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Some Remarks on the Criteria in the International Finance of Agricultural Development

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I. *Introduction*

Economic history raises the question why economic growth has been significantly more rapid in some societies than in others. Repeated efforts have been made to identify the factors mainly responsible for historical economic changes for use in normative models. Friedrich List's concept of organic growth by transition from hunting and pastoralism to pastoralism and agriculture and finally to agriculture, industry and commerce is essentially such a normative model. Its automatism is overcome by List's recognition of possible stagnation at each stage, caused by either internal or external factors. Karl Marx emphasizes the importance of savings (capital accumulation) and stresses the implications of quality of both labor and capital. For him the transition is dependent on expanded reproduction, enabling the creation of "surplus-value", that is savings and its allocation to investment. Investment becomes the strategic variable in the process of economic growth. Schumpeter adds to this the human–the entrepreneurial–dimension, technological innovation, and the continuous re-combination of factors of production.

More recent students of economies such as Keynes, Harrod, Domar and Rostow put the stress on one outstanding quantitative factor: investment. Growth economists such as Lewis, Hirschman, Leibenstein and Gallbraith still emphasize the strategic variables of growth and investment but begin to appreciate the complicating factors of population, infrastructure, priorities and criteria for investment, leading sectors and their linkages.[1] This discussion of the dynamics of economic growth spans a century. What has emerged clearly is the pre-eminent significance of the rate of savings and of the economic quality of investment. It is the enhancement of the latter–the quality of investment–to which these remarks on the criteria in the international finance of agricultural development are directed.

International transfers of capital for economic development are not new. South-eastern European countries were frequent borrowers in western European capital markets throughout the 19th century.[2] Up to World War I productive foreign indebtedness characterized even an economy as powerful as that of the U.S.A. What is new is the scale of such transfers, the organization of the transfers, and the realization on the part of lenders that the terms of capital transfers must be commensurate with the developmental prospects of the borrowing countries and their debt servicing capacity.[3] What is also new is the increasing importance of public transfers, especially for agricultural investments, and the associated change in objectives and criteria.[4]

Criteria applied to international financing of agricultural development must be seen in relation to this new framework of international capital transfers. The following remarks on criteria in the international finance of agricultural development are limited to those which have evolved and are still evolving as the agricultural lending experience of the World Bank and IDA expands. The share of these two institutions in international capital transfers for agricultural development—as distinct from general aid transfers—has grown sufficiently rapid in recent years, and their evaluation methods have been tested on a large number of cases, to provide a reasonable sample from which to draw some general observations on financing objectives, evaluation criteria, and their practical application.

II. *Objectives*

The finance of agricultural development, as indeed that of any economic activity, can be oriented towards a set of three essential objectives:

(i) maximization of profits, or what may also be termed the entrepreneurial objective;
(ii) social welfare, or the political objective;
(iii) economic growth or the developmental objective.

Any one of these may be in conflict with the others, or may also partially or even wholly coincide with them. An ideal economic policy would attempt the creation of conditions under which these objectives become mutually reinforcing. Given such an ideal state of affairs, the incentives provided for the entrepreneur enlist his efforts in the interest of economic growth which is, in turn, adequately distributed to maintain social peace. Unfortunately this level of harmony still remains beyond our reach. Therefore a choice must be made as to where to put the emphasis.

International finance for agricultural development, such as provided by the World Bank and IDA, quite obviously cannot be concerned mainly with just the maximization of profits or the political objective of social equality. Those farsighted men at Bretton Woods and the founders of IDA made it unmistakably clear that these institutions must have as their foremost objective the acceleration of economic growth.

These men were acutely aware of the errors which had characterized so much of the international financing of the past, particularly during the period between the two world wars. International capital transfers had frequently made little or no contribution to the productive capacity of the borrowers. Many loans had been made without reference to the ability of borrowers to service existing or additional foreign debts. The terms and conditions were largely geared directly to the interests and requirements of the capital markets. These lending practices undoubtedly contributed to the widespread defaults in the early 1930's.[5]

Consequently the Bank's charter contains a number of restrictive provisions:[6] There must be satisfactory evidence that the additional long-term foreign debt incurred can be serviced. Loans must be made for productive purposes and, except in special circumstances, should finance only the foreign exchange requirements of specific projects of development. The merits of all projects to be financed must be carefully studied and arrangements made to assure that the most useful and urgent projects are dealt with first.

