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AGRICULTURAL DEVELOPMENTS IN THE TROPICS AND SUB-TROPICS: WAYS AND MEANS

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AS economists, we may regard plans and agencies for the development of poor countries as devoted to securing the addition of capital, skill, and enterprise to the existing unsatisfactory combinations of factors, mainly land and ill-fed, rural labour. Our chief concern may be to judge—for a whole multitude of different local conditions—whether the new combinations, and new choices of products, would prove to be the most appropriate.

The bases for our judgements might be whether fuller employment of factors (especially perhaps of labour) would result—whether the marginal principle would be satisfied, whether natural fund and flow resources would be conserved, whether provision for the service of debts would be adequate, whether accumulation of further capital would actually take place, whether risks and uncertainties, both physical and financial, would be reduced, or unduly great.

We can set ourselves some pretty problems in applied economics. The tentative, qualitative answers might be quite useful. Certainly they would enliven many economic textbooks, and strengthen many official reports. But what reliance can we place on any quantitative elaboration of them, such as is necessary if they are to be the basis of State or private action?

We are beset by many of the usual obstacles to reliable forecasting in the more commercial economics, but, in addition, there are others of great significance.

On the one hand are the limits to our present knowledge of biological and other natural factors in the tropics and subtropics, and their probable responses and reactions to changes in farm and forest practices. In making Point IV in January 1949, President Truman—I had better be careful here—asserted that our resources in technical knowledge are inexhaustible. In my humble view this may be dangerously misleading. At the present time we have altogether too little knowledge of what, for instance, would constitute 'good farming' in any but a very few tropical or sub-tropical locali-

ties. Most of the biological and soil problems involved, and the resource assessments, had best be approached with the humility of science. We do have some knowledge—local producers have too—and it could be more fully used; but it is inexhaustible only in the sense that it flows from substantial, and we hope, growing funds of inquisitiveness and methodology.

On the other hand, and more important, are the difficulties of predicting human behaviour during periods of great disturbance and transition. Families, kinship groups, clans, tribes, races; Governments, local and central, sovereign and dependent; farmers, landless labourers, landlords, money-lenders, traders, teachers, officials, aristocrats, and, not least, priests and magicians—all in great variety—who would predict their behaviour with real assurance? What will the longer-run population changes be? And what the philosophical, religious, social, political, and administrative? Arrangements for education, land tenure, taxation, credit, care of the sick and the old—how will they be adapted? Where will habits of labour, enterprise, and saving lead on, as in Japan, to high productivity? Where will apathy so increase that racial suicide results, as it did amongst the aborigines of Tasmania? Or alcoholic and sexual degradation as among some American Indian groups.

We can, of course, usefully look back at history. At the least, it helps us to realize the complexity of the problems we face. We can see that 'making the benefits of our scientific advances and industrial progress available for the improvement and growth of underdeveloped areas', in accordance with Point IV, the Colombo Plan, and the objectives of United Nations' agencies, is nothing less than a gigantic process of 'colonization' in the modern meaning of that term—the decline or disruption of the old structures of small, more or less coherent societies, and the building up of new and larger ones as integral parts of a wide, dynamic, less easily understood economy[1]—the changing of scales of value, the development of new skills, the synthesis of new characters, and the achievement of new or remodelled institutions.

Ways, means, and results in the past

The principal ways and means of such colonization in the past have been: trade; religious wars and missionary endeavour; extortion; direct and indirect rule by Europeans; money and labour taxes; alienation of land; the establishment of plantations; slavery and indentured labour; the development of transport; provisions against

[1] See S. H. Frankel (1949), *The Concept of Colonization*, Oxford, Clarendon Press.

local famines; curative and preventive medicine; certain types of education; agricultural, veterinary, and forest research and extension. All these, and other things, have contributed for better or for worse to 'culture contacts', and the disruption of 'self-sufficient, self-satisfied and self-sanctioned' primitive economies.[1]

In surveying the results, we may well be tempted to hand out less praise than blame, but let us consider first how well, through the decades, expansion of production in the tropics has kept pace with the demands of the rest of the world—demands for non-ferrous metals, fibres, rubber, rice, sugar, spices, oils and oilseeds, coffee, tea, and cocoa. For speed of increases in production, consider Malayan rubber and West African cocoa. Or, on military grounds, consider all the commodities labelled 'strategic'. Of these, the backward areas of the world now supply over 70 per cent. of the total requirements of the U.S.A. alone.[2] Or consider what expansion of food supplies there has been, in some regions at least, to meet the needs of ever-increasing populations—from the Punjab, the lower Nile Valley, the Gezira of the Sudan. The morals of Wilberforce and the economics of Adam Smith[3]—often with the politics of Plato—have, indeed, led to much frustration and disillusionment, and left us many problems; but also some real achievements, and—not least—open opportunities to learn from experience.

These opportunities can, perhaps, best be grasped in this short paper if I put before you some of the main conclusions of four careful students of 'colonial economics'. You will see a thread of logic running through them.

(i) 'The adaptation of (primitive) productive effort to an exchange economy is essentially a matter of substituting (in men's minds) ends which an increasing supply of money will serve for those that have customarily been satisfied by a fixed amount of labour.' But seldom have Governments aimed directly at the creation of new wants. They have rather followed the method of first imposing new obligations.[4]

(ii) Innovations may be (have often been) regarded by native opinion as menaces to the whole social fabric.[5] And usually, indeed, they have torn this fabric badly.

(iii) 'When . . . the community sense is broken, the binding force

[1] I. C. Greaves (1935), *Modern Production among Backward People*, London, Allen & Unwin.

[2] *Report of the Advisory Board on International Development*, Washington D.C., 1951.

[3] W. K. Hancock (1950), *Wealth of Colonies*, Cambridge University Press.

[4] I. C. Greaves, op. cit., pp. 60, 167.

[5] Ibid.

of common ideas loosed, there is loss of confidence, irrelevance of purpose, and a sense of lowered vitality. A period of frustration sets in; each man is for himself and the driving force is lost or turns self-destructive.'[1] And we can see plenty of evidence of this nowadays.

(iv) 'Expanding Europe has brought to Asia and Africa new opportunities, but also new dangers. By bringing other peoples into our economy . . . we have corroded the values of their ancient ways. We hope that they will carry into a more spacious future much that has been good in their own past; but to achieve this synthesis they need time. Too often, we have given them too little time (and perhaps also too little help of the right kind). . . . Partly by intention and partly by accident, we have been creating new classes whose leaders nowadays are in a hurry.'[2]

(v) Moreover, in Hancock's view we have not been clever enough in our thinking about development policies. 'There are some teachings of old-fashioned economics which the apostles of colonial development and welfare will ignore at their peril; a society which cannot, by its own savings, finance the progress it desires, must strive to make itself credit-worthy and is most likely to succeed if it follows market opportunity along the path of comparative costs. Because its future prospects depend so much on present imports, it must look for profitable export industries; it must also offer prospects of gain to people of enterprise—to its own people, so far as possible, but, if need be, to foreigners also. It is better to have "palm-oil ruffians" to pioneer a thriving commerce than to have no economic pioneers at all.'[2]

(vi) 'But "palm-oil ruffians", if left to themselves, do some bad things and leave many good things undone. If we in Europe think State action necessary to provide a groundwork for our economic system . . . how much more necessary is this action in countries where money income and public revenue fluctuate violently with the prices of a few exports, where the social fabric is extremely vulnerable to individualistic aggressiveness, and where so many public services which we take for granted are lacking?'[2]

(vii) 'Unfortunately, this action presupposes a strong and uncorrupt State. . . . Many of "the under-developed countries" in the Far East and the Middle East and Africa do not, as yet, possess such a state, nor the society on which it can be built.'[2]

And, finally, this last quotation which sums up best, I think, the main points I want to make.

[1] J. Bowle (1947), *Western Political Thought*, London, Jonathan Cape.
[2] Hancock, op. cit., pp. 39–43.

(viii) 'Attention has to be devoted to the particular institutional manner in which [capital] is supplied and used, so as to ensure that it will meet the need which perhaps dominates all else—the need to fashion new economic structures which will prove to be socially stable. This really means that Africa's need is for more capital of a kind which cannot yield, and should not be expected to yield, immediate net returns. Whether such capital can, in fact, be supplied in sufficient amounts and, if so, how it can be . . . effectively applied in a continent so ill-equipped with complementary human factors of production, and in the face of such great ecological and environmental difficulties, we do not yet know. In that ignorance lies the challenge of Africa to the freely creative world.'[1]

You may think that all these conclusions have a bearing on choice of future ways and means in Africa and south-east Asia rather than in India, the Middle East, the West Indies or Latin America. Where commerce and 'colonization' have already had quite large effects, and particularly where population pressures on food supplies already cause widespread fears, and an undermining of 'ancient ways', as in India, it is not only leaders, but widespread masses of people, that are in a hurry for further changes of some kind. None the less, the basic problem for them, for the more 'primitive' areas, and inevitably for us all—whether we believe in 'one-world' or not—is to secure the carrying over of 'much that has been good', and the fashioning of new economic structures which will prove to be socially happy ones. We should indeed everywhere 'dare to be wise', though the fact remains that many of our predictions may be unreliable, and our judgements unsound.

Improved and new ways and means

Another reason for this arises, of course, from the existing supply of certain types of technical knowledge yet to be applied, and its effect on ideas and scales of value. Not only are some leaders and some peoples 'in a hurry' but the knowledge—and half-knowledge—available to them is significantly greater than that which has conditioned 'colonization' in the past. This may be painted as a great opportunity. It is. But for us, as social scientists trying to be of practical service during a period of great transitions, it aggravates our problems.

Consider the new tools and the improved tools the natural scientists and engineers have fashioned: tropical medicine and its control

[1] S. H. Frankel (1952), 'Some aspects of investment and economic development in the Continent of Africa', in *Africa*, Jan. 1952.

of malaria, yellow fever, sleeping sickness, fluke- and worm-infestations, yaws; veterinary medicine; plant genetics; the new pesticides; the internal-combustion engine and modern road transport vehicles; radios, films. Even though there were no shortages of raw materials and foodstuffs, no 'cold war', no further development of the more philanthropic concept of 'Trusteeship', these technical 'tools' would give rise to problems enough for us in economics and other social sciences.

In particular, there are problems of balance and timing.

Proportions, organization, and timing

If then we turn, as economists, to consideration of ways and means in particular areas, we may still—though rather more carefully—begin with an attempt at benefit-cost analyses.[1]

Basic to all agricultural development are the physical input-output ratios which Dame Nature decrees. It is remarkable how often they are the subject of optimistic guesswork. Sometimes they are practically ignored. But obviously some real experience of them, and scientific judgements of the probable variances of them, are desirable. At one end of the scale of complexity are the input-output relationships for such inputs as veterinary serums and vaccines, improved seed, better sires. At the other end are those for the inputs of large multi-purpose river valley projects, not to mention Groundnut Schemes. Even for the simpler inputs we have to take into account secondary physical and biological effects. It may, for instance, be comparatively easy to double a tropical cattle population by rinderpest control, and thereby, in the short and medium run, gain both meat and motive power. But the long-run effects on land use may be disadvantageous. By the use of other inputs it may or may not be possible to offset these effects. Similarly, the long-run ecological effects of expanded acreages of many crops (e.g. cocoa, cloves, bananas) may be serious. The use of irrigation water on certain soils, and of certain types of irrigation water on most soils, may, in the end, have disastrous results. Undoubtedly, in framing public policy, these long-run and secondary effects have to be brought into account—and particularly perhaps in the tropics and sub-tropics—but it is difficult to do so precisely, partly because, and sometimes mainly because, technical knowledge is lacking.

