in implementing land reform or forming co-operatives or adopting improved farm practices, the entire rural community does not seem to have been geared up. I think China has a lesson to offer here. The story of the success of agricultural development in that country may be said to be the story of the zeal and energy of the seventeen million party workers who at district and village levels helped to activate the population. Apart from ideological considerations, it seems to be necessary to provide a band of devoted workers to marshal the energies of the rural masses, by cajoling and educating them and by providing them with the necessary facilities and incentives. The routine administrative machinery does not seem to be competent or qualified to inspire such confidence. The crucial question therefore is whether India can provide such a band of workers, and it appears that the Bhoodan workers have already blazed the trail. If an army of such workers could be raised to implement the regular development programmes one would confidently hope not only that there would be no gap between the targets and the attainments, but also that the tempo of development would achieve added momentum.

A. MOAREFI, *Teheran, Iran*

Following our President's remark about the value of failures as well as of successes, I wish to mention, not our two seven-year plans, but some failures we experienced in land reform.

Within the last thirty years my Government has made several partial land reforms in public domains. With one exception they have all failed. Why? Just because the farmers were left to themselves after having received their land. They were given no credit or co-operative or technical aid. But we have also experienced a land reform project

with full success. My august sovereign, H.I.M. Mohammed Reza Shah Pahlavi, issued an edict in 1951, in execution of which all the Pahlavi estates have been or are to be distributed amongst the farmers who cultivate them. This scheme is a complete success, just because it was well planned. It was geared to a proper distribution programme including the provision of credit, organization of multi-purpose co-operatives, technical guidance, &c. The results already obtained are so good that there are farmers whose incomes from the same areas that they farmed before have increased three or fourfold. This successful experience has led to the promulgation of a law, shortly to be implemented, by which all public domains are to be distributed on the same lines.

Y. T. CHANG, *College of Agriculture, National Taiwan University, Taipei, Taiwan*

A planned economy, so far as I know, is primarily a matter of government interference, and in carrying out any 'plan' whatsoever government investment is of the utmost importance. Government investment, as stated by Dr. Ohkawa, is only a comparatively small percentage of total investment and I doubt whether planning will function well in a *bona fide* economic planning sense. However, as Dr. Ohkawa puts it, the Japanese economy depends upon a private enterprise system. The target or objectives of the Five-Year Plan will be reached by the natural progress of economy rather than by government control. Of course, the indirect government control will help to guarantee the fulfilment of the plan.

I should like to ask Dr. Ohkawa whether the zaibatsu, who have almost regained their pre-war powers, co-operate with the Government in carrying out the plan.

S. SCHMIDT, *University of Cracow, Poland*

Being no expert in planning, I am anxious to learn from the discussion. Professor Schiller stressed the importance of variations in crop yields on the effectiveness of planning. I should like to emphasize that these variations are not of equal importance. Huge countries such as the Soviet Union or the United States do not have such great difficulties in this respect as some small countries.

I venture to suggest that consideration of this problem be included in the programme of our next Conference, and that we discuss the possibility of creating something like a clearing bank for farm products to enable the smaller countries to overcome this obstacle to constructive planning.

P. C. BANSIL, *Planning Commission, New Delhi, India*

I am struck by the desire, amounting even to craze, of most countries for self-sufficiency. Asian and mid-eastern under-developed areas which have suffered from colonial economic development for centuries have now chosen their own paths of planning. For many of them self-sufficiency—not only in agricultural but also in industrial goods—is almost synonymous with national independence. Some would even go so far as to aspire for regional self-sufficiency. This may seem all right at first sight, and these remarks may seem rather out of place today when we are considering food shortages all round, but studied in the context of perspective planning such politics are fraught with dangers and are likely to bring about a serious dislocation of international trade. It would actually seem to be a negation of the wise saying of Adam Smith that no prudent farmer will produce at home what he can get cheaper from elsewhere.

For example, in Burma lands are not suitable for any crop other than rice. She has nothing but rice with which to pay for imports. Today the U.S.A. has entered the world export market for rice. All the rice-importing countries are striving hard for self-sufficiency. In these circumstances, the future of international trade is rather obscure. In the recent past—1954—when India harvested bumper crops, just a word from the then Food Minister, the late Shri Kidawi, that India did not stand in need of Burma rice, brought the price of rice in Burma toppling down. Later in the year, when India agreed to make a token purchase of 90,000 tons of rice, the Burmese Premier actually thanked India for the friendly gesture. Similarly, India is at present importing Rs. 25–30 crores' worth of long staple cotton from Egypt and Sudan. If she were to stop this import, it would perhaps be at the cost of her textile exports to these countries.

Such instances can be multiplied. What is important is that the matter calls for attention right now. Professor Lewis has already alluded to one solution—densely populated areas restricting themselves to industry and others to agriculture. This is a point which has to be decided at a high level. But the sooner we think about it the better.

G. R. SETH, *Indian Council of Agricultural Research, New Delhi, India*

I would like to say a few words on the statistical aspects of planning. Lack of adequate data has been emphasized by various speakers. In India a great deal of effort has gone into the collection of agricultural statistics but still the data cannot meet the needs of planning.

