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THE PROBLEMS OF PLANNING AGRICULTURAL PROGRAMMES IN LESS DEVELOPED COUNTRIES (WITH SPECIAL REFERENCE TO LATIN AMERICA)

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IN most under-developed countries there is a growing realization that future progress in agriculture should be sought through well co-ordinated plans and programmes. It is also realized that agricultural plans and programmes should be related to plans for general economic development. Nevertheless, few under-developed countries have undertaken to prepare comprehensive overall plans or programmes. Attempts to do so in other countries have been either abandoned, only partially accomplished, or have failed. Yet, in practically all countries there is some sort of agricultural programme under way covering either the whole agricultural field or one or more of its parts.

Among the countries now carrying out general programmes India is notable in that it has its first Five-Year Plan for overall economic development within which all agricultural programmes and projects are integrated. Several other countries in south and south-east Asia have also prepared agricultural and economic development programmes which, with the Indian Plan, collectively constitute the Colombo Plan. The Philippine Republic has an Agricultural and Industrial Development Plan. Egypt and Turkey in the Near East also have in operation development programmes but with separate and rather unrelated programmes for agriculture and other sectors of the economy. Iraq had a more comprehensive development scheme. In Latin America special chapters on agricultural development and other related aspects are included in the Five-Year Administration Plan of Argentina and the Six-Year Administration Plan of Mexico. In Peru there is the Five-Year Food Production Plan. Agricultural programmes are also under way in most other Latin American countries.

The formulation and execution of agricultural plans, programmes, and projects in under-developed countries is usually handicapped by political, administrative, socio-economic, cultural, and other factors. These include political instability, administrative deficiencies, obsolete

land tenure systems, vested interests, cultural and technical backwardness, and lack of trained people especially below the professional level. Among the most ambitious schemes for agricultural development ever formulated in Latin America were the Five-Year Agricultural Plan in Colombia for the 1946-50 period, the Agricultural Plan of Uruguay established in 1947, the Agrarian Plan of Chile formulated in 1945, and the Agricultural Chapter of the Salte Plan of Brazil in 1950. However, owing to one or more of the difficulties mentioned, only one of these plans was partially accomplished (Colombia) and the other three were practically discarded (Brazil, Chile, and Uruguay).

The magnitude of the problems to be faced is, of course, dependent upon how ambitious a programme a nation wishes to undertake. The removal of specific obstacles may be themselves one of the aims of a programme. If the lack of trained personnel and of statistical services tends to limit the scope of an agricultural programme, the training of personnel and the organization of statistical services may, in turn, become measures to reach the ends set forth.

Economic under-development is but one aspect of general under-development, which manifests itself in the level of administration, education, social services, and other aspects. Rather than 'obstacles' to development, factors like administrative deficiencies or cultural and technical backwardness are only part of a general fabric which will have to be gradually revised along with economic improvements, although economic changes may be the opening wedge. The type and magnitude of the problems vary from one country to another and it is, therefore, always dangerous to discuss together all of the so-called under-developed nations. There are, for instance, considerably more differences in development between Haiti and Argentina than between Argentina and the United States, whatever yardstick is used to measure such differences. The generic division of countries between well developed and under-developed is itself quite artificial. This reservation should be borne in mind in the discussion that follows.

Essentials in the Formulation of a National Agricultural Programme

1. *Agricultural programmes must be related to a national plan.* Agricultural programmes may be formulated as a part of or independently of an over-all plan for economic development. In the latter case the problems to be faced may be of less magnitude. Since only a part of the economy—although a substantial one—is involved, the facts to be analysed are not so numerous and complicated. Yet, even in

that case the relations of the agricultural programme to the economy of the country as a whole cannot be ignored.

If no general national economic programme has been developed, the separate agricultural programme will need to be based upon stated assumptions as to the probable or desirable development of the non-agricultural sectors of the economy. Problems in the fields of transport, industry, banking, and trade must also be taken into account in planning agriculture. Thus, in planning South Korean agricultural reconstruction, the new U.N./F.A.O. Agricultural Mission must decide whether to base its recommendations on assumptions that North and South Korea will continue separated, whether industries will be established in the south to replace those lost in the north, and whether the previous close economic co-operation and trade between Japan and Korea will be re-established.

2. *Political and social stability is needed.* An effective over-all plan for a country's economic development depends first of all on political stability so that, once a policy of economic development has been established, its main lines will not be subject to continued revision on account of haphazard political events. Social and political conditions within a country may also make real planning of development unwanted or very half-hearted, or effective implementation impossible.

There are few countries where many plans, programmes, and projects undertaken by one administration have not been shelved by an ensuing one. Peru is no exception. In this country, two decades ago, the Leguia Administration (1919-30) embarked upon an ambitious irrigation programme which was completely abandoned after a military uprising had overthrown the Government. Millions of dollars were lost in work already partly done and in expensive machinery. The head of the irrigation programme, the late Charles W. Sutton, an irrigation expert from the United States who became a Peruvian citizen by nationalization, was jailed under the accusation of graft, a charge which was later proved to be false.

Similarly, in Brazil, beginning in 1948, extensive work was done in preparation of the well-known Salte Plan for the development of health, agriculture, transport, and energy. The plan finally became public law in 1950, shortly before the end of the Dutra Administration. However, the Salte Plan was practically discarded by the succeeding Government—rightly or wrongly, we are not passing judgement. In partial substitution, a less ambitious scheme, the Lafer Development Plan, has been put into effect.

Chronic civil unrest or insecurity, or open banditry or warfare as in much of south-east Asia, is a powerful deterrent to the implementation of plans. On a broader scale, the whole east-west world tension of the present day is an impediment to economic progress, with the resulting massive diversion of financial and material resources from peaceful progress to means of destruction. Yet, the recognition that the contest is in part a contest for men's minds, and that improving their economic position is the only peaceful weapon that can be employed, has also aided development through encouraging such activities as U.N. Technical Assistance, U.S. Point IV activities, and the Colombo Plan.