[1] J. R. Hicks (1946), *Value and Capital*, 2nd ed., chap. xv, Oxford University Press; Sub-committee on Benefits and Costs, Federal Inter-Agency River Basin Committee (1950), *Proposed Practices for Economic Analysis of River Basin Projects*, Washington, D.C.; United Nations (1951), *Formulation and Economic Appraisal of Development Projects*, vol. i. Available from U.N. and F.A.O.

Despite these difficulties, however, it is in practice useful to try to follow benefit-cost analyses as far as the preparation of provisional forward budgets over a fairly long period of years for a number of apparently feasible alternative inputs or sets of inputs. The economic and social requirements and the consequences of choice can then be more clearly seen. In the context of the local natural, economic, and social environment, each particular choice may often be judged to require certain amounts of (*a*) labour—unskilled, skilled, and highly skilled; (*b*) enterprise, particularly in facing risks and uncertainties, and in providing careful and flexible management; (*c*) capital; and (*d*) appropriate forms of credit. Each alternative also poses the need for incentives, and therefore perhaps for changes in land tenure, for property redistribution, taxation reforms, and political and administrative house-cleaning and improvements. We can all think of some examples here. Different choices pose also, in different degrees, the need for abatements of risks and uncertainties, but also for restrictions on the growth of undesirable monopoly powers and undue concentration of administrative power. And further, it may be seen that different choices imply different time preferences. Usually Governments have longer time-spans in mind and lower interest rates than private individuals who, particularly in the tropics, have short lives, low incomes, and high propensities to consume. Indeed, with changing scales of values and rising population pressures, the propensity to consume may be such as to result in serious depletion of natural resources. The time preferences assumed in suggested different development programmes and projects need, therefore, to be made clear. I hope some of the members here from the tropics and sub-tropics will tell about the experiences of their own countries in this connexion.

On occasion, of course, all this comparison of alternative projects may lead to nothing more than nightmares for the planners! I do not myself believe that benefit-cost analysis can be pursued in practice far enough to be anything like wholly satisfactory. Input-output relations are not reliably known. Opportunity costs of factors are not precisely measurable. The human factor is often unpredictable. The valuation of benefits entails insoluble problems in assessing 'welfare', as well as in forecasting price relationships.

Even so, I see little reason to doubt that in many territories the approach to economic and social development by way of benefit-cost analysis should be adopted more often than at present. It can lead immediately to trials and experiments, to emphasis on research, and away from reliance on optimistic ignorance. It can make poli-

ticians and officials, and leaders in business and farming, begin to think of alternatives. I sometimes think I have learnt little in the last ten years or so, but one thing I have learnt is that almost all—I won't say all—civil servants do not like alternatives. Too often, ideas on proportions in the combination of factors, on choice of products, and on timing, become too rigid, and the politicians and officials favour the customary, or the spectacular, rather than the economic. It can also lead to objective consideration of the types of 'firm' and agency best suited to carrying out various functions, and their relations one with another. This is essential, particularly in securing and maintaining good relations between racial groups, and between literate and illiterate indigenous groups. Also, the benefit-cost approach helps to show the investment needed in basic services and in education, law and order, medical services, &c.—in many things which together make the social and legal environment sufficiently favourable. Further, this approach can provide a useful basis for debate and decision on such controversial subjects as the reform of land tenure, agricultural credit, and taxation. And this applies to the otherwise readily frustrable attempts of international agencies of the United Nations, and other organizations trying to carry into effect Fourth Points and Colombo Plans. Finally, it can lead to better appreciation of the relation of development programmes to total national incomes, government revenues, and national credit-worthinesses. On this point I hope we will hear from Dr. Ezekiel and Dr. de Vries.

Some past successes, partial successes, and failures

We may see how important these matters can be if we again consider past experience—but this time, more specific examples.

Consider first the development of the Irrawaddy delta in Burma. Under British 'law and order' Burmese rural families were induced, partly through taxation but mainly by offers of consumer goods from traders of several races and nationalities, greatly to increase their rice production. Before the Second World War total Burmese production was more than 4,500,000 tons of white rice, of which 3,000,000 tons were exported and made a most important contribution to the food supplies of parts of India, Ceylon, and south-east Asia. And how badly that rice is needed today. The 'inputs' necessary were for land clearing, levelling, and water control, the labour directly in paddy growing; and also the factors required for law and order, and for internal marketing and milling. On the whole, the path of comparative advantage was followed. The mistake was not

made of trying to organize large units with salaried staff from overseas and too much hired labour costing more than self-employed indigenous labour was prepared to work for. Once the value of rice as a crop for sale was realized, enough indigenous enterprise and labour was forthcoming. And the process was not forced on too rapidly for sound judgement of what Dame Nature would accept, and continue to accept. Much useful research was carried out. By many of our standards the whole process was sound 'economic development'—sound 'advancement'. But, looking back now, we can readily see that land tenure and credit arrangements, though they may have fostered rapid early development, were seriously inadequate in a situation where peasants' propensities to consume were high and increasing, capital was in short supply, incomes were highly unstable, and most of the moneylenders and expanding urban groups were foreign. The result was rapid alienation of land to Chettyar moneylenders and a substantial degree of debt-slavery for the Burmese peasants, particularly during and after the Great Depression. This alienation could have been better foreseen and more adequate steps taken to provide more education, to create the necessary skills amongst native Burmese, and develop appropriate co-operative and other institutions. Burma's exports of rice are now little more than 1,000,000 tons. The 'disruption caused by war' is the reason given for this, and hopes are placed in the 'resilience of Burma's economy', but both these terms should be interpreted as containing distinct elements of reaction by Burmese rural families to 'colonization' and 'advancement' as they knew it.

Malaya's principal lessons are different. Here—largely because rubber production skills were comparatively new, and the demand for rubber was rising fast—land was alienated, mainly to Europeans, and large plantation units were created, dependent on salaried staff and hired immigrant labour. By 1930 the total overseas investment was the equivalent of about U.S. $250,000,000. This had brought with it the enterprise needed for rapid development and, together with government help, developed the further skills which had served also to keep development biologically sound. But by the early 1930's it was obvious that the enterprise and skills of native families had so increased that the structure of the industry would become uneconomic. The economies of scale were no longer sufficient to justify the official policy of aiding plantations rather than smallholdings. This change in policy was all the more desirable because of the vulnerability of plantations to the instability of rubber prices. In fact, however, the restriction schemes drawn up during the Depression

tended to bring about structural changes which were the reverse of those that would otherwise have taken place. Land utilization and social and political problems in Malaya today might well have been less difficult if the growing competitive power of Malay and other Asiatic farm families in rubber production had been earlier and more fully recognized. There would have been a different system of road and rail development, fuller use of areas now claimed by Chinese 'squatters', better training of smallholders in production and the first stages of processing, probably less mono-culture and financial instability, more real education, less immigrant labour and, I think, fewer interracial difficulties. Against this, it might be held that the speed of development would have been slower. I doubt, however, whether this need have been true—at least from 1930 onwards. It could have been better recognized, for instance, that a more economic division of functions between Government, planting companies, and large and small cultivators and tappers was possible. Although plantation companies were losing their competitive position in routine management and tapping, they may well have retained, or even increased, their advantages in clearing jungle and properly establishing good trees. They could have established plantations with a suitable layout for selling or leasing to native families.

In West Africa, too, development policies have led to what may fairly be judged fine achievements, but they have been tinged with some failures. The production and exports of palm oil and palm kernels, cocoa, groundnuts, hides, gold, tin, magnesium, and other products have been greatly increased. Cannibalism and religious wars, extortion and slavery have given place to enterprising commercial production and trade, to courageous attempts at modern government, to education up to University standards, and so on. The path of 'comparative advantage' has generally been followed. But if we look closer, we may well have some doubts. Nothing like sufficient research has been carried out. Land tenure is in many areas in a muddled state somewhere between communal and disputed freehold 'ownership'. Credit arrangements for farmers are either nonexistent or wasteful. Road development is still inadequate. Price and income instabilities are serious. Technical education is only now receiving the attention it should have been given years ago. Moreover, the different rates of population growth of the various tribes and races, and their different energies and capabilities, have inevitably given rise under *Pax Britannica* to latent conflicts which previously would have been settled by war. The breaking of the 'community sense' which commerce alone would, in any event, have brought

about, has raised several other social problems. What is needed now is a full and clear consideration and testing of possible firm lines of future economic progress, and the correction of the imperfect timing of the past. Some progress is already being made in this, particularly in the Gold Coast.

On the other hand, I should point out here that while I agree with almost all Professor Notestein said yesterday, I think that conditions in non self-governing territories today should not always be compared with some ideal—perhaps to suggest that 'colonial status' is a cause of failures—but occasionally compared with some historically realistic judgement of what conditions might well actually have been in the absence of 'colonial status'.

The lessons of the Groundnut Scheme in East Africa and the Gambia Poultry Scheme are also significant. They are not simply that State farms are practically always relatively inefficient. Rather, I would say, if attempts are made to hasten agricultural development by large-scale operations and much capital, almost every one of the advantages of a rational benefit-cost approach are very liable to be foregone.

At the other end of the scale of success, the Gezira Scheme in the Anglo-Egyptian Sudan should be mentioned. Here, basic input-output relations were favourable. Irrigation was undoubtedly well worth while, provided the proper crop rotations were followed, weeds, pests, and diseases were well controlled, rack renting was avoided, and marketing arrangements were sound. All these provisos were met. Scientific experiments over several years preceded the start of the scheme, and have continued on an adequate scale. Original rights in the land were not worth much, but could have obstructed or destroyed the whole scheme. The Government, therefore, 'pooled' them by taking the power to rent all the land for forty years at the equivalent of about U.S. $0·60 an acre. Good layouts were thus possible, and holdings of forty acres each were created for letting to tenants. The Government met the capital, interest, and maintenance costs of the dam across the Nile, and of the canals and most of the drains, and they maintained an Irrigation Department. For these services, and payment of the rents to original owners, the Government took yearly 40 per cent. of the cotton crop. The lay-out and levelling of the land, control of the water, supervision of the farming operations, heavy cultivations in preparation for cotton, control of difficult weeds, improvement of seeds, and marketing of cotton—these were undertaken by the Sudan Plantations Syndicate whose basic annual share of the cotton crop was 20 per cent. Tenant

farmers maintained the watercourses and laterals on their own holdings and met their share of common expenses, such as sacks and ginning, and they carried out all ordinary field operations on their own holdings. Their shares were 40 per cent. of the cotton crops on their own individual holdings, and in addition they had all the produce of their own grain crops (*dura*) and legume fodder (*lubia*). Tenancies were secure. Credit could be obtained on simple and favourable terms from the Syndicate. Incentives to improve holdings were generally adequate. A total of some 220,000 acres of cotton and 170,000 acres of other irrigated crops were grown yearly, and although dependence on cotton caused instabilities, the scheme made a most significant contribution to the income of the Sudan.