The status of agricultural statistics is still worse in most of the eastern countries. If they should decide to develop planned economies in the near future, they should make an immediate start on planning their agricultural statistics programmes. To have the best results, statistical planning must be built into over-all planning. Planning can be considered a game played on the one hand by the government and on the other by human beings (in the role of employers and investors) and by nature. The role of the latter is of great importance to the agricultural production of countries like India. This game is played with resources in the form of capital, land, human beings (as labourers or employees), and other materials. It is an imperfect game in the sense that the rules are not always known. Corresponding to any strategy on the part of the government the reaction of human beings and nature cannot be determined in advance. There are no studies available on the reaction of human beings to various motivations and incentives, and the behaviour of nature can at best be considered a matter of probabilities. Thus events may not occur as expected and the Government may desire to change its strategy depending upon the reactions of the other players. For this purpose, it is necessary for proper statistical information to be supplied continuously to the planners. This means that suitable data must be collected continuously as a part of the plan, and in such a way that it may yield indicators to provide the basis for studying the progress of the plan and improving upon it. This means not merely the collection of data but its continuous examination by statisticians, agricultural economists, agricultural and animal husbandry experts, and planners. Operational research teams, in fact, have to be established. In this way we shall gain the best results from any planned programme. All this must be adequately provided for in the plan itself. The role of statistical quality control is very well recognized in any industrial project and I believe similar controls have to be developed for assessing the progress of any planned economy. Unless this is done, the planning decisions will continue to be based on insufficient data which may not bear any quantitative and deeper analysis. Thus, proper statistical activity should be built into the plan itself in such a way that statistical data flow continuously and are examined continuously by experts, to provide useful indicators for the planners to take effective action in good time.

A. ZIZKA, *Academy of Sciences, Prague, Czechoslovakia*

I want first of all to express deep gratitude to the President and the Society for helping me to attend this Conference which is becoming

a fairly representative body on whose platform scientists from countries of both economic systems can meet, discuss, and exchange opinions about such pressing problems of the present world as agricultural development.

I should like to mention the role of co-operatives in agricultural planning. Historical experience has proved that in agricultural as in industrial development, a great expansion of productive forces can be secured only by large-scale organization.

There are two main historical examples and, in general, two ways of developing agriculture from small, petty production into large-scale farming. The examples are the United States of America and the Union of Soviet Socialist Republics. The first way is a long-term and rather painful process accompanied by polarization leading to certain social effects. The second—to mention only one difference—tries to speed up the whole process using objective laws of economic development. Even if this speeding up does not go smoothly in the social sphere, especially at the beginning, I am convinced that it is possible by adopting it to obtain better results both in the economic and in the social spheres. Professor Bićanić pointed out in his paper that the National Assembly of Yugoslavia has judged attempts at co-operative farming in Yugoslavia to have failed. In my country we underwent this process of co-operativization in the post-war period and found it quite effective. At present more than 70 per cent. of our cultivable land is under co-operatives. At the same time agricultural production is steadily rising. We may have been more lucky because of our highly developed industries—no less than 65 per cent. of our national income in 1956 was obtained from industry. Undoubtedly, a highly developed industrial base is a most important factor, allowing a regular supply of modern machinery and equipment and the introduction of modern technology which is necessary for large-scale farming. Certainly, large-scale farming has many advantages which are well known to all of us. For instance, rationalization of production is a necessary step for raising agricultural productivity. Again, the example given by Professor Bićanić of the use of ploughs demonstrates the irrational use of means of production on small farms. Undoubtedly farming on a small scale means wastage of all economic resources including labour and capital. This is especially important for countries in which some of these factors are very scarce and difficult to increase. Yet, it may happen—and does happen—that some irrational features appear even under our system. Professor Bićanić has rightly quoted the example of machinery tractor stations in the U.S.S.R. I agree that this kind of economic wastage appears in my

own country also. It was true of our administrative apparatus for example. Even if it appears rather curious, however, I would not ascribe this apparent wastage to administrative rigidity and ideological stiffness or even to pure mistakes, as Professor Bićanić has done. According to my way of thinking, it is simply a phenomenon which is unavoidable and necessary under certain conditions and at certain stages of development. But when these conditions are removed it becomes a real economic wastage to perpetuate these things. Therefore, with the profound changes which have taken place in Czechoslovakia during recent years, it was necessary by objective means to reorganize the whole system of administration and management, especially in industry. In addition to other effects, this helped to shift a large number of people away from unproductive occupations. Other examples could be quoted; but all the changes taking place in our country are not a symptom of flexibility, but are a result of careful analysis of prevailing and ever-changing conditions.

In the planning of agricultural production I think you will agree that it is much easier to plan for large-scale enterprises. However, even if individual enterprises are able to plan their own production, for the successful planning of the entire economy certain conditions are necessary, especially for agriculture. I will mention only one, and it is very important—the control of prices. Again, Professor Bićanić recommended a free market economy with uncontrolled prices. I do not know the situation in Yugoslavia in detail, but I am sure that the Indian delegates are well aware of the effects of uncontrolled agricultural prices, not only on agricultural production, but on the whole of Indian planning, as was apparent from Professor Gyan Chand's contribution. Price control is really a very important factor in planning. Planning is not a simple process, as was pointed out by Professor Anjaria. It never can be an end in itself but only a means for attaining the well-being of people—so necessary, especially in this part of the world.