IDA's Articles of Agreement are essentially identical as regards the general criteria for the use of its resources. Its purpose is defined: ". . .to promote economic development, increase productivity and thus raise standards of living in the less developed areas of the World included within the Association's membership".[7] It must also be noted here that the distinction between World Bank and IDA finance does not relate to the criteria for the ultimate use of resources but to the repayment conditions. World Bank loans are generally repayable on terms reflecting the needs of the specific investment proposal. Repayment terms for IDA credits, on the other hand, are designed to alleviate the balance of payment burden and to recognize low levels of per capita income. While IDA has therefore often been regarded as the "soft window" of the World Bank it is in fact so, only in relation to the foreign debt servicing capability of a country but not in terms of the evaluation criteria applicable to a specific investment proposal.

With objectives thus defined one can proceed to drafting lending criteria of which there are three in this sense. First of all there is the obligation to assess a country's credit worthiness, that is its external debt servicing capacity, to determine its eligibility for World Bank or IDA finance. Secondly, finance must be directed towards the creation of productive capacity in terms of specific projects. Thirdly, the most useful and urgent projects must be attended to first, in other words priorities must be conscientiously established, with due attention to considerations of economy and efficiency and without regard to political or other non-economic considerations.

The methods and criteria employed by the Bank and IDA in the evaluation of agricultural project proposals, and in the granting of loans and credits for their financing, thus derive directly from the basic objective of economic growth. It follows that there are two of these criteria which govern the finance of agricultural development specifically and from which all other subsidiary criteria derive their place in the decision-making process: the establishment of economic priorities and the financing of specific projects which enlarge the borrower's productive capability.

III. *Establishing Priorities*

The need to establish an economic priority for a particular investment requires an analysis of the economy at large. The level of aggregation at which such analysis must necessarily be conducted will often enable not much more than a positive identification of a priority sector, such as for instance agriculture, and within that sector the expected priority contribution. The latter may well be defined in terms of foreign exchange earnings or savings, the contribution to the targeted rate of growth of the gross domestic product, or even in terms of a physical output target.[8] Even in the more refined five-year plans of developing countries only a fraction of the proposed development outlays is usually based on specific action-oriented proposals. They usually lack sufficient detail to permit the application of quantitative tests to demonstrate the consistency—or otherwise—between the assumptions underlying the aggregative model and the resource demands, or to check contributions the specific resource use is likely to make.[9]

Macro-economic planning and analysis must therefore be reinforced by sectoral programming. Macro-economic magnitudes such as overall growth rate and savings rate targets must be related to projected sectoral investment and growth patterns; the supply and demand relationships between sectors must be understood; and the surpluses and deficits between projected savings and investments must be analyzed for their impact on the balance of payments.[10]

This exercise can, of course, vary in refinement. But whether elaborate econometric techniques are employed, or well informed and seasoned qualitative judgments are accepted instead, these relationships—implicit or explicit—always bear on the decision-making, that is, on the positive determination of priority activities and therewith on the allocation of resources. Once priorities have been identified and decided upon, what is known about the details of specific resource uses is frequently still inadequate to project with confidence their costs and benefits and the timing of their occurrence.

IV. *Formulating Projects*

Bank and IDA experience has been that the most effective way to prepare for an investment decision concerning a specific activity is to formulate it in terms of what has come to be known as a "project". In Bank/IDA usage, a project can perhaps be best defined as a set of co-ordinated activities, consuming goods and services in the creation of productive assets, from which a continuous stream of economic benefits will flow over time. This definition is silent on who incurs costs and to whom benefits accrue. And indeed, in the practical application of the project concept, a multiplicity of entities, separately responsible for investments, operations and the attainment of benefits, may be and often is involved, especially in agriculture. For example, a Government department may be responsible for construction of project facilities while an autonomous entity is created to operate them for the benefit of individual farmers. Of course, this makes the assessment of institutional and administrative aspects not easy. Nevertheless, for analytical purposes and in order to clarify the interdependencies—technical, institutional, financial and economic—a project is often abstractly formulated so, as if it were a single entity.

Several disciplines must participate in the formulation of a project. The development of land and water resources often entails extensive engineering works which must be designed and costed by engineers. The suitability of the natural resources for the intended purpose must be ascertained. The use of natural and human resources must be planned, and the most appropriate level of technology for the production process chosen by competent agriculturists. Organizational and administrative requirements must be defined and the institutional structure shaped for the implementation and operation of the project.