3. *Teamwork is essential in formulating plans and programmes.* Whether a country is preparing a complete national development programme, one for agriculture alone, or only for certain limited phases of agriculture, the plan must be prepared with the co-operation of all agencies, authorities, and institutions concerned, and cover all the various aspects necessary for its success. In many under-developed countries plans are prepared by a single agency responsible for certain aspects of a programme, without considering or consulting other interested or competent agencies, and without including their phases of the activity. The engineers of a water development department may prepare plans for dams and irrigation works without consulting authorities on soils, crops, or markets. The roads department, national or provincial, may prepare programmes for road development without considering related programmes for other transportation, on the one side, or for the expansion of agriculture or industry, on the other. Frequently the engineers responsible for drawing blueprints are unaware that effective planning depends on knowledge of agriculture, economics, and sociology as well as of cement, steel, the strength of structures, and hydraulics. This tendency to plan by unrelated 'bits and pieces', instead of through preparing integrated programmes with the teamwork of all concerned, is one of the greatest weaknesses of development planning in many under-developed countries.¹ Some form of central planning agency is needed to see that all concerned work together to prepare properly integrated programmes.

4. *Policies must be based on actual conditions.* There is a natural temptation of under-developed countries to model their agricultural development policies on the examples of the most highly developed countries, rather than on a careful analysis of what is likely to work

¹ M. Ezekiel, 'Training in Economic Appraisal for Development Projects', *F.A.O. Monthly Bulletin of Economics and Statistics*, vol. 1, no. 3, July 1952.

best under their own conditions. Similarly, there is a natural tendency of technical experts from highly developed countries—especially those from the vast continental area of the U.S.A.—to assume that what less developed countries need is to model their methods closely on those of the most developed countries. These tendencies are most marked with respect to mechanization. All too frequently countries with only two or three acres per farm family have launched out on programmes of farm mechanization, importing great diesel tractors, combines, and grain drills, when what their people needed was to make the next step upward from harvesting with the sickle to harvesting with the scythe or cradle, or from stirring the soil with the ancient wooden plough and merely smoothing it with a log drag, to ploughing with a simple steel plough and harrowing with a simple A-frame spike-tooth harrow.

Two principles are involved in facing the actual conditions. First, what are the actual limiting factors to be considered? We of the Western world are so used to regarding labour as the scarce factor that to us 'efficiency' automatically means economy in the use of labour. We will invest much capital for a small gain in labour efficiency. But in most under-developed countries, labour is abundant and capital is scarce and dear. For them, the limiting factor is frequently capital. Their programmes must be devised to get the largest possible product, and to put the most men at work, per dollar invested. Mechanization merely to save human labour has little meaning so long as there is no useful alternative occupation for the workers thus spared.

The second principle is that of the necessary balance between agriculture and industry. In most under-developed countries population growth presses heavily on the land resources. Farms are small because of the excessive population on the land, and there is much hidden unemployment among the farm population. Something can be done by more intensive methods and higher yields, but not enough. If farms are to be made large enough to provide a reasonable minimum income per farm family, as all farm management experts recommend, some of the farm people must be shifted to other occupations. Where land area cannot be significantly expanded, the only possible solution is to expand non-farm industries—distributive, communications, financial, and service, as well as manufacturing. But with a growing population, the expansion in these non-farm industries must be rapid enough both to provide workplaces for all the annual additions to the labour force, and also gradually to shift some of the excessive farm population from farms to other occupations. As has

been shown in several earlier studies,¹ this involves a speed and magnitude of economic development, and a volume of annual investment, which is difficult or impossible for many of the poorer under-developed countries to reach.

Unless both general and agricultural development programmes are based upon a clear recognition of these issues, and do not ignore the problems involved, full success cannot be achieved.

The difficulties just pointed out are especially characteristic of the heavily populated regions of the Far East, the Near East, the coastal plains and islands of the Caribbean area and much of the Mediterranean Basin, and some mountainous regions of Latin America, including the Central Andes. In other under-developed regions, as in much of South America, population is small relative to potential cultivable land, and the problem is to find effective technical and economic means to bring the land into cultivation and utilization.

In some countries such as Ecuador, Peru, and Bolivia, the problems of development are further complicated by their anthropological, social, and economic structures. Ancient forms of land tenure and agricultural practices are found together with modern ones, since the superimposed European civilization has not been able, so far, to absorb entirely the native cultures. The development of the areas already inhabited at the time of the Spanish conquest did not produce a real merger but mostly a juxtaposition of rather opposite cultural patterns. One therefore finds in those countries all types of land tenure and agricultural methods, from the ancient Indian communities where land is still held in common and tilled with a foot plough, to the most modern and highly mechanized plantations, side by side with large estates where medieval conditions still persist.

Where a country has a very feudalistic political and economic structure, with a small group of wealthy landowners dominating government and public administration as well as economic life, that group is very unlikely to support any programme for destroying its own prerogatives and power, including any which involves the awakening of the mass of workers on the farms. Thus in some countries of Latin America large landowners have long held in great cattle ranches or extensive grain farms fertile valleys which would have been far more productive in diversified farming on family-size

¹ F.A.O., *Report on International Investment and Financing Facilities* (C 49/16), 1949, and report of U.N. experts' panel, *Measures for the Economic Development of Under-developed Countries*, May 1951.

farms. Similarly, in much of the Middle East semi-feudalistic conditions retard economic development.