It may, of course, be claimed that the Gezira Scheme paid too little attention to welfare and social change. Some improvements have been made in these respects in later schemes in the Sudan. But even so, the Gezira Scheme seems to be an outstanding example of intelligent forethought, organization, and development.[1]

Other types of successful past development, which it would be quite wrong to ignore, are those requiring little capital and social change. Probably the spreading of such crops as rice and maize, through the world, is the most significant example. But in more recent times there have been many important developments based on improved seed and simple husbandry practices. Indeed, good extension workers have often contributed more than much dearer—I won't say scarcer—factors have. One of the reasons for this is that improvements related closely to existing practices have afforded some small confidence to producers about their ability to control their environment, and have not raised the fear of innovation which can be such an effective barrier in the tropics. Another reason is that such improvements usually entail less additional labour than do larger changes. In many areas additional labour is not readily forthcoming on any voluntary basis, both because the returns for it are not regarded as large enough, and because food supplies are inadequate to support it.

The scope for further extension work on simple lines is wide. A passage in an important book about the Punjab comes to mind in this connexion.[2] A Jat farmer is speaking of his neighbours in Jhang:

Without doubt Allah gives and he takes away; but it is in every one's

[1] For a description of the Gezira and other schemes see B. A. Keen (1946), *Agricultural Development in the Middle East*, H.M.S.O., London.

[2] M. L. Darling (1930), *Rusticus loquitur: The Old Light and the New in the Punjab Village*, Oxford University Press, p. 238.

power to do well. . . . I get up before dawn, but they do not get up till after it is light. I also weed my fields and see that cattle do not eat my crops in mouthfuls. I know, too, that when land grows weak, there should be two crops of gram before wheat is sown again, but they do not know that. Also, I have a hundred sheep; and when the cold is passed, in March, I put them on the land day and night. . . . Then the people do not clean out their channels, or ridge their fields . . . and so on.

Or, again, there are the results of a recent study of a simple, almost self-sufficient village in the Gambia[1]. These show that the differences between 'good' farmers and 'bad' cause, even in such circumstances, wide variations in grain production per unit of labour available—from about 350 lb. to 750 lb. per 'adult male equivalent' in 1948.

Some current plans

Time and space prohibit any detailed consideration at this point of the development projects currently under way. I hope others will give their experience of these. And especially I hope we will hear from those with intimate experience of the various supervised-credit arrangements in Latin America. But I would mention that in Africa, the British Colonial Agricultural Service and Territorial Governments are trying out what we may call the *blending* of capital and skills into local farming systems.

In Buganda, for instance, heavy cultivations at busy seasons are carried out for African farmers by tractors for fees. These fees are so scaled as to induce some relaying out of plots by agreements between the farmers themselves. Good soil conservation practices are also required. But for the rest, African enterprise and judgement is regarded as adequate.

In the Northern Territories of the Gold Coast, where a large area of land is being resettled, a Development Corporation is, in its first years, clearing bush, experimenting with crops and fertilizers, introducing cattle, laying out contours, making farm roads, and securing water supplies—carrying out, in fact, a group of functions such as good landlords and local authorities would perform in temperate countries. But it is not intended that more than the essential minimum of such work be done, for the cost of it will be a heavy burden on revenues from the produce of the area. Transport costs, into and out of the area, are very high. Because human populations are already pressing heavily on land resources only from 60 to 100 miles away, a production system that is capital-intensive, and foreign-labour intensive, is not appropriate.

[1] P. Haswell (1951, unpublished), *Study of a Savannah Village: Genieri.*

In some parts of nothern Nigeria, the 'blend' is again different. More cattle are available for draft and their grazing areas are fairly free of tsetse fly. The most economic unit seems to be a self-contained mixed farm using a simple, ox-drawn steel plough, and depending on outside guidance to any special degree only as regards tenure, credit, and marketing arrangements.

In the high forest areas of Nigeria attempts are being made to establish oil-palm plantations and related food-crop areas on modern lines, and then to lease these to farm families, since they would probably operate them more economically than would any medium or large firm.

In all these and other schemes, perhaps the main feature is that the various functions are divided between farm families, co-operatives, small corporations, local governments, and central governments, according to their respective capabilities and costs, and so far as possible, room is left for readjustments in future.

Another feature is that the economic limits to mechanization and other modern developments are recognized. They are determined principally by soils and climates, transport costs, population pressures, the rate of expansion of non-agricultural employments, and by levels of general education and enterprise. They vary widely from region to region. I would not on this be quite so pessimistic as Professor Brandt seems to be.

Perhaps one of the biggest questions which Africa poses is: 'Will the pace of development be so slow as to result in over-population such as China, India, and, indeed, many parts of Africa, already suffer?'

This brings us to the last point I can deal with here.

The rate of inflow of skill, enterprise, and capital

Various estimates have been made of the rate of flow of skills and capital into the poor countries of the world, and of the requirements of these countries.[1]

The best defined estimate of requirements suggests that the flow of capital would have to be as much as U.S. $7,000 million a year to Latin America, the Middle East, Africa, and south central Asia, if national incomes *per caput* are to be raised in these regions by no more than 2 per cent. a year.[2] Another estimate[3] suggests that U.S.

[1] I am indebted to my assistant, Mr. Leonard Joy, for help in preparing these notes.

[2] United Nations (1951), *Measures for the Economic Development of Under-developed Countries*.

[3] By N. Kaldor, in United Nations (1949), *National and International Measures for Full Employment*.

$2,000 million would be needed to secure a steady rate of growth of the world's economy with effective development of the unused resources of the poor countries and a suitable pattern of international trade. Yet another estimate indicates that, in the form of free grants from the U.S.A. alone,[1] perhaps U.S. $500 million a year might be needed, in the near future. On the other hand, it is obvious that no reliable estimates of 'needs' can be made at this stage, because the detailed economic, social, and administrative investigations in each territory have not been made and, as I have previously stressed, prediction is most difficult.

History suggests smaller figures will actually be achieved. In the 1920's, no more than U.S. $500 million a year of capital were invested in the poor countries and, in 1950, even including grants and loans, only some U.S. $1,450 million.

The value of exports of merchandise from the poor countries[2] in 1949 was more than U.S. $17,000 million.

Thus it seems that: (i) the capital inflow has been not much greater in real terms during recent years than during the 1920's, and small in relation to recent commodity values; (ii) fluctuations in commodity values and related fluctuations in the terms of trade will probably continue greatly to affect the credit-worthiness and purchasing power of the poor countries; but, in any case, (iii) the flow of skills and educational and technical training services is small in relation to the value of trade, the flow of capital, and the social problems entailed. The cost of these services and skills cannot be well measured, but such figures as Professor Brandt has given us do not, everything considered, suggest that provision is adequate.

And if, instead of considering budgets and headquarters work, we look about among the tropical and sub-tropical countries themselves, we can readily see how pitifully puny is the effort going into the objective study of their problems and policies and into worthwhile trials. Agricultural economists could, and should, contribute much to greater efforts.

In doing so we have, I suggest, to link up with the other social scientists as well as with the technical experts and administrators. And, perhaps most important, many more of us have to get down closer to the 'grass roots'.

[1] G. Gray (1950), *Report to the President on Foreign Economic Policies*, U.S. Govt. Printing Office, Washington.

[2] South Central and South America (excluding Argentina); Africa (excluding South Africa); Asia (excluding the U.S.S.R. and China).

M. Ezekiel, *Economics Division, F.A.O., Rome, Italy*

Both of these papers have covered so much ground and have given us such excellent analyses of the problems that I am going to confine myself to a few rather small points, grouped under three headings. But before going into them I would like to take issue with one initial statement Dr. Brandt made. He seems to put the argument for aid to under-developed countries from the more developed countries primarily on the basis of self-interest. He bases that on the conclusion that economic development creates increasing dependency of the developed countries on foreign trade, and on the purchasing power of the economically less mature countries. While that may be true for many European countries, I doubt if the available data for the twentieth century show it to be true for either Canada or the United States. Since those two countries contribute such a large share of the total funds for actual assistance to development in under-developed countries, it might be well to ascribe to them a somewhat more generous basis for their interests in the development of the other countries—such, perhaps, as basing it on the effort to prevent or ease the social revolutions that lie ahead, through the only peaceful means available, the only alternative method to war.

My first group of comments relates to the technical facts as to F.A.O., to a few slight misconceptions I would like to clear up. First, the regular headquarters staff of F.A.O. is now about six hundred people. Perhaps Dr. Brandt in his much smaller figure meant professional workers, but his figure is too low even then—that is for the headquarters staff at Rome working on the regular programme. Then the additional people, helping to run the technical assistance activities from headquarters brings the total size up to about a thousand. It is still, of course, an exceeding small staff to provide an intelligence service to the agriculture of the world, and technical-aid advice and assistance to all the countries of the world that are ready to co-operate with us.

Secondly, there seems to be a little confusion in the time sequence of what F.A.O. has been doing. The World Food Board proposal was set forth by Sir John Orr (now Lord Boyd-Orr) in the first year of the work of F.A.O., and was considered at the 1946 Conference at Copenhagen, after which a special Preparatory Commission was set up to study it further to see what could be done about it. Their recommendations were considered at the '47 Conference and were rejected, but the Council of F.A.O. was set up as a substitute with powers at least to review the commodity and agricultural situation

from time to time and see if anything useful could be done. Then the so-called I.C.C.H. proposal for an international commodity clearance house was put forward in 1949, and was rejected at the Conference that year. It is not quite true that the effort to secure what might be called action or administrative responsibility for F.A.O. has been completely abandoned, or that F.A.O. is centring solely on a purely technical organization. The last Conference, in the fall of 1951, directed that the possibility of setting up an international emergency food reserve be explored. That has been given some discussion since, and a more detailed report on it is now in progress for consideration for the Council meeting this fall and the next Conference next year. It would be a very small step, perhaps, in the direction of a world food board, although aimed primarily at maintaining, either physically or by commitment, supplies of food available for emergency use when needed for famine conditions. The Conference last fall also proposed a much more intense effort by Governments to expand food production, as has been discussed by some of the previous speakers, and directed the F.A.O. staff to co-operate with Governments in planning this increased food production, the Governments to report the progress they have made. It also called for more staff-work on land tenure, on finance and aid in securing finance for developments, and increased the budget of F.A.O. by 10 per cent. for those purposes. This partly offsets the 30 per cent. depreciation of the purchasing power of F.A.O.'s annual budget. There has also been a growing closeness of co-operation with the International Bank on some of these matters, especially on financing, which I will go into later. Then, again, there is a dual function of F.A.O. which needs to be clarified. F.A.O. is usually defined both as the staff of the organization and as the meeting of the nations which compose it. As a staff, F.A.O. provides technical services and collects and publishes statistics and other information and administers technical-assistance activities in line with the directions of the Conference and Council. But as an organization of nations, as Dr. Brandt well states, it provides a parliament or forum in which the agricultural ministers and other accredited representatives of the nations can meet together and ponder and discuss agricultural problems and see what to do about them. It organizes such discussions not only on the world level, but also at regional meetings which take place in the different regions of the world from time to time, and also provides for various special or technical groups on forestry, on fisheries, on agriculture, on the commodity situation. Through those specialized meetings more co-operation and more joint international action may be developed than

we would see in the Conference itself or in formal proposals like the World Food Board.