Economists must integrate the engineering and agricultural aspects to formulate a plan which ensures, in their parlance, that inputs are so distributed to the various uses as to equalize the marginal value product in economic terms of an added unit of input in each alternative use within a given set of constraints. To determine this requires a number of ancillary analyses. For example, cost data must be reviewed to see whether nominal costs reflect real economic values, or whether the introduction of some form of shadow pricing is justified. A critical path must be traced to ensure proper timing of supply and construction activities. The likely rate of acceptance of technological innovation by the participating producers must be judged. Market prospects for the output must be analysed and the marketing system surveyed. The effectiveness and reliability of input supplies and other supporting services must be ensured.

Project planning involves the many problems associated with predicting prices. This, in turn, requires knowledge of both supply and demand functions. Worthwhile projects are often oriented towards production in which a country is expected to have some comparative advantage in the future. But rarely do project economists have at their disposal general equilibrium studies which show optimum levels of production of several interdependent products. Therefore, informed assumptions must be made about future terms-of-trade, within the framework of partial analysis, to assess the comparative advantages of products in world markets.

A good project design is likely to be found only after trial and error and prolonged study of the more apparent intrinsic alternatives. For instance, different assumptions on prices at varying levels may lead to changes in proposed cropping patterns and possibly cropping intensities. In turn, this may require changes in the irrigation regime, which could then entail modification of proposed irrigation works and their operation. Construction costs may thereby be affected as well as the foreign exchange component and a shift may be indicated from a capital intensive/low operational cost project to one which is capital extensive but involves high operational costs.

The application of refined quantitative technique to problems such as these has become possible through the computer. Normative linear programming has been used to check whether returns are being maximized; herd growth models have been developed to predict the development of beef herds under a given set of assumptions using specifically developed technical coefficients; simulation analysis has been employed to test the operational consistency of complex systems. However, it must always be remembered that these techniques are being used for long-term predictive purposes. The uncertainties surrounding any forecast of future events can be catalogued in terms of probabilities but they cannot be overcome by refinement of quantitative treatment; results can only be as good as the subjective judgments which provided the base for quantification in the first instance. Quantitative techniques can nevertheless be helpful in testing the internal consistency of numerous subjective judgments.

V. *Evaluation Criteria*

From an economic point of view, an acceptable project is one that represents a good use of resources in a country at the particular stage of its development. A judgment as to whether a project constitutes such a "good use" should be based conceptually on a comparison of any specific use of a resource with alternative opportunities.[11] If all known investment opportunities were formulated as projects, in the form described above, such a comparison could be made and the economic price of the one project defined in terms of the benefits foregone by not doing another.

In practice, it is virtually impossible to measure the benefits of one project in terms of the excluded margin of the next. But some measure of a project's "opportunity cost" is at the heart of any economic appraisal. The selection of appropriate investment criteria must be based on a judgment of how well they serve to meet this fundamental purpose of measuring the comparative advantages to the economy of using resources in different ways. It is obviously hazardous to evaluate projects completely in isolation. As Bank/IDA lending practice has been evolving, it continues to push in the direction of relating projects to sectors, regions, and larger units of analysis. In this sense discussion on the economic justification of a specific project involves the confirmation–or otherwise–of the priority which was determined *a priori* in a macro-economic or sectoral context.

Even if a project's priority has been determined in a sectoral context it is still necessary to apply some objective test of its economic acceptability since, as described in Chapter IV, crucial factors pertaining to costs and benefits and their timing will only become known after detailed formulation and preparation of a project has been completed. Here a number of quite specific tests can be applied and these frequently tend to be the measures which predominate discussions of investment criteria. They include, for instance, the earning power of resources invested (rate of return); the discounted value remaining after all costs have been deducted from the gross benefits over the life of a project (net present value); the ratio of discounted benefits and costs (benefit/cost ratio), and the length of time within which society could recover the capital investment (pay-off period).[12] The first two criteria are most commonly used in public sector project analysis. Both employ the discounted cash flow technique and differ essentially only in the treatment of time preference.