If the planning agency is to succeed, it must appraise accurately the conditions which characterize its country, secure the co-operation of all interests involved, harmonize or strike the best compromise possible with them, and then develop the most effective means to carry into effect the national policies and programmes thus agreed upon.

5. *The programme must be based on adequate statistical and analytical services.* A comprehensive national or agricultural plan for economic development can be formulated only with adequate information and analysis of all relevant facts. This requires the existence not only of well organized statistical services to gather all the necessary data, but also of services for economic and technical research able to analyse the data adequately and to arrive at the right conclusions.

Although they are now given increasing attention, such services exist in very few under-developed countries and rarely are effectively organized. Among these few countries we may mention India, Ceylon, Philippines, Malaya, Egypt, Turkey, Israel, Argentina, Mexico, Brazil, and, possibly, Chile. The reports prepared by technical assistance missions sent to under-developed countries show the difficulties that the lack of statistical data presents in the analysis of many particular situations, and how the gaps have to be filled in by means of estimates or even guesses. The Five-Year Plan for General Economic Development prepared in 1950 by an International Bank Mission to Colombia illustrates the difficulty of planning in the absence of adequate statistical information.

Programming calls not only for the analysis of the current situation but of the situation likely to prevail \times years ahead. Outlook studies are therefore indispensable and these cannot be properly carried out unless existing information and services permit it. In the absence of adequate data for the past it is also difficult or impossible to formulate quantitative targets to express the goals of a development programme for production, trade, or consumption. Without the data, we cannot extrapolate previous trends, or estimate how much they might be accelerated in the future.

Main Problems in the Implementation of a National Agricultural Programme

1. *Adequate administrative machinery.* Many of these impediments also retard the implementation of plans and programmes, so that this becomes an even more arduous task. As Michael W. Straus puts

it, 'One of the greatest trials of man's plans and programmes is their execution and administration. It is when they are put to the test of performance, instead of promise, that plans and programmes survive or fail when exposed to the acid test of execution in a realistic world. Some brilliant administrators have made bad plans and projects work. Few good programmes have ever long survived the maladministration of really clumsy and incompetent executives.'¹

The over-all plan must be built up from, or backed by, subordinate programmes or projects, each one clearly conceived, administratively and financially feasible, and adding their effect to the desired national goal. This involves the ability to formulate specific programmes and projects (including making careful analyses of costs and benefits where appropriate), a well established working organization to execute and to keep them on schedule, sufficient capital investment, the ability to secure public support (i.e. from farmers, distributors, and consumers) and a large number of skilled administrative officials.

The subordinate measures necessary to carry a national plan into effect may consist, in part, of specific programmes affecting the agriculture of the entire country and, in part, of individual development projects in limited geographic areas. Programmes may cover such nation-wide activities as establishment or improvement of an agricultural extension service, development and introduction of hybrid corn (maize) seed, establishment of a veterinary service and stamping out foot-and-mouth disease or other diseases, or establishment of a modern crop-reporting system. Projects may include preparing and carrying through irrigation, drainage, land reclamation, combined river development, or other specific development activities in specific areas.

While development projects are often more spectacular, the progress in national production will usually depend, in larger part, upon the successful planning and execution of the nation-wide programmes. National programmes will affect the level of production of all regions of the country, both old and newly established. In many countries, however, development projects are also important. In countries with abundant land resources, they can speed up the bringing of new land into cultivation. In older countries with heavy pressure of population on the land, they may help to ease that pressure.

Adequate administrative machinery has to be set up to carry out

¹ Michael W. Straus's course, 'The Administration and Execution of Plans and Projects', given at the Latin American Training Centre on Agricultural and Allied Plans and Projects, Santiago, Chile, Oct.-Nov. 1951.

programmes and build and operate the projects. All this demands skilled key personnel and subordinate skilled workers and trained assistants, all of whom are in short supply in most under-developed countries. Educational facilities are limited and cannot provide a sufficient number of administrators at the technical level or the sub-professional level. In many under-developed countries the administrative and scientific forces are like an army with only generals and privates, without lower officers and non-commissioned officers. Thus the staffing of the organization required to execute programmes and projects becomes, in fact, a strong limitation to the scope of the development scheme. Planning for the education and training of the needed workers and for the institutions to educate and train them is itself an essential and often neglected element of the basic plan.

2. *Adequate financing.* The lack of investment capital, both on account of low national income and inadequate incentives or arrangements for mobilizing private savings, is one of the obstacles most difficult to overcome in under-developed countries.

Domestic savings are not always properly channelled towards agriculture or other economic development. This is the result either of the lack of incentives to invest or reinvest in agriculture, or of the preference given by the potential investor to more secure or remunerative undertakings. As a consequence, urban construction has increased by leaps and bounds in many flourishing capital cities of the under-developed world. As stated by the Abbink Mission to Brazil: 'The concentration of the Brazilian investment potential in the construction of office buildings and of apartment houses for the relatively small groups of wealthy and moderately well-to-do people, —types of investment which contribute less to a balanced economic development than do many other types of investment—has been adjudged by all observers as one of the most serious of the economic distortions experienced during the war.'

This phenomenon was particularly evident during and after the last war. Between 1937 and 1946 building construction in Brazil increased by 189 per cent. whereas agricultural production rose only 6 per cent. In Chile the corresponding figures were 128 and 8 per cent. respectively. Subsequently, these differences have become less extreme.

Furthermore, many under-developed countries use too much of their scarce foreign exchange earnings to import expensive cars and other luxuries for the wealthy classes while failing to increase basic facilities for production and employment. Still, agriculture in many of the under-developed countries is the largest source in the national

income and, consequently, of fiscal revenues. Only a minor part of these revenues can be reinvested in agricultural development by the public administration; and individual farm incomes are often so low as to leave little possibility of net investment by the farmers themselves. Further, in many instances farmers are overburdened by existing taxation systems and therefore the revision of these, as well as the development of rural credit facilities, becomes an essential part of agricultural programming.