Dr. Raeburn's analysis is a very fine one on the technical and economic issues in speeding economic development. I particularly liked his emphasis on social and cultural factors. There are however a few points I would like to add to what both he and Dr. Brandt said on the field of economic issues involved and also to some of the practical problems of making technical assistance work. This is my second group of comments. First, I would hardly think Pakistan is an altogether happy illustration of how technical assistance can best work. I am afraid there has been some overlap in Pakistan between what we are doing and what other organizations are doing, so that together we may be sending more technical experts there than the corresponding officials of the Government can 'digest'. In several countries we are facing the problem of too many experts. There are not enough trained workers in the Governments to work with the Technical Assistance experts or to make effective use of what they recommend. Secondly, in Pakistan there is some piling up, or overlap, between all the different agencies. In Pakistan there are at present the F.A.O. and other specialized organization experts, the Point IV experts from the U.S., the Ford Foundation workers, the Colombo Plan workers, and still another group—an English Union of some sort that is separate from the Colombo Plan—each working on economic problems. We try to co-ordinate their activities so far as we can. Instead of using banks, as Dr. Brandt suggests, the U.N. and other specialized agencies now have a top U.N. Technical Assistance Representative in each major country, such as Pakistan, whose job is to work with all the different groups there and try to keep them pulling together. But even then we all too frequently find things happening, such as in Pakistan, of an F.A.O. statistician arriving to help reorganize the agricultural statistical service and to work with the only man there well qualified in agricultural statistics, only to find that he had left the day before on a year's fellowship to the United States under the U.S. Point IV Programme! Thirdly, there are two or three other points on how to make technical assistance work. I was a little surprised to find Dr. Brandt not giving attention to what could be done by agricultural economists in technical assistance. In addition to helping Governments to draw up agricultural development plans and pull their programmes together, a topic which I will discuss in considerably more detail tomorrow, economists are needed to help develop public service operations in fields related to economic issues, agricultural economics, market information services, statistics, crop and

market reporting, and the organization of marketing facilities, grades, and standards. Much of the structure of government aid to the smooth functioning of economic activities that we have in the more developed countries is needed, and economists are needed to help show how it can be done and to get it started.

For my third group of comments, I seem to detect at certain points in Dr. Brandt's paper a slight tendency to what I would regard as an over emphasis on private enterprise and a minimization of what Government may need to do, which I suspect very few underdeveloped countries will be likely to follow. First, I felt his comments on the T.V.A. were hardly complete. Even if T.V.A. produced only ten per cent. of the electric power, its low rates and its competition with established private public utilities forced an adoption of a low price, large volume, policy in much of North America, which has a very pronounced influence on increasing demand for their product and raising their profits. And he seems to have given somewhat less than due attention to that public competition which helped to bring down the rates in what were previously essentially monopoly positions. Secondly, in addition to privately owned concerns importing know-how and management, government-owned concerns can also, through contract with foreign corporations, arrange to have that know-how and management imported at the government cost. And, in fact, I believe it is being done that way in many countries. Thirdly, private contractors in under-developed countries, when they take contracts without the control of rigid public inspection and public control of specification that they have been accustomed to in those highly developed countries, have not been unknown to charge all the traffic will bear, and do a poor job or charge twice what it was worth. I am not quite sure that sole dependence on private contractors without regard to such difficulties would necessarily bring all the benefits that Dr. Brandt has indicated.

These comments are mostly in the nature of footnotes. As a whole I feel that both papers make a very excellent introduction to the subject and give a very fine basis for further discussion here.

S. R. Sen, *Ministry of Food and Agriculture, India*

I was very much interested in what Dr. Ezekiel told us about his experience of the F.A.O. and other U.N. agencies, the Point IV Programme, and the Colombo Plan. Some very commendable work is being done in the region from which I come and we appreciate it very much indeed. But I think Dr. Ezekiel has done a good thing in pointing out that the picture given by Prof. Brandt requires some

modification and that there could be considerable improvement in certain aspects of the technical assistance programme. Our experience in India is that we are often asked by the representatives of these organizations why we are not taking more experts than we do. We have always been anxious to use the limited resources of these organizations as frugally as possible and not to take an expert unless there was a pressing need for one. Yet there have been cases where we had trained experts of our own and all the technical assistance that was needed was some equipment for them to work with, but we were told that we could get the equipment only if we were prepared to take experts with it. Then there have been cases where we found that the selection of the 'expert' had not been done carefully enough and that his experience or reports could be put to very little practical use. There have been cases also where the expert came with preconceived notions which were extremely rigid and without the ability and sometimes even the willingness to understand the socio-economic problems of the field in which he was supposed to work. I agree with Dr. Ezekiel's other point also that there has been some duplication of work between these different agencies, much of which could be avoided. There was one week in New Delhi when three representatives from three of these organizations came to see me to collect information about a certain subject most of which was available in published sources or was already available with one or other of them. I feel that there is an urgent need for better co-ordination between these various international organizations. I have also an impression that a large part of the resources of some of them are spent in headquarters work which could perhaps be reduced substantially with better co-ordination, and diverted to field work for which there is such great need. Moreover, anyone who attends the meetings of these organizations for a few years soon finds out that there is a repetition of issues and of problems from year to year which is rather frustrating. The reports prepared and recommendations formulated are descriptive rather than critical, formal rather than suggestive. Problems are posed but are left unanswered. Statements relating to facts are made but obvious conclusions are not drawn. There is a fear of hurting susceptibilities and truths remain unstated because they are unpleasant, or inconvenient to certain interests. The documentation does not show that independent outlook, fearless spirit, and constructive approach which one expects from such organizations. Of course, there has been considerable improvement in the recent past and I can assure you that the authorities concerned are fully conscious today of these shortcomings and are doing their best to improve

matters. But I am mentioning all of them just to point out that the mere fact that so many experts have been sent out, that so many reports have been published, and that such and such problems have been discussed does not necessarily mean that real progress is being made—at least to the extent that is practicable. Moreover, sometimes I have a feeling that recruitment to the various international services is not perhaps always made with that care which one usually associates with the recruitment to high offices in some of the more advanced countries of the world. This is important, for the quality of work that you get depends ultimately on the quality of the men whom you recruit. I know that it is very difficult to recruit really good men. Most of them do not want to be taken away from their own fields of work. And in this matter, perhaps, the responsibility lies not only with the international organizations but also with the experts. If, however, there is to be a world consciousness that all of us have a responsibility not only to ourselves, to our particular field of work, and to the country to which we belong but to the world as a whole, then I think, it is necessary that the top-ranking experts of the world should make some sacrifice and give their services to these international organizations.

In conclusion, I would once again like to say that it is very far from my intention to detract in any way from the very good work which these international agencies are doing. In many cases the fault has really been on the side of the recipient countries. Some of them have been extremely inconsiderate, have not properly planned their work and have asked for help which they were not really prepared to receive and utilize. Possibly, also, some of these difficulties are inherent in international organizations especially at the beginning, before the work has been properly organized. But it is as well that we should be conscious of the shortcomings and guard ourselves against the errors of over-optimism.

Y. Lowe, *Embassy of Israel, Washington, D.C., U.S.A.*

Technical assistance is one of the most valuable contributions Western democracies make to the cause of bettering the lot of under-developed countries, but there is just the question whether technical assistance in itself is enough, whether it can bring about the desired changes or whether other factors have to be considered too. It is not by accident that the same so-called under-developed countries in which technical knowledge is missing are identical with those in which the system of land ownership, land tenure, credit, and so on, is far from satisfactory. Sometimes one has the feeling that this giving

of technical assistance tranquillizes the conscience of the Western democracies and may let them rest in the thought that everything else will develop by itself in the course of time. If in many of those under-developed countries more than 50 per cent. of the gross output of the agricultural tenant has to be handed over to the landlord, if in those countries more than 70 per cent. of all the land is concentrated in the hands of a few, it can hardly be expected that the furthering of technical knowledge alone will be sufficient to bring about this bettering of the lot of the whole population which is the desired aim. It is easily understood that Western democracies do not want to interfere with the Government of other countries, but the question is still open whether this shying away from responsibility is the best solution, or whether the offering of technical assistance should not go hand in hand with certain reforms so that the worst evils at least shall be done away with.

There is another point I would like to make. Israel has good reasons to be extremely grateful for the technical assistance which has been rendered to her. But we in Israel tried from the outset to lay firm foundations for a modern economy in general and a highly developed agriculture in particular. I do not want to go into detail here. Suffice it to mention that in our country we have successfully avoided the creation of a class of big landowners as well as of a landless proletariat. This was done with the help of national funds which provided a large, although by no means the larger, part of the population with the possibility of becoming tenants on nationally owned land on extremely favourable conditions. It further gave people who had no means of their own the opportunity of getting their initial investments in the form of loans extended over periods of between twenty-five and forty years at annual interest rates of between 2 and 4 per cent. This stands in sharp contrast with the usual rates charged in many other countries in the Middle East.

What is lacking in Israel nowadays even more than technical assistance is capital investment on such a basis that the capital be given on long term and at low annual interest rates. Under such conditions, we are confident that the capital would be returned with profits, but it cannot be expected from a very young economy, in the process of being built up, that it should be able from the outset to make capital pay in such a way that private enterprise can be attracted. And here, I think, lies another possibility for the Western democracies to help under-developed countries, and one which is no less important than technical assistance. The available funds of the World Bank and of the Export-Import Bank seem to be much too small to render the

services needed in this respect. Technical assistance combined with capital investment on easy terms can, without any doubt, facilitate development in far larger measure than technical assistance without it. Israel, although such a small country with such a tiny population, may serve as an example. It is our desire to show to the world that on the basis of a firm foundation under the very same conditions as those of the surrounding countries, a modern economy can be established which guarantees to all members of its population an equitable share of the national income.

L. F. LEBEAU, *Algerian Agricultural Credit Bank*

Dr. Raeburn asked for observations on the application of the principles which are now under discussion. The three departments of Algeria which I have the honour to represent in the French delegation are now studying demographic problems and problems of farm management. First of all, concerning the population, before 1830 the problem did not exist. Disease, such as tuberculosis, typhus, and plague used to obliterate those of the population who did not have a sufficient calory intake. There was an equilibrium established between production and consumption. In 1830 France introduced health measures and immediately the population began to grow. In 1830 there were one million natives, in 1856 two million and a half, of which two million were Moslems. By 1875 the Moslems numbered three millions, by 1936, 7,700,000 and on the first of January 1952, 8 millions. The average rhythm of increase was 100,000 births per annum, and in 1951 it became 210,000 which in our opinion represents a world record. Up to now we have been able to take care of this increase by ordinary means, but we foresee difficulties to come. Many obstacles block the way toward a solution of our problems. First is the fact that the average size of Moslem land ownership is too small. Three Moslem farms out of four are smaller than 25 acres each, and the Moslems own two-thirds of the farmland. There is no possibility of modern farming, and the Moslem peasant does not own enough collateral to obtain credit from the local bank. Furthermore, he does not really need credit since he has very little land and he does not farm for the market but just uses his products for home consumption.