The planning of financing must recognize that the foreign financing required may exceed the amounts needed solely to pay for necessary imported capital goods. In very poor countries large development projects which need no foreign capital goods may yet cause inflation, unless foreign funds are available to import consumer goods for the additional men at work.

Of course, all development schemes must state the way in which they will be financed. In many instances either the cost of the project is underestimated or financing expectations are not fulfilled. In Colombia, for instance, nine projects were delayed or suspended for a number of years owing to lack of funds. Taxes expected to finance them did not yield sufficient revenue. Similar instances could be cited in Bolivia, Chile, Ecuador, Peru, Uruguay, &c. The Seven-Year Plan of Iran is another example. The plan was under active implementation for the past two years or so, but recent political and financial difficulties have caused its practical suspension.

In other cases projects in need of foreign or international loans were not approved by the prospective lenders because of technical deficiencies in the projects themselves, or on account of the lending policies or limited resources of the institutions concerned. The vast Irrigation Programme proposed in 1946 by Mexico is a good illustration. The investment schedule called for approximately 200 million dollars in foreign loans, of which only a minor part was granted by the International Bank. In many cases, however, projects have been planned on a scale far beyond the administrative resources of the country to carry through, even if it could have secured the finances requested.

3. *Adequate provisions for public participation and for extension services.* Once plans, programmes, and projects are under way, general public support, and particularly the co-operation of interested groups in the community, are indispensable. (But in most instances Governments either neglect these important aspects of development planning or are unable to secure such support and co-operation.) If farmers and other interested groups do not have an adequate voice

and participation in the formulation of a plan, they are not likely to co-operate in its implementation; and even if farmers are willing to co-operate, the necessary machinery is not always set up to aid them to take the necessary steps, e.g. through adequate extension services or general farm management programmes.

One example of successful public participation in national planning is the Plan Monnet of France, even though this was a programme for a developed rather than an under-developed country. This plan was prepared in large part by committees of all the groups affected, agricultural and non-agricultural. Their feeling of responsibility for the plan and their support in carrying it through was one major reason for the remarkable speed of French development since it was adopted.

The need for better extension services is clearly evident in most under-developed countries. Thus a joint E.C.L.A./F.A.O. Report states: 'The organization of extension or advisory services to farmers is embryonic or non-existent in most countries of Latin America. In the opinion of the Joint Working Party this constitutes the greatest single impediment to agricultural improvement in the region.'¹ At F.A.O.'s Second Latin American Regional Meeting, the inefficiency of extension services was singled out as one of the main reasons for the failure of the Latin American countries in increasing yields of basic crops during the past seventeen years, in spite of the considerable agricultural research work under way.

In the absence of efficient extension services, farmers cannot be made aware of the need for using fertilizers, pesticides, or improved machinery and tools; nor of the part they must play in the achievement of production targets that may be set. Some countries have only one extension agent to several thousand farms, as contrasted to one agent to each 525 farms in the United States, on the average. In countries such as Ecuador, Peru, and Bolivia, the lack of trained personnel able to speak the native dialects is also a serious impediment to the conduct of extension service programmes, let alone national agricultural plans.

Other impediments to development. Many other factors may also conspire against the execution of agricultural development plans. In Mexico, for instance, the lack of transportation apparently has been one of the biggest difficulties in the implementation of the Six-Year Plan. Increase in agricultural output has run far ahead of the development

¹ *Agricultural Requisites in Latin America*. Report of the Joint E.C.L.A./F.A.O. Working Party. U.N. Department of Economic Affairs, Lake Success, New York, 1950, pp. 3-4.

in transportation facilities. The Northwestern Railroad, after being improved, will not be able to move more than four million metric tons per year, whereas the programmes for agricultural development call for moving around nine million tons of farm products in this region by the end of 1952. The Maritime Department of Mexico has had to intervene in partially solving the problem by improving port facilities in this part of the country.

Very few of the under-developed countries have an efficient road transportation system. Thus transportation services are holding back a scheme for increased food production in Ethiopia. The southern part of Ethiopia is very productive, its forest resources are abundant, but transportation costs are prohibitive. The country has no sea outlet and the only railroad available crosses over 400 miles of completely barren desert with resultant prohibitive freight rates.

Other factors limiting the execution of agricultural programmes which can only be mentioned here include obsolete or inadequate marketing methods and arrangements, and the lack of adequate economic incentives to farmers to produce the output desired. Farmers everywhere are reluctant to produce more to feed the nation better, unless they are convinced they will not go bankrupt in the process.

Some possible short-cuts in agricultural planning. In spite of what has been said so far, some steps can be taken for agricultural planning in most less-developed countries. As already mentioned, the removal of barriers to agricultural planning may become positive objectives of the plan itself. Agricultural programming may also be limited in scope, i.e. to a certain group of products or to carefully discriminated aspects of the agricultural economy. Programmes of this sort may be formulated in every country.

Even in countries lacking sufficient statistical series some devices can be used in formulating agricultural targets. Investigation of consumption levels carried out by means of well-planned sampling surveys may give a basis for rough projections of quantities needed for domestic requirements. These will then aid in formulating production targets. Also, if there is a national development plan calling for a certain increase in average income *per capita*, a sampling survey may aid in determining variations in consumption according to variations in income levels. The results can be used to help estimate the expansion in national demand with given economic progress in the country concerned. Another way to approach this question is to study the usual relation of consumption *per capita* to income *per capita*, as shown by information from many countries. Correlation

charts of such relations may provide some indication of the changes in consumption of each major product that may be expected in a given country, say in the next five years, in consequence of the planned increase in national *per capita* income. For most products, retail prices as well as income levels must be considered in making such spatial comparisons.¹

In some countries lacking adequate production statistics, production targets aimed at reducing imports of certain agricultural products have been formulated largely on the basis of foreign trade figures. In connexion with this, the Plan Mínimo de Producción Agrícola of Venezuela for the 1947-50 period may be mentioned. This plan was formulated in 1937, when statistical services for agriculture were just in the process of being organized. Targets for the Five-Year Food Production Plan in Peru have been established much on the same basis.

Once a national policy for economic development has been established, ways can be found to give continuity to the implementation of plans and programmes. In several countries, particularly in Latin America, special semi-autonomous bodies or development corporations (*corporaciones de fomento*) have been created to carry out economic development projects. In Chile, Bolivia, Peru, Ecuador, Costa Rica, and Venezuela organizations of this type are currently in operation, usually with United States aid or assistance. Among these the Chilean Development Corporation and the Venezuelan Development Corporation are good examples. Although their achievements are quite outstanding, obviously they cannot be entrusted with the formulation and execution of over-all national development plans without the participation of other public agencies. The creation of central national bodies (such as the Planning Commission of India) of a permanent character and with the various economic groups of the community represented in an advisory capacity is a desirable solution. Similarly in Iraq a High Economic Planning Board has been set up with a special budget of 17 per cent. of the Iraq oil revenues, and with full executive power, to implement any proposed plan. It consists of the Minister of Finance and six non-government members and consequently should not change drastically with political changes.

¹ For a simplified discussion of such procedures, see M. Ezekiel's 'Methods of Economic Forecasting', *Formulation and Economic Appraisal of Development Projects*, vol. i, United Nations, F.A.O., and Government of Pakistan, Lahore, Pakistan, 1951; and Alfredo Saco's course, 'Formulation and Attainment of National Agricultural Goals', delivered at the Santiago Training Centre on Agricultural and Allied Plans and Projects (mimeographed), F.A.O., Rome, 1952.

Notwithstanding the obstacles briefly reviewed in this paper, we very strongly believe that agricultural planning can assist the development of all under-developed countries. The obstacles can be overcome only through carefully developed plans, programmes, and projects. Well co-ordinated planning and execution are the only means by which the countries in question may achieve a substantial improvement in their nutritional standards and are the most effective way by which they may help achieve the F.A.O. goals of enough food for all peoples and of prosperity for all farmers, all over the world.

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Professor Ezekiel's paper is of special interest for those who are connected with the study, or with the execution, of programmes for the economic development of Latin America. He presented a set of statements on the subject with such systematic and logical sequence that it may serve as a landmark for anyone wanting to enter the field. I want to make a few remarks on the subject of capital formation which we in Latin America think is the most important point in the development of under-developed countries.

As we know, capital in a new country can be created by compulsory saving, by voluntary saving, and by fiscal policy; this last means through a special taxation system or through a process of inflation, or even through special compulsory lending. And, of course, capital may also be borrowed from foreign countries, though I do not propose to discuss that here. There is no doubt that, for under-developed countries, it is very difficult to apply any one of these methods. The first, compulsory saving, is out of the question since we are speaking about democratic countries. The second, voluntary saving, which is the most orthodox method and the one responsible for the greatness of England, can hardly be applied in our country for three reasons. First, we do not have the puritan way of living that was so characteristic of England and other north European countries. On the contrary we live under the influence of Hollywood, which in the case of Brazil means living beyond our means. Secondly, our productivity is very low, and thirdly, our incentive to invest is very slight. What is more interesting, as Professor Singer has shown and Professor Ezekiel has mentioned here, these three circumstances are connected in a kind of vicious circle: productivity is low because there is no capital, there is no capital because the people do not save and the people do not save because economic productivity is low. How can we break out of this circle? One possibility is to improve

our terms of trade. If the industrial countries were to pay more for our coffee, vegetable oil, cacao, or meat than we pay for their products, we could save more and increase our investment and our productivity. But the possibility of this is remote. The supply of colonial products is, in general, well above the demand for them, since the bulk of the people who live in tropical countries live by agriculture and compete with each other in producing the same products. So there is no chance of great or permanent improvement in the terms of trade. Besides that, I do not believe that an improvement in the terms of trade could be of substantial value in increasing the rate of investment in many under-developed countries because, as I said before, the incentive to consume is very high. Theoretically, we could break the vicious circle by increasing our technical productivity. We could improve the productivity of our agricultural activities, for instance, without further investment of capital. But there we run up against one characteristic of the people of our countries, namely, the under-development of their capitalistic mind. In our social heritage we have had leadership by aristocratic people who looked upon work as a crude and distasteful way of living, while, on the other hand, we have had a large proportion of Indians and Negroes who used to consider work as an activity that had to be performed for their masters' profit. It is true that later we have had a large influx of new immigrants from Europe with a different attitude towards labour, but there is no doubt that in general our population still markedly reflects in its behaviour the mental attitude of its forbears. As that is the general behaviour of the people, it is easy to understand that they lack drive in their pursuit of efficiency. They are not conscious of the advantages of efficiency. That requires a different philosophy, a philosophy in which the possession of material things has a high priority over other things, including relaxation. The same thing, to a different degree, happens with the enterprisers. To be known as a nice man with good friends and an active social life means much more to him than to be known as an efficient man of business. It gives him higher prestige. So all too often, when rewarding or promoting employees, he passes over the better worker and gives promotion to some less capable person, who happens to be a relative of an important friend of his. This affects the efficiency of his enterprise but pleases him in his social interest. With such attitudes to economics it becomes a difficult task to improve efficiency to the point where it may be possible to increase the formation of capital. I think that capital formation could bring quicker results if Government were stable. Beyond that, I realize that in a country that has suffered

from inflation for a long time, the population cannot stand any strong policy towards forced saving, but I still think that capital can better be created in under-developed countries through a well-planned fiscal policy and, as I say, no problem is more fundamental for their development than is the raising of capital.