It is now nearly twenty years since the general Government of Algeria decided that the solution lay in the constitution of economic units of farming, i.e. the regrouping of land into plots of sufficient size to be tilled by tractors. These plots are called sectors of rural improvement. They have benefited by all the facilities that a modern

farmer can use. That is why our programme in Algeria has helped to solve the problems of financing, motorizing, storing, harvesting, and marketing. These sectors of rural improvement have been set up for each type of farming: cereals, cattle, horticulture, and the results have proved satisfactory. It is a long-range objective and it is not always easy to find the land we need. Dr. Raeburn said that some improvements ran up against opposition because they represent a threat to the structure of the established order. This is not the case in Algeria though we have to use a good deal of persuasion and engage in large educational drives. I should like to thank the United States who have helped us with the Marshall Plan which enabled us to improve our transportation system, expand our irrigation networks, and develop rural electrification.

I have followed with interest the remarks concerning the reduction of the birth-rate. In Algeria this is an interesting problem too. But as regards the measures which have been proposed such as delaying the marriage age, which in Algeria begins at twelve or thirteen years, I must point out that they would not be successful. It would be very difficult to obtain the consent of the parents, and if we were to interfere it might well induce the Moslems to contravene the legal marriage procedure, and we should then have the risk of undeclared births. However, any international study of this subject could not fail to be of lively concern to those who are charged with maintaining a fair equilibrium between population and production in Algeria.

A. Antonietti, *Italy*

It is probable that the realization of the Point IV Programme and the Colombo Plan will bring about migratory movements of agricultural populations from one country to another. These movements may originate for several reasons: first from the development of some areas through works of reclamation and irrigation; secondly, as a consequence of increasing exodus from rural areas which can be caused by the growth of industrial activities; thirdly, from the lag between the natural increase of population and the demand for labour; fourthly, from the need to create agricultural activity. Moreover, in several countries the high wages and high standards of living in urban areas lead to a gradual migration from the country to the city, and local governments have to face the problem of supplying the farmers with a new labour force. Therefore, it would seem to me that there are important reasons for encouraging agricultural immigration. In the first place, a country may be particularly interested in maintaining its agricultural development. In the second place,

agricultural activities often give the best social results in the long run, especially if the farm workers can obtain ownership of the land and, with it, independence of life and work. In this way, important moral values, such as family unity, religious sentiment, and simplicity of life are promoted and maintained.

In the short run, however, agricultural immigration often fails to give very encouraging results, and I would point out some of the problems involved and suggest possible solutions.

The age and family conditions of the immigrants must be taken into consideration. Workers from twenty to thirty years of age can be readily absorbed by the local population and will also remain on the farms for the duration of their contracts, but the immigration of families wherever it is possible gives the best results. In many cases, of course, the farms do not have sufficient buildings for a new family, and this is often the main obstacle. However, immigration by families should be greatly encouraged because it gives a high degree of stability.

It is desirable that the migratory movements take place between regions that have, so far as possible, similar climatic conditions and types of farming. Preliminary studies to find out these similarities are necessary. This procedure has been followed by France and, I hope, will be followed in the future by Italy and Canada.

The immigrant must be a farm worker. By this I mean that he must have the mentality of a farmer, and as it is very difficult to find farm workers who are willing to emigrate and able to pay their own costs of transport, it is generally necessary to provide them with free transportation.

The immigrant should be told all about the people, the way of life, the climate, the wages, and the kind of work that he will find in the new environment. Also, he should be made fully aware of the responsibilities of the contract that he has to sign.

The qualifications of farm workers must be carefully scrutinized. Care should be taken that they are placed on those farms where they can use their earlier training to the best advantage.

Those countries that want to relieve their excess population should make every effort in the vocational education and training of prospective emigrants who will then be in a much better position to face the new environment successfully, to get high wages at the beginning, and to arrive at the ownership of land in the shortest time.

I believe these to be some of the really important constituents of the problem of agricultural migration, and there is no time more appropriate for discussing it than now, when the Conference is

concerned with fundamental plans for the creation of a better life in a better world.

T. W. SCHULTZ, *University of Chicago, U.S.A.*

I infer that the upsurge in population in California has affected both J. S. Davis and Karl Brandt, although in different ways, but adversely in both cases.

It is one thing to argue, as did Brandt in his paper, that the population variable is deeply embedded in fundamental values representing the culture and the importance of the family in its cultural setting. I have no quarrel whatever with his emphasis upon the fundamental nature of the values underlying family size, but it is quite another matter to infer from that proposition some of the things that Brandt inferred. It is invalid, for example, to infer that the population growth of no community under any conditions can be such as to create difficulties for the community. Several speakers have indicated from this platform that there are such communities where there is serious difficulty arising because of the prevailing disparity between birth- and death-rates and the resulting upsurge in population. One may accept, as I do, the value proposition which Brandt elaborated, but it does not support one of the major conclusions that emerged from his presentation, namely that we need not be concerned about population growth.

Brandt also presented us with a dictum, to wit: a rapid population growth acts as a challenge to a people and in doing so brings out the best in the community in its forward strides. This dictum says in substance again that no matter how rapid the population growth and no matter how poor the community, for there may be mass poverty and most people may be on the verge of famine, nevertheless, a growing population is desirable because of the *challenge and response* that it motivates. This dictum carries the Toynbee thesis altogether too far, so far that I doubt if any person would accept it in the context in which I have placed it.

Turning now to Brandt's remarks on Point IV: There was implicit in what he said that the Point IV programmes are in some way destroying certain fundamental values relating to freedom in the countries participating in these programmes. This is an exceedingly serious indictment. Does he mean by this that efforts to bring agricultural extension work to other countries impair the freedom of people in these countries? Are we to infer from this that our own efforts at agricultural extension work in the United States have also impaired our basic freedoms? If this is his belief, I certainly wish to be on

record as disagreeing completely, for I do not hold that efforts by Point IV programmes to establish agricultural extension work in under-developed countries do undermine the freedom of the people who benefit from them. The contrary clearly is the outcome.

I wish also to make one point on Brandt's reference to the T.V.A. He said that the T.V.A. represents a kind of extravaganza, a scheme that is extravagant in the use of capital. Surely, given the general economic conditions of the United States, including the supply of capital and the value of electrical energy to the economy, the investment that has been made in the development of T.V.A. has not represented an excessive commitment of capital. On the contrary, one can prove decisively, of course with the advantage of hindsight, that with the growth in the demand for electricity for industrial uses that has occurred in the last two decades, the United States has not pushed the development of the T.V.A. far enough. It should have invested substantially more capital in developing the power potential of the Tennessee Valley.

Let me be fair, however. What Brandt was endeavouring to say was that an enterprise which requires so much capital as does the T.V.A. may not be suitable to all countries that are exceedingly poor in capital resources, as are most of the countries in the under-developed group about which he was talking. This is a valid statement, but one must guard against the inference that a country which has an abundance of capital relatively, as is the fortune of the United States, should not have invested in the T.V.A. The facts are, as I have indicated, that this country should have advanced the T.V.A. much farther on the power side than it actually has, given the demands for the electrical energy and the cost of producing it by T.V.A.

Finally, let me close my remarks on a positive note and use this to criticize both papers. I should say, however, that I found myself substantially in agreement with the many insights which emerged from Dr. Raeburn's paper. Much of it was for me new knowledge. Nevertheless, we must make room for what I shall call the Lewis thesis, the view that has been expressed repeatedly by Professor Arthur Lewis of Manchester University. The fact is that the trading world experienced a long drought in international investments during the inter-war period. All too few capital funds were made available by countries in western Europe, by Canada, and by the United States to other parts of the world. Such capital resources were needed and are now required desperately to develop, among other enterprises, enlarged output of primary products. There is, therefore, certainly for the western European group, a strong self-interest in re-establishing

both on public and private account a large movement of capital to the under-developed countries.

My purpose now is to underscore the probable effects of such a development, namely, a marked increase in the movement of capital from not only the United States and Canada, but from western European countries for the purposes that I have suggested. One can readily demonstrate that given such a movement of capital, there will be no important problem in the trading world of absorbing the products of the industrial countries. The exportable surplus of the United Kingdom will look small against the demand and to this one may add the industrial exportable products of western Europe, including Western Germany, and also Japan and the United States.

This emphasizes an important choice in policy, namely developing the institutions, both public and private, which will permit and induce the necessary movement of capital. The stakes are large. One of these will be that the standard of living of western European populations need not level off abruptly. On the contrary, the prospects are indeed bright, for it is quite within the realm of possibilities that during the next twenty-five years the *per capita* real income of these populations will rise not only twenty-five per cent. but substantially more.

Somewhere along the line, when we consider the function of economic development and relate it to agriculture, we must see such economic development in a larger context, one which implies and requires large transfers of capital of the kind that I have commented on briefly, and then trace through the implications, both for what are now the industrial countries and for the so-called under-developed communities.

A. W. Ashby, *Institute for Research in Agricultural Economics, University of Oxford, England*

In connexion with the papers this morning I wish to raise the subject of transport, a subject which has not been considered in relation to the economic development of agriculture or the general economic development of backward communities.

Those of you who know the economic history of the United States will remember very clearly the great stimulus which was given to the general economy by the development of internal transport, canals and railways in particular, after the middle of the nineteenth century. If you were studying the history of the agrarian and the industrial revolutions in England in the eighteenth and early nineteenth centuries, it would not be long before you realized the enormous

contributions which the building of national roads, local roads, and canals made to those two revolutions. Not least among those three, as regards agricultural progress, I would put local roads.

I went to Wisconsin in 1914 and travelled a good deal in that State both south and north of Madison, but those of you who only know the modern roads could scarcely believe what the roads of Wisconsin were like at that time. Or you could scarcely believe, unless you had come to it fresh, the change in roads in Tompkins County, New York, between 1928 and the present year. But if you are looking at India in particular, or any of the so-called under-developed economies, in a practical way, you must recognize that no extensive development of agriculture, no commercial development of agriculture, no general increase in economic productivity and in commercial exchange, is possible in many great areas without an enormous development of both local and national transport facilities.

And there is one new factor in this situation which is important, namely that the administrative and executive classes, the merchant classes, who now have to travel in India and other countries with similar conditions, very largely travel by air. A century ago, or even half a century ago, those classes would have been concerned with other transport developments for their own convenience. They are no longer very much concerned with normal transport developments for their convenience, and they are prone to forget that other people cannot use air services in the way that they use them themselves. Use of air transport by special classes, or for special services, may retard development of other essential transport facilities.