E. DE VRIES, *Holland, and International Bank, Washington, D.C., U.S.A.*

I think there is no difference of opinion on the main thesis of Dr. Ezekiel's paper. If I may put it in one sentence, it is that we need more and better plans, and that they should be carried out more effectively than they are at present. But all the difficulties that have been mentioned this morning, and previously at this conference, lead me to a question that I would like to put before you: What is the position of two kinds of people, firstly, those who have responsibilities in their own countries for the development of agriculture and are asked to make and execute the plans, and secondly, those people who are asked by, perhaps, the Bank or the F.A.O. or the U.N. or their own country to assist them in planning? These technical experts, these agricultural economists in both groups are well represented in this room. What do they do when they are convinced of the necessity, the desirability at least, of planning and are quite aware of all the difficulties involved? The number of countries where this work has to be done is very large. In fact, it is true of most countries, of the dependent territories in Africa as well as of the republics in Latin America and the nations in Asia. Are there lessons that we can draw from our experience in the past? I suggest that a first prerequisite for a good plan is that it should avoid subsequent disillusion. I believe that a bad plan is worse than no plan. The first point therefore is that it should be realistic. Here the economist surely has to keep the engineers and the dieticians on the leash. He must exert a lot of self-restraint himself by not putting the target too high. It follows that the plan must contain a number of complicated assessments as to what it is intended to achieve and the means to achieve it. It is essential that a plan should keep within the limitations of the natural conditions, the social structure, the economic and financial means of the country. Secondly, as Dr. Ezekiel pointed out, it is necessary to indicate at every point in the programme the man, the group, the agency responsible for its execution. I believe there is too great a tendency in many reports that I have read to make the Government a counter for lost and found articles. Many reports ask a Government to find public support, legislative action, enough skilled personnel, and enough financial resources.

They lay at the door of the Government a lot of problems which they have discovered in the hope that the Government can solve them. How often is it stated in a report that the Government should study this and the Government should study that, that the Government should change this condition and the Government should change that condition? My personal impression is that many Governments of under-developed countries are getting tired of this kind of thing because they know quite well what they do *not* know. What they want in a report is not a description of the difficulties but a solution to their problems. It is much more difficult, of course, to carry out an analysis and indicate solutions than to point out deficiencies.

The third thing which I consider necessary if disillusionment is to be avoided is that we must not forget that after all it is the farmers who produce the products we hope to obtain from our programme, and the plan can go no farther than the farmer can go, though the plan can help him to go farther than he does at present. One can induce him, one can help him, but one cannot force him even in the five-year plans behind the iron curtain. Experience shows that one cannot really force the farmer. So what is the incentive and what is the aid which can be given to him? Much has already been said at this conference about the knowledge and skill one can try to hand on to the farmer, but I want to say a word about incentives. They also have been mentioned many times this morning and earlier in this conference, but I have noticed that too often the price incentive is missing. Many Governments, not only in the developed, but also in the under-developed countries, have used price control and procurement systems too often to fight inflation to keep the cost of living down. Many methods that were started at an early stage in the thirties to support the farmer and guarantee him a decent price have in effect turned out to be subsidies to consumers. In a study recently made by a joint Bank/F.A.O. Mission to Chile we found that 10 per cent. deviation in the wheat price caused in Chile an increase or a decrease of 35,000 hectares of wheat, or 3 per cent. of the normal wheat acreage, which alone is almost sufficient to explain the present deficiency of wheat in that country. I believe that price incentives work very strongly also in a subsistence economy, strange as it may seem. A second incentive, and I am sure that Professor Norton is coming back to that in greater detail, is the market. This relates to ways and means of marketing through transportation, certain processing of products, and marketing systems. We found in Chile that the part of the transportation and marketing investments

which relate specifically to agricultural products takes one-third of the agricultural programme, against two-thirds for the increase of production. I do not know whether this percentage would be applicable in every country but it would be large in every country.

The most important consideration of the programme is where to put the target. If we want to come to some quantitative goal for our programme for a five-, or an eight- or ten-year period, we must use all kinds of devices. For lack of real knowledge about all the facts of consumption and income we must use projections. We can do that through time series or through models, perhaps both, and the cross-check of one on the other will lead to some results. In Chile the Bank/F.A.O. Mission used time series of product by product consumption to project aggregate food consumption in 1960. We came to a figure of 36 per cent. over 1947. A group of economists in E.C.L.A. in Santiago did the same calculation on the basis of an economic model. They came to 35.2 per cent. It is perhaps just sheer accident that we came to almost exactly the same figure, but it is encouraging that in Chile on the basis of Chilean statistics we reached similar figures.

At this point I must appeal to everyone here at this Conference. I believe that there is an appalling lack of comparative economic studies among the under-developed countries and between the under-developed and the more highly developed countries, both on the present state of affairs and on the historic developments of these economic relations, of national income and the demand for food, of changes in type of food, say from grain to more milk and more dairy products in general and more meat. We really do not know these things. There are, surely, in the archives of F.A.O., in the archives of the Bank, and in the archives of the United Nations, and I suppose in the State department, a lot of studies that could be used. I surveyed as well as I could what is being done in that field and I found that much more has to be done, and the Universities have to do a great deal here. International agencies like the F.A.O. and the Bank are really themselves under-developed in this field, and we cannot advise under-developed countries how to plan unless the Universities and research institutes really make a big effort to get at the scientific, economic, and sociological basis on which to make realistic plans. I want to put this, with much emphasis, into the hearts of each of you who has the opportunity to do or to help to execute this kind of study.