Those facilities have to be considered not only in relation to the shifting of commodities, whether raw materials or finished products; they have to be considered also in a general social setting. We do not secure technological progress, economic progress, except by processes of cross-fertilization of ideas, by processes of imitation; and transport, particularly local transport, is one of the means by which we extend the range of experience, the range of comparison. It is one way by which we begin to give local rural and agricultural populations new experiences, new things and methods to contemplate, and to some extent new attitudes and values.

In England we have long had a statement that the farmer learns most quickly and most firmly by 'looking over the hedge'—'looking over the fence', as Americans might say. The more you develop local transport, the more you widen this process of looking over the fence and seeing what your neighbour is doing, the more comparison of

activities and methods, the more imitation, you secure. But you do more than that; you change the 'neighbour' from the next village to a village possibly ten, possibly fifteen miles away. You extend the range of reference, the range of experience, and the range of imitation, and also you begin to cross-fertilize ideas not only in the technical field, but in the field of consumption. And with reference to development of the under-developed communities, comparisons of consumption, ways of living, and the consequent creation of new wants is about as important as the production of more commodities. Indeed, in parts of India, I am quite certain that the first necessary process is that of creating new wants for which people are prepared to work, prepared to make sacrifices in order to satisfy their new wants. These wants are not there already; the dominant wants are of customary character—customary wants established in closed communities. In communities which are living on a subsistence level or barely above it, producing approximately 70 or 80 or sometimes a higher percentage of the commodities they consume, essentially closed communities, transport is a primary necessity in breaking down the closed character—whether that closed character applies to technical production, to consumers' wants, or to general social attitudes and social values.

Now I am quite aware that at this point a lot of people will say that you cannot develop transport facilities without large amounts of capital. According to my recollection, Dr. Brandt said this morning that 34 per cent. of the funds under the Colombo Plan were to be set aside for transport development. That seems to me to be a relatively small proportion. But in any case, if you are looking at the history of local transport in almost any country, you will find that it was not provided by any form of finance capital, and in many cases not by any form of local taxation. The earliest improvements in road transport facilities were made on the basis of local materials and communal labour. And in many parts of the under-developed countries, all that is necessary, or most of what is necessary, for very considerable improvements in local transport is organizing capacity, labour, and local materials. In many cases the draft power is there in the form of oxen or some other local type of animal. The surplus manual labour is there, at least on a seasonal basis. Recognition of the advantages to be obtained by organized effort, goodwill, and organizing capacity is chiefly required. Those are the main conditions of improvement in local transport. Rural populations do need taxation or loan finance when they need to build a steel bridge or something of that kind, but I would say that, far short of building what in America

you call 'black top' roads, there can be lasting improvement in local transport facilities for ox-carts, bicycles, and even for motor-cars, without very much in the way of money capital.

And as I am dealing with this subject, I would like to say that almost throughout the discussions of this Conference in relation to under-developed communities, the references to capital have all been to finance capital. We must realize in these days that finance capital takes three forms: investment capital, capital going in on an expectation of earning; philanthropic loan capital; political gift or loan capital. We may exclude the last class, but if we are going to depend upon large-scale investment capital, or philanthropic loan capital, for the development of under-developed communities, the contribution of finance capital to this purpose will be extremely small in relation to total needs.

Those of us who know the conditions of capital accumulation in agriculture, or generally in rural communities, know, or we ought to know, that saving of capital for agriculture does not in the main take money forms; it takes material forms of saving, adding two heifers to the herd, adding some young sheep to the breeding flock, getting some better hatching eggs; not selling but increasing the material capital available on the farm. And similarly, in rural communities, if we want service institutions, schools, institutions of the character of village meeting places, village clubs, clinics, almost any sort of service institution for rural populations, the easiest and quickest way of dealing with the situation is to begin to organize the community that recognizes its need on the basis of the organization of local labour, with local materials, and then obtaining whatever small amount of money is necessary for the purchase of external supplies. And it will be on the basis of recognition of need and utility, of saving material capital, of willingness to sacrifice, and of willingness to apply whatever can be saved in effective material forms to capital purposes, that we shall increase capital for agriculture—and, very largely, capital for rural service institutions.

If we keep on talking about finance capital to these under-developed communities, we shall entirely mislead them. They can do a lot of their own saving as soon as they begin to increase their production beyond the subsistence level without thinking or troubling very much about money. When they have achieved some expansion and have surpluses to sell, when the more radical changes in the economy become possible, the importance of money capital will arise. At that stage both taxation and privately saved capital may come into prominence.

J. D. Black, *Harvard University, U.S.A.*

I shall confine myself to four points. First, I agree with Professor Ashby that the growth of capital in agriculture normally includes, in the more developed countries, the growth of herds, the adding of new buildings, land improvements and the like, and that in the less developed countries there is much labour not fully employed that could be used to improve the land, build roads, and so on. But I must insist that progress is sure to be slow along these lines in densely populated countries because so little is left over each year after provision of the necessaries of life for the ordinary working farm population. This is especially true of the tenant class. If, however, the income of the landlord class could be used for land improvements, buildings, and livestock, instead of going into various forms of conspicuous consumption—castles and cathedrals, often, in olden times—progress would be much more rapid. Even in Latin America little of the landlord income goes into farm improvements. Only recently has it begun to go into industrial development. Investments of this sort are surely 'finance capital', I am sure Professor Ashby will agree.

Second, Dr. Brandt has made a sharp distinction between possible 'executive action' by F.A.O. and its 'advisory' function. Dr. Ezekiel has referred to F.A.O. as an instrument through which the different nations get together and agree upon a common programme of action. This is a function clearly intermediate between the two named by Dr. Brandt, and capable of becoming more important than mere advice.

As for Lord Boyd-Orr's proposed world food board, and the later proposal for international commodity clearing-houses to be sponsored by F.A.O. referred to by Dr. Brandt, both of these, and especially the first, come too near to executive action to be generally acceptable. But this does not mean that no international action to achieve better distribution of food supplies among nations is possible. The proposal for the commodity clearing-houses was made by a special committee set up in response to a resolution of the Technical Co-ordinating Committee of F.A.O. (composed of the chairmen of the International Advisory Committees) calling upon F.A.O. to set up facilities for bringing small groups of nations together to work out deals for exchanging products needed in one country and in surplus in another.[1] A specific example cited in the resolution was the

[1] All of these advisory committees have now been abolished.

skim-milk powder so readily available in New Zealand and Australia and so much needed to supplement the diets of children in the Far East and Africa suffering severely from a deficiency of animal protein. (The disease *quashkiorkhor* had not been named at that time.) It was stated that surely some products of India, Burma, Thailand, and the East Indian countries could be found to offer in exchange for the skim-milk powder. I have always been unhappy over the failure of the special committee to confine itself to informal arrangements of this type—in part, of course, because I was author and first proponent of the resolution.

It is still possible for F.A.O. to proceed along lines proposed in the resolution. When the clearing-house proposal was rejected, a special commodity committee was set up instead. It is still in existence, but has made very little headway as yet. A permanent staff of negotiators or intermediaries is needed in addition.

It is worth while mentioning again a distinction that was made in the early meetings of F.A.O., that between simple commodity *arrangements* and formidable commodity *agreements* that bind a group of nations to a fixed course of action over a series of years. Very few of the latter are likely to be made. Even the present wheat agreement may well be dead a year hence. But a dozen commodity arrangements could readily be in operation at one time if the F.A.O. had a strong staff at work helping to negotiate them when and where needed. Some of the arrangements might well grow into continuing agreements. It will be clear to the members of the Conference that helping to arrange these is neither executive action nor advisory service.

Third, as to the T.V.A. which Dr. Brandt cites as a poor example for other nations. The importance of the T.V.A. internationally is the example it furnishes of the co-ordination within a valley of all the natural resources—of farm land, timber, water-power, and other water uses, minerals, recreation—into one general integrated programme, and along with this the activities of the federal, State, and local government agencies, and of the community and larger private associations. This is an idea and approach which any nation can advantageously take and adapt to the particular set of resources and institutions existing in one of its valleys or other natural area units. As one who has observed T.V.A.'s workings over the past fifteen years, devoting at least three months of time to it on the site, I can testify that there is much in the T.V.A. experience that other nations can afford to study and fit to their particular circumstances. Many of the valleys thus developed in other countries will make greater progress 'percentagewise' than has been possible in the Tennessee

Valley, for in general it is an area with a low order of resources *per capita* relatively to the rest of the United States.

Finally, my most serious difference with Dr. Brandt relates to his population ideas. He apparently believes in conscious public measures, such as public sanitation to change death-rates, but not in conscious public measures to change birth-rates. I favour both. By the latter I do not mean the direct public measures that have received too much attention in the papers presented—such as control of age of marriage, for example—but indirect measures such as public education in general, and more specific information and health services that will enable people to have families of the size they want. General public education alone will help greatly. Dr. Lydia Roberts's survey of Puerto Rican rural families showed that mothers with very little education averaged 7·2 childbirths and those who had completed their primary school education averaged about 4 childbirths. Dr. Brandt is much inclined to talk about free enterprise and freedom in general. Freedom means many things to many people. Dr. Brandt apparently has not been in this country long enough to know fully what it means to Americans. It is a *positive* concept to Americans. It means, in terms of what we are now discussing, that I as a family man do not have full freedom until I know how, in a practical way, to have as many children as I want, and no more. Nowhere in the United States does full freedom in this sense prevail for all families. In Massachusetts, where I now live, public law even prevents setting up clinics to which families might go for information on this subject. Of great consequence to the world are the reports coming from India of the public measures now being worked out in that country.

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

I should like to make a few remarks on technical assistance and investment and the relation between the two. First, technical assistance: as it was organized in the last few years, it looked like an army of generals out on a battlefield and, I must say, with not too many soldiers and without a general staff. It could not have been done otherwise, but after two or three years of experience we now come to the stage where we see very clearly that technical assistance is not a short-term and easy job of just transplanting some technical know-how from one place to another. It is a long-term, life-time job for a great number of people. Also it is not just a flow of knowledge from western Europe and North America to all the rest of the world, it is a greatly increasing exchange of experience and knowledge between many countries. I think, for instance, that experience from

India to Latin America and vice versa can be very much worth while.

And then I think technical assistance is more than the name implies, for its name is misleading. We heard Dr. Raeburn yesterday and this morning saying quite forcefully that it is as much economic and sociological as it is technical. There are so many languages where 'technical' is related to engineering or chemistry that I should like us to get rid of that word 'technical' in relation to assistance. I believe that the social and economic parts of it are at least of equal importance. In almost every under-developed country a lot of advice is given and many reports are written by grey-haired experts, but one sees very few young people. As technical assistance is a long-term job, I do not think the universities in the United States can spare their professors long enough to undertake it. The young graduates have to take over; and, of course, the young people from India and Brazil and Mexico and countries of that type of development also have to do their part. I believe, therefore, that in the near future a need will arise for a well-trained corps of international civil servants similar to but different from the British or the Dutch or the French civil service in their colonies; different because it would not be linked to any national loyalty, but similar in having the same special training. I believe that universities in the United States, Oxford, London, the Sorbonne, and the American university in Beirut will have to train these people. In The Hague, at this moment, a combination of all the Netherlands universities is embarking on a programme of special training for young people who want to spend a large part of their lives in technical and economic assistance in the world at large. I believe the sooner the United States and all the United Nations agencies can decide on a long-term basis to maintain such a corps of international civil servants, the sooner we will find the solutions to a number of problems we have been touching upon at this Conference. In the so-called under-developed countries you will still see the grey-haired experts in the capitals talking with cabinet ministers—and Dr. Sen in his office—and travelling by plane through the country. But what we now need as well is workers in the field: people who really give themselves for the sake of the work which has to be done. I know that in many countries it is not so easy, even if you want to do it, to be accepted just on the working level in the field. In an experiment station it is easy, and somewhere in a university or training school it can be arranged. But in the economic and social field, most of the work has to be done in the village with the farmers. Therefore, I think it is indispensable that the young people going out should get

special training and that whatever the universities can do to provide such trained workers for the specialized agencies, the United Nations (and I think the M.S.A. and T.C.A. in Washington) will be most welcome. The International Bank also wants people who have the special economic and social training for work in these areas.