We need capital. That is my last point; and, as a man from the International Bank, you would expect me to say something about

that. I believe that the lack of domestic capital as well as the lack of foreign investment in execution of agricultural programmes is a real obstacle to the desired end. It is difficult to say how much is needed for each country, but I must put in a warning because it was suggested yesterday and the day before that a lot can be done with a small amount of capital. I think that if you explore these possibilities realistically you find that they are limited. You can do many things which do not require such capital, but if you take that road you will come to a point where the domestic and foreign capital to execute the aims is lacking. The Arthur Lewis-Schultz Committee for the U.N. estimated that in order to expand agricultural production by 1 per cent. annually you would need 4 per cent. of aggregate agricultural production as an investment. Let us take that capital input-output ratio of four to one. It may be three and a half to one but with an aggregate agricultural product in the under-developed countries of 50 billion dollars, even a very modest target of expansion of only 2 per cent. out of which more than half will be absorbed by increased population, the need is something like 8 per cent. of 50 billion, that is 4 billion dollars in domestic capital and foreign exchange for the development programmes. Part of that, of course, is created domestically through taxation and savings. Part of it, also, can be created if the inducements to the farmers are effective so that the farmers can use more of their own labour in expansion of their land and increased production. But I think that at least one-third of it is in foreign exchange, and as the countries do not have that foreign exchange from their current income, they will need an enormous amount of foreign capital in the form of loan or grant from the Western world. This is a figure for agriculture alone. Population has to be shifted and industry has to be developed more rapidly than agriculture. Roughly, I would say on the basis of a set of estimates that for the non-agricultural sectors, in general, you need twice as much as for the agricultural sectors. That brings the amount of capital needed to something like 12 billion dollars. It can be done but it is no easy task. Let us not deceive ourselves with any suggestion that a development programme can be done without a major effort. I think it can be done and it should be done but it is a task that really will have to concern the whole world if the under-developed countries are to have a chance of increasing their standards of living.

A. S. THOMAS, *Newbury, England*

It has been very interesting for me to listen to this discussion

because I have spent a great deal of my working life in under-developed countries in Africa. I was a government official—one of those people to whom Dr. Raeburn referred yesterday as not liking alternatives. He mentioned three British agricultural projects in the tropics and, as a Britisher, I would like to refer to them rather than to the projects carried out by other countries. He mentioned the Gezira Scheme in the Sudan, which has been a wonderful success; and he mentioned the Groundnut Scheme and the Gambia Poultry Scheme which have been ghastly failures. The difference between those schemes was that the Gezira Scheme was preceded by careful scientific work; the Groundnut Scheme and Gambia Scheme were designed by planners.

I have been with many visiting experts around African countries, and I know their difficulties in understanding conditions. I took one grassland expert through Uganda. He stopped the car and said 'You told me *Cynodon* was not a common grass in your natural grassland. We have passed through a belt of it fifty miles wide.' I asked him to get out of the car and look. The belt was fifty miles long and it was ten feet wide—five feet on either side of the road.

People come to these countries near the equator, they see the size of the vegetation and they think the soils are rich. They do not realize how quick growth can be, how poor the supply of nutrients under equatorial conditions; and it is soil poverty in equatorial regions, away from volcanic areas like Hawaii and Java, which has been responsible for many failures. The textbooks talk of the way in which disease wiped out the coffee plantations of Ceylon. The coffee in Ceylon died out because the soil was not good enough to support coffee as a crop.

Dr. Raeburn, yesterday, mentioned the swollen shoot disease which led to a rapid decline of the cocoa crop in the Gold Coast. But that is not the whole story. Cocoa has been growing in the Gold Coast for forty or fifty years and it has been rapidly dying out all that time because most of the soils in the forest area of the Gold Coast are not good enough to support it as a permanent crop.

And soil poverty may have other effects. There were certain parts of Uganda to which my African assistants and servants never wanted to go. It took me twelve years to find the reason. They were afraid of being eaten. You do not hit a man on the head and put him in the pot; you put a spell on him so that he dies in bed and you bury him, and then you dig him up again and eat him. Now the interesting point is that all those areas have very acid soils; cannibalism as well as agricultural development may depend on soil poverty.

Professor Ashby talked yesterday of the need for road development. That is necessary, not only for the good of the people so that they may have access to hospitals and schools, and so that their crops may be sent to market, but it will soon be necessary in order that fertilizers may be put back on the soil. You can have a forest which will maintain itself on very poor soil. You can have a good population maintain itself on fairly poor soil. But once you start exporting some of the plant nutrients in cash crops you must be prepared to put something back.

N. M. JOGLEKAR, *Government Agricultural College, Nagpur, India*

Coming as I do from a country which has by now gained considerable experience in planning, I would like to place before you a few problems to the solution of which the economist has a large contribution to make. The particular reference which I have in mind is to the establishment of sound principles for allocating the available funds for the development of the different agricultural regions of a country. The first principle which I suggest is that a certain minimum should be made available to be spread over the entire expanse of the country. The purposes for which it may be spent should be decided by assessing carefully the need or urgency peculiar to each region. Secondly, the remaining funds should then be earmarked for investment in specially selected areas or on items which are calculated to effect the maximum good from the point of view of the country as a whole. The other problem is how to determine the proportions in which short-term and long-term projects should be financed. As the community which makes sacrifices for the implementation of the plan looks forward to being rewarded in some measure within its own time, adequate funds should be provided for expenditure on schemes which promise to give quick and tangible results. Long-term projects may be taken up with the object of minimizing the difficulties of the future. In this connexion I would like to invite your attention to the technique followed in fixing priorities and to the principles of allocation formulated by the Planning Commission in India, since they are the latest contribution to thought on this subject. They are specially designed to suit a democratic and progressive set-up.