Another type of people who go out for technical assistance are the technical consultants, who go often in their private capacities. I believe they have a very important task, but I also believe that the Governments of the countries who hire them have not always had happy experiences of them. Often their fees are exorbitantly high. A university professor and his family could live a long time on the fees which an engineering consultant sometimes asks for a single job, which may not even be a very complicated one; but there is the glamour of employing the top knowledge of a technical expert. There should be more co-operation between the international organizations, the United Nations as a whole and the Bank where I work myself, to see that the private consulting engineers are fitted into a programme of development, because they can do much for the Governments of under-developed countries. Too often they want something spectacular, something very big and broad, transplanted from western Europe or from the United States right away to Asia, or Africa, or Latin America. And too often it happens that the projects from a group of experts brought in by the United Nations, or by F.A.O., after being presented in good faith to a Government and to the International Bank are found, in the end, not to fit in with the development programmes, or the credit-worthiness of the country concerned. And that, of course, makes for disillusionment. I know of cases where millions of dollars were spent on advice given by engineering firms which had to be laid aside because it proved to be impossible to carry it out. There should be a very close relation between technical assistance and international investment. If the United Nations were to be organized next year, instead of being developed over the last seven years, I believe that technical assistance and investment should be under one organization and not split over seven or eight as it is at present. We now can do no more than make the best of it and try to co-ordinate it as well as possible.

In spite of what Dr. Brandt said this morning, lack of funds is not the limiting factor in the work of the International Bank. The two main limiting factors are the need for improvement in the planning and presentation of projects and delay in their execution. In many cases it is absolutely necessary to have experts from abroad, not because those in the country are not good enough but because there are

not enough of them. The International Bank takes the line in many cases of inducing Governments to set up public authorities—railroad authorities, port authorities, road authorities—which are more or less separate from the normal government machinery. In this way it is a little easier for them to put the technical experts from abroad on a working basis. But my personal feeling is that if it could become the regular and normal thing for foreign technical experts to come and work directly with a Government still better results could be obtained. These public authorities, although they can be very useful, are not always an efficient solution.

CARLOS DERTEANO, *National Agrarian Society, Peru*

Yesterday and this morning a number of speakers have referred to the *Servicio* type of technical assistance as one of the most effective means for helping farmers to raise their standards of living in under-developed areas of the world. I am joining in this discussion because up to now Peru has had the greatest experience in this particular field. In 1943, that is seven years before the announcement of President Truman's Point IV, an organization pursuing very similar objectives and known as S.C.I.P.A. was already under way, achieving an outstanding and most unusual success. I will give you only a very brief outline of the set-up and scope of work that this inter-American institution is carrying on. The Extension Service with about forty rural agents and a number of assistant agents covers practically all the major agricultural districts of Peru. Machinery pools operate in several valleys strictly on a cost-of-production basis, that is to say they do not make any profits. Recently, for expanding this programme, a loan of 1,300,000 dollars was obtained through the International Bank of Reconstruction and Development, and I understand a more important loan is under careful study for financing other projects of economic development. It is worth while mentioning also the programme of demonstration farms for livestock and for agricultural crops.

The S.C.I.P.A. has also organized a system of 4-H Clubs that work closely with rural schools. The primary reasons for the great success of this organization can be summarized as follows: general economic studies are carefully conducted by the Economic Division before any rural agent takes over a given territory, thus providing him with up-to-date information with regard to general economic conditions, the area occupied by each crop, and values of the produce; specific economic studies are also carried out from time to time on such crops as wheat, rice, cotton, &c.; from the very beginning foreign tech-

nicians have always worked side by side with Peruvian technicians; very effective co-operation exists between the rural agents and the technical staff of the central office; and, last but not least in importance, are the scholarships granted by the United States Government to Peruvian graduates from the Agricultural School of La Molina.

Peru is perhaps one of the few countries in South America that are beginning to receive all the benefits from a free economic system, as far as this term is applicable at the present time. For the development of the country's natural resources we do not expect foreign investors to meet our total capital requirements. Their first concern is the possibility that capital and profits can be withdrawn from the country in currencies of free convertibility, and that their investments will not be subject to expropriation nor to any discriminative action as far as taxation is concerned. Laws and regulations favour the importation of capital and no control is exercised whatsoever. Peru is endeavouring to achieve a parallel development of its agricultural and industrial activities in order to raise the level of living.

All capital goods are practically free from customs duties. The application of a relatively liberal import tariff has resulted in a closer relationship between the unit values of exports and imports, or in other words, a more favourable ratio than the one that existed in the pre-war period.

A vast irrigation plan is being carried out in my country with the object of increasing the cultivated area of the coastal region by approximately sixty per cent. Naturally such an ambitious plan will require a total investment of as much as three times the national revenue, but it is to be expected that because of prevailing economic conditions and the soundness of this type of investment, foreign capital will flow into the country in increasing amounts. Also a five-year food production programme, initiated last year, will endeavour to expand the production of meat, wheat, and rice in order to reduce the imports of the two former commodities and be able to export the latter in the near future.

A. T. MOSHER, *Allahabad Agricultural Institute, India*

There were three phrases used by the two speakers this morning which caught my attention. One was a quotation which Dr. Raeburn used: 'the self-sufficient, self-satisfied, self-sanctioned primitive economy'. The question which this quotation raised in my mind is this: 'What would we put in its place?' What would we like to see in place of a self-sufficient, self-satisfied, self-sanctioned economy? Without attempting an exhaustive statement of the alternative, I presume that

one of the characteristics on which we would agree would be a 'self-generating' or a 'self-initiating' economy, an economy which solved its own problems rather than being continually dependent for their solution on external sources.

The other phrases which caught my attention were those of Dr. Brandt describing certain obstacles. He used the phrases 'negative emotions and prejudices', and 'a mountain of rural inertia'. I think all of us, including the speaker, would agree that these phrases are a kind of shorthand expression, intended to indicate that we recognize the fact that technical assistance is not an isolated activity but is enmeshed in the whole culture of a people. Perhaps, also, the use of this shorthand indicates that we are not quite so sure we understand the whole culture as we are that we have a right to talk about technical assistance.

Technical assistance (or even technical progress) is not an end in itself; it is instrumental. The three types of technical assistance which we are discussing today are F.A.O., the Colombo Plan, and Point IV. Each of those organizations was set up for a purpose: in the case of the Colombo Plan and Point IV we would agree that the purpose, at least partially, was a political one. How is it that a technical assistance programme contributes to a political purpose? In most cases, I believe, people back a technical assistance programme because they believe that technical progress is a prerequisite to establishing conditions in which free institutions can develop and flourish.

If I were to attempt, as an agricultural economist, to state the greatest need in southern Asia, I think I would say that the chief under-developed resource of such so-called under-developed countries is the people of those countries. It is the undeveloped ability of those people to make choices. It is their unrecognized right to make choices. It is their immersion in a traditional culture which does not encourage the making of choices by individuals. Technical assistance is important because it helps people to begin to make choices, and to begin to solve their own problems. But preferring to speak not as an economist but as a human being, I would say that although in the Colombo Plan and in the Point IV Programme technical assistance was seen as contributing to (and probably as being prior to) the development of freedom by raising the standard of living, I am inclined to believe that technical assistance in agriculture and home economics is the biggest opportunity for direct education in freedom for the people of the countries we have been discussing.

Any realistic education proceeds first by selecting an opportunity for decision which is meaningful to the learner and, secondly, by

instructing and encouraging him in the making of that decision. Now, in the greater part of southern Asia, the only decisions which farmers have an opportunity to make are choices in agriculture or in home life; and the women have opportunities to make choices only in home life. Therefore these programmes of technical assistance which we are discussing are the best avenues we have for adult education in free living and it is their effect at this point, rather than any change in the standard of living, which is the real measure of their success.

May I make two brief additional statements, without taking the time to support them? The first is that private agencies of philanthropy, such as foundations, can play a much bigger part in the development of these countries if they work through private agencies than if they work through governments. In those parts of the world which have not known what we call free institutions, most people conceive of a free economy as being a single monolithic representative government. They have no conception of the multiplicity of overlapping and conflicting governments which we have, for example, in the United States, nor of the very large role of non-governmental agencies and voluntary societies. The more often technical assistance can operate through non-governmental agencies in these countries the more they can help to develop the diversity of free action within a society which can build the values toward which technical assistance is intended to be contributory.

Secondly, I wish to reinforce what was said just a moment ago about a longer term of service for personnel in technical assistance programmes, and, combined with that, to urge a greater emphasis on F.A.O. as over against Point IV. The longer term of service for personnel is essential because these men must be experts, not just in a particular technical field, but, first, in the interpenetration of their field among all other technical fields within a culture, and, secondly, in the *processes* of intercultural interpretation and adaptation. F.A.O. is in a stronger position than programmes like Point IV, because it is multinational rather than binational. When F.A.O. goes into a country there is no suggestion that a single other country is attempting to interfere in affairs which are not its own. And, furthermore, F.A.O. is not under the same compulsion for publicity which is nullifying some of what is being done by Point IV. The objectives which technical assistance can serve are very long-term objectives. The contributions of technical assistance cannot be made in a short period of time. They cannot be made fast enough to impress taxpayers in any one country to support a unilateral programme, unless

they are exaggerated. They must be carried on over a long period of time, by men who have had long experience, not only in their own fields, but in the processes of intercultural adaptation.

J. P. BHATTACHARJEE, *India, and University of Illinois, U.S.A.*

My first comment relates to the first part of Dr. Raeburn's paper in which he supports the attempts of Dr. S. H. Frankel to redefine the concept of colonization and to draw fine distinctions between income and welfare. So far as the new definition of colonization is concerned, I think it is an attempt, honest of course, to remove the stigma attached to the word in most people's minds. With regard to the distinction between income and welfare, it is right to remember that income is not always a measure of development and welfare, and that the two are not strictly comparable on the same plane.