The commonest criticism of planning is that it tends to remain theoretical, having no roots in the reality of a situation. It is an effort to build from the top instead of to plan from below. In the case of agriculture it should begin from the area controlled by a single operator and then, by a process of grouping together the plans for

wider and wider areas, it should be possible to arrive at a plan for the country as a whole. At the implementation stage there must be a constant endeavour to see that the national plan is fully understood and then reflected in the management of every economic institution of the country. Governmental efforts in this direction are likely to be severely limited by the inadequacy of finance, with a result that they can be expected to serve a defined sector only. It is therefore essential to create an agency to carry forward in wider concentric circles the process of planned development initiated in one sector to the large public sector around it.

M. EZEKIEL (*in reply*)

First I would like to comment on Mr. Thomas's point that the scientists did a good job of planning and the planners did not. I doubt if there could have been much planning of the projects he referred to unless the planners had seen what previous scientific work had been done and had based their plans on that. Planning must include both scientist and scientific results. If the necessary scientific work has not been done, the planners would discover the fact and delay the making of plans until the scientific basis has been established. Planning means, of course, bringing together the necessary result of scientific and practical research and experimentation, as well as the necessary information on both the economic and administrative sides.

In this respect, as everyone is aware, farmers seldom achieve in practice on their farms as much improvement as experiment stations show to be technically feasible from new techniques. One very interesting development in this respect has been the application of sampling methods to find out what results farmers can achieve when they put new methods into use. Dr. Sukhatme of India, now head of the F.A.O. Statistics Branch, has developed this method. To test the result of using improved fertilizers or improved methods of crop rotation he secures the co-operation of farmers in the area involved, distributed on a stratified sample basis, to put the method into use on their farms and through the results they achieve, he finds out what can practically be realized. The rapidity and extent to which production can practically be increased on farms is generally much less, of course, than under controlled experimental conditions. Performing such experimental demonstration work is itself one of the necessary pre-conditions of an effectively planned programme. In F.A.O. we plan to develop co-operation in experiments of that sort with a number of countries.

On the terms of trade of the under-developed countries referred to by Dr. Paiva, I might point out that at the present time under-developed countries, especially those producing products such as cocoa, coffee, or wool have had recently the most favourable terms of trade they are likely ever to have. The rapid increase in world income since the war compared with the rather slow rate at which production of these products can be increased has resulted in phenomenally high levels of prices for them, even after the end of the Korean boom. It is possible those levels may continue for some years until production can be gradually expanded. The problem is how the countries benefiting from those phenomenally high prices can see that the resulting unusual foreign exchange earnings, or at least portions of them, are diverted to investment. As Dr. Paiva suggests, that may be one element of fiscal policy.

On Dr. de Vries's comments I have very little to say as we are so nearly in complete agreement, but I will just mention one or two points. We agree as to the lack of comparative economic study between countries. We hope in F.A.O., especially in the Commodity Branch of the Economic Division, to make some such supply and consumption studies, where space is a variable instead of time, and to get some results out on that in the next year or two. Some such studies are already under way, although our publications funds are so small that we have difficulty in publishing material even after we have the results.

I was pleased with Dr. de Vries's final statement on the potential need for investment to do the whole job, since it shows magnitudes comparable to those that F.A.O. first calculated as far back as 1949, and to estimates published in other reports. I might mention that we are doing one practical job in trying to secure the investment funds necessary for under-developed countries, by helping to provide training for their workers in how to prepare and formulate individual development projects, and particularly how to work out cost-and-benefit analysis—to figure out what you are likely to get out of them and what they are going to cost—in terms which will be persuasive or at least intelligible to the agencies to which they have to go to get investment funds, domestic or international. In co-operation with the International Bank, with the Bank itself providing some of the lecturers, with the United Nations, and the host countries, F.A.O. has conducted three such international training centres in the last two years—the pioneer one at Lahore, Pakistan, at which Dr. de Vries was one of our star lecturers; and then this last year one was held in Ankara, Turkey, for the Mediterranean basin; and one

in Santiago, Chile, for the Latin American countries. At each of these training centres from fifty to sixty experts from all the countries of the region, drawn from a wide variety of professions, have worked on how to put together all the facts necessary for formulating development programmes. The training also covered the techniques necessary to make a rational appraisal of a project's cost and return and then how to write it up after the job was done. The report from the first Lahore training centre, giving all the lectures, is now available in printed form for those who wish to do similar work in other countries.¹ We are planning a similar training centre for the Arab-speaking countries, and some other countries are planning national training centres of the same sort.

With respect to the comments of Professor Joglekar, I quite agree with him on the necessity of planning as far as possible from the bottom up as well as from the top down. As my paper indicated, one of the greatest criticisms of much so-called planning has been that it was planning at the top with no real contact with either the people or the life of the country concerned. I do feel, as I indicated, that unless a national programme simultaneously includes programmes whose various component parts were worked out in co-operation with those who will have the responsibility for carrying them into effect realistically as farmers or business men, it has relatively little meaning. One reason why many national programmes have failed so badly is that they did not have that careful detailed participation in planning at the back of them. The methods of economic democracy that have been used in the United States in the development of the agricultural programmes of the last twenty years, although used for the planning of current agricultural programmes rather than economic development as a whole, might usefully be studied by those of you who come from other countries, and discussed as a basis of one method by which national plans can be developed with the participation of those, governmental and non-governmental alike, who at all levels, national, State, county, and local will have a hand in carrying them out. I believe such democratic participation is one of the most important improvements needed in national planning of development.

¹ *Formulation and Economic Appraisal of Development Projects*. U.N. and F.A.O., 2 vols., 1951.