Many of the speakers here have referred to the need for investment in different projects. But none of them seems to have clarified the investment criteria adequately. Much of the controversy about the relative merits of different types of investment could, in fact, have been avoided if there had been some discussion of how to evaluate them. Broadly speaking, there are three economic criteria that have been discussed in the literature on this subject. The first is what has been called capital-intensity of alternative investments, by which nations engaged in reconstruction or development should concentrate on capital-light investments. This is not a satisfactory test, for the rate of capital turnover indicates merely the ratio of capital to other resources employed in the industry. It cannot make use of the marginal principle, and fails to show when to stop the substitution of the plentiful factor for the scarce.

The second criterion relates to the nature of the ultimate product. The rule here is that a large portion of the investments should be channelled into projects that would yield additional export (or import-displacing) goods or services. It is held that this insures against an adverse trend in the balance of payments after the period of capital formation. The rule is based on the assumption that while capital formation takes place as a result of initial investments, domestic production will remain as undiversified as before. But, in fact, along with the expansion of the export market there will also be an expansion of production for the home market. Hence, the danger of balance-of-payments difficulties is considerably exaggerated.

The third criterion applies only to foreign loans and investments, and suggests that foreign loans should be made only to cover the direct foreign exchange requirements of specific development pro-

jects, the domestic expenditure part of them to be financed from home savings. This rule obviously does not take into account the productivity of the investments and the possibilities of repayment. It will tend to cut down foreign loans on development projects in the fields of, say, transportation and power; for these require heavy domestic expenditure for which no loans would be made. It will also tend to accentuate the severity of exchange controls.

It is obvious, therefore, that any one (or all) of these criteria is quite inadequate for evaluation and selection of projects for investment. The problem is one of making the maximum use of limited resources, in other words, of using them in such a way that the net contribution to the social product is maximized. The test of this is provided by the old marginal principle, with the only difference that here we shall be dealing with the marginal social product. The technique of benefit-cost analysis, if it can be pushed far enough, can be used to apply this marginal principle. The difficulties in the measurement of social product and social cost are formidable, however, particularly in the case of under-developed countries. National-income accounting in these countries is either conspicuous by its absence or at best in the primitive stages. Statistics are meagre and often unreliable. But it is precisely in this field that the international agencies have a large part to play. They can contribute quite a lot by helping these countries to prepare their national-income accounts with all the breakdown of the figures necessary. This would naturally go a long way towards improving the estimates of benefits and costs of investment projects and enable their merits to be compared, while the problem of priorities would not have to be attacked arbitrarily and, more or less, by rule of thumb as at present.

J. R. RAEBURN (*in reply*)

The most important fundamental question in our discussion seems to me to be this: 'Are the ways and means to be wholly voluntary, or partly involuntary?' Only if we ignore the difference between income and welfare, can we avoid this question in framing policies for the development of the poorer countries. The question also underlies the suggestion that Technical Assistance should be related to pre-agreed changes in land tenure and property redistribution. And I am afraid it also underlies Professor Ashby's suggestion that people can be induced to save-invest, even though their incomes are exceedingly small. I would be the last, I think, to say that the community development and welfare projects now being carried forward in various countries are on the wrong lines. In large degree

they are admirable. But let us be careful that we do not, as Professor Brandt has said, cross over to involuntary methods when we begin to think that because some people say—some committee says—there should be saving to raise incomes and to help to bring in new ideas, such saving should be made compulsory. Compulsory labour on woefully inadequate diets can be tragic. And what a majority opinion is in many poor countries is difficult indeed to determine properly.

Much of the rest of the discussion I would like to sum up through two quotations.

The first is anonymous. I heard of it in the States some years before the war. 'An expert is a wise-guy a long way from home.'

The second is from John Dewey: 'The ultimate problem of production is the production of human beings'—the emphasis is on 'human', on character. 'To this end the production of goods is intermediate and auxiliary.'

K. BRANDT (*in reply*)

With your permission, Mr. President, I should like now to reveal your clandestine orders, under which I prepared my paper: these were to stir up a maximum amount of discussion. After this day's discourse I am satisfied that I lived up to your expectations.

In the discussion that followed this morning's session I was taken to task on the subject of private enterprise versus government enterprise. I would be deprived of one of the great satisfactions in my life if Dr. Ezekiel—whom I have known for twenty-two years—and I were to come to the point where we no longer had any differences of opinion. How dull a world that would be! But I shall refrain from engaging in heated doctrinaire discussions about the ideology of private versus public enterprise, both being means and not ends to me. In all cases the really pertinent question ought to be: what is the more appropriate form of enterprise, which one will best deliver the goods at the least total cost to society, including the intangible ones? In most cases this test definitely will lead to the choice of private enterprise. I take the same view on the question of co-operative associations as a form of enterprise. They are also a means to an end. Where the co-operatives prove themselves able to render better services than private merchants, companies, or corporations do, they should be chosen as the form of enterprise.

I have also been taken to task—as I had expected—for what I said about the T.V.A. as a model for the development of countries. I feel that Dr. Schultz interpreted very well what I wanted to say. I was not

talking about the merits or demerits of the T.V.A. as a multiple-purpose project in this wealthy country, but I did question the applicability of this type of power project to under-developed countries with their extreme scarcity of capital. I still maintain that there is an inevitable order of sequences in the economic process of development, and I doubt very much whether fifty, sixty, or seventy years ago it would have been wise to allocate that amount of funds to this sort of tidying up of some of the tricky and poor natural resources of this country as was done in the thirties under the T.V.A. I happen to know what the T.V.A. is and what it is not, and I should be the last one stupid enough to deny that within that authority a good deal of wonderful work has been done. But this was not the question that I was discussing.

When it comes to Dr. Ezekiel's obsolete claim that the T.V.A. was an electric-power yardstick, I want only to quote a man for whom I have great admiration and who knew what he was talking about—David Lilienthal, the former chief of the T.V.A.—to whom I posed the question: 'How do you allocate costs in a multiple-purpose project like this to specific single purposes, such as, for example, power production? How can you develop the "yardstick" for power prices to the consumer?' He immediately abandoned the attempt to claim the possibility of a yardstick by saying, 'Of course it is thirty per cent. calculation, thirty per cent. speculation, and the rest is horse-trading'. I paid my respects to this disarming and sound judgement upon that argument. But I would say that the nice story about the T.V.A. forcing down the electricity rates of private power companies throughout the country belongs in the realms of fable, like the fairy-tale that private enterprise and the greed of rugged individualists in this country dumped all the inherited fertility of the land into the Mexican Gulf.

As to Dr. Ezekiel's disagreement with what I said about the present emphasis in F.A.O.'s major strategy, I recommend that he have a talk on this point with his chief. In order to make sure that I was not misinterpreting F.A.O. policy, I not only read carefully the Director General's annual reports and the Conference Proceedings, but checked my observations in personal conference with Mr. Norris E. Dodd in Rome a few days ago. Hence, with all due respect to Dr. Ezekiel, I feel that what I reported was correct.

With reference to what I had to say on the priority task of extension work, Professor Schultz's comment puzzles me. I am the last person in the world who would infer that extension-service work would impinge on the farmer's freedom. On the contrary, I believe

that the extension service is one of this country's greatest agricultural inventions and that it has made extraordinary achievements; but I do not see how, by trying to get his foot in the farmer's door to persuade him to change his views, an extension-service man is trespassing on that farmer's freedom. I must have expressed myself awkwardly for such a conclusion to be drawn. And I did not suggest that Governments should move farmers around. I do not believe in this business of 'pushors' and 'pushees'. I would refer here to Professor Ashby's wise remarks about intellectual cross-fertilization. If farmers want to migrate, and their Government or other Governments enable them to do so, it will naturally have the beneficial effect of mixing or cross-fertilizing various sets of knowledge and skills. Migration always has been one of the most effective forms of transferring knowledge.

One of the most profound subjects I touched upon is related to this controversial question of birth control. While I consider it my duty to warn my colleagues in this international conference against succumbing to the popular propaganda of the great scaremongers, I do not go out on the tangent of believing that high-population pressure cannot or does not create serious difficulties for communities. This world is too full of the demonstrated effect of this population pressure, and I would be the last to fail to recognize it. However, the question is how to get at it, and on that I firmly believe that the short-cut method is the one thing that we must definitely avoid. The desirable change has to come through adjustment by free processes of adaptation in the thoughts of the people, and this can come only as the co-ordinated force of social processes by which whole communities slowly but surely change their standards.

There is one additional notion on the development of the world's less developed areas I should like to mention: in my view, we can hardly place enough emphasis upon western Europe as the origin of the future resources for the speedier development of retarded areas. One of the greatest shortcomings in the thoughts of this country concerns this very thing. Nearly all Americans, when they think about Point IV policies, take it for granted that the Europeans have become an aggregation of paupers. In sharp contrast to this popular evaluation, I take it for granted that by far the greatest resources for the development of the world's raw material exporting countries still lie in Europe, and that consequently we must see that the Europeans come to the fore in such policies. Without European participation in the development of under-developed areas, this gigantic job of colonization, development of agriculture, and industrialization just cannot be accomplished The Europeans have millions of skilled

people with the urge to emigrate. And they have industries that will supply the goods needed.

A point that probably did not come up in our discussion, but which I believe is exceedingly important in the strategy of agricultural development, is the 'concentration of effort' that is necessary. In trying to explain clearly what I mean I would like to go back to my earliest professional experience, which was in extension work in the heaths of northern Germany. There, following the late Professor Theodor Roemer's model for large estates, I founded in 1921 the first 'agricultural experiment rings' among family farmers, which did exactly what the community development programme is trying to do in India. What concentration of effort did we choose there to move the mountains of inertia? One man—a trained, skilled man who came from an agricultural college—worked with thirty-five farmers, who were the most responsive and most active leaders of a county. I chose the limit of thirty-five, because this would allow the extension man to visit each farm from five to seven times a year. We limited the assignment in each ring to the very narrowest scope of activity—in one of them to the most advanced seeding and cultural methods of growing rye, in another to advanced methods of potato culture, and so on. A few of the key problems in production were tackled, and it really bore fruit. After an absence of thirty-one years, I recently went back into that part of Lower Saxony, and had the greatest tribute paid to me in my life when the elders among the farmers told me: 'You are one of those who laid the foundations for the tremendous development you now see before you—the successful conquest of the heath is to a large extent the result of your work.' Indeed, I believe that it was there that I really influenced agricultural affairs more than any other time during my subsequent career as a government adviser or in other positions. I believe that in the proper concentration of extension work lies one of the greatest opportunities for success in development activities. If properly selected, its imitation by other farmers does the rest—that is by providing the multiplier effect.

I come now to the comments of Professor Black, with which to a large extent I have no particular quarrel. I appreciate his having felt the urge to put me in my proper place by pointing out that after having lived in this country for twenty years—a period I look upon as my second life—I am still merely a newcomer. But I am somewhat puzzled as to his meaning when he says I am such an ignoramus that I do not know what is meant by freedom in the United States, because he complains that in the part of the country where he lives—Massachusetts—the people lack freedom. I wish I knew the answer to the

riddle of why Professor Black does not do something about this situation in his own area. I can assure him that I know freedom when I see it, and am satisfied that by living in this country I am in the area of the world where, fortunately enough, there is no regional limitation of freedom, and where we have one country united under freedom. This freedom was secured in a bloody civil war and cannot be suppressed.