The quantitative test usually applied to agricultural development projects by the Bank and IDA is the internal rate of return. Its predictive capacity, as well as that of any other investment criterion, depends, of course, both on the quality of project preparation and on how well the analyst has succeeded in adjusting for transfer distortions throughout the economy. There can be numerous origins for such distortions: price policies, subsidies, over-valued exchange rates–to mention only the most common. The objective in adjusting for distortions obviously is to replace nominal values with real values, that is to exclude artificial or institutional effects which might bias the outcome of the economic analysis of an investment prospect. The elements requiring special attention from this point of view are taxes and subsidies, capital and labor costs, and commodity prices. Equally important is the attribution problem. Benefits need to be defined in terms of increments attributable to specific investments. As an operational short-cut the practice of project evaluation has evolved the "with and without" principle for this purpose. In evaluating the costs and benefits of a project two situations must be compared: the expected development with the project and the estimate of development that might occur without it.[13]

Considered in isolation the internal rate of return—as well as all other similar investment criteria—obviously cannot say much about a project's usefulness and economic priority. It must be compared with alternatives. A direct comparison is not practicable because a full range of alternatives are usually not formulated and prepared in a form which could make such a comparison meaningful. But an operational short-cut can again be employed to extend the basis for comparison. The earning power of a proposed use of resources should exceed, or be at least equal to, the "opportunity cost of capital" in a given economy. If the rate of return is below this opportunity cost, the investment in not likely to represent a good use of resources. While this may not ensure that the best project is being attended to first, it will at least prevent wasteful decisions. To be meaningful, of course, this requires some estimate of the opportunity cost of capital. Theoretically, the prevailing interest rates should reflect both the time preference of consumers and the returns which can be earned on investments. Under conditions of equilibrium, new investments would be undertaken up to the point at which the returns on the marginal investment would be equal to the interest rate. In the real world the facts are very different. Capital rationing, captive capital markets and public sector interferences may make prevailing interest rates quite unsatisfactory indicators of the real cost of capital. Nevertheless, they are used as one basis for forming a considered judgment on real capital costs.

Though simplistic when compared to the conditions demanded by abstract theory, the project evaluation approach described here has proven to be an operationally helpful tool in the decision-making process. In particular, it provides for an attempt to relate a specific and isolated action proposal to the sectoral and macro-economic frame in which it must exist. What it does not yet do is to relate the requirements of the project unit, in the abstract, to the response mechanism of the individual decision-making units within the action sphere of the project as defined, that is, to the farmers. And it is in this area where the project analysis in agriculture, as distinct from that of other projects, needs a further dimension. T. W. Schultz has told us that traditional agriculture is characterized by a particular long-run equilibrium under which farmers have achieved a relatively efficient allocation of the agricultural factors of production at their disposal.[14] With the advent of a project new economic opportunities become available to numerous farmers, and some judgment on how they will respond is already implicit in the scale of benefits assumed to emerge over time. An analysis of the downward linkage must confirm this judgment and provide the rationale for policy prescriptions which would influence farmers' behavior in the direction of "exhausting" the newly created opportunities.[15]

Any evaluation of an agricultural project is therefore incomplete if it is not supported by an analysis of the project implications for the individual operating units. The full implications of uncertainties, of differential time preferences, and of nominal costs and prices must be explored in this assessment. A judgment must be made on the incentive levels needed to provoke response and on its timing. This is as much a question of the measurable economics inherent in a situation as it is of the immeasurable determinants of human behavior. In this sense Schultz' insistence that "...differences in the capabilities of farm people are the most important"[14] becomes operationally meaningful.

The relevance of this type of analysis for international financing of agricultural development is essentially that it deals with questions of income distribution. Some or even all benefits take the form of incremental cash incomes and, amongst others, their distribution determines incentive levels. In turn, the latter must be considered in any judgment of whether the direct beneficiaries themselves can be expected to repay the monies invested at interest, and what period of time would be involved. Given confirmation that a project has high economic priority, provision for direct recovery of investment may sometimes be counter-productive. The financier of an agricultural development project will obviously thus want to know what the potential for future savings by the direct beneficiaries is, but he would be ill-advised to insist on a conventional pattern of recovery if this is in conflict with the need to realize the full economic potential of the investment. In the first instance, this is not a question of social equity but of an immediate operational necessity, namely that to enlist the full co-operation of the project beneficiaries. Social concern adds an entirely different and equally important dimension to the analysis.[16]

References

1 Hershlag, Z. Y., "Theory of Stages of Economic Growth in Historical Perspective", Kyklos, Vol.XXII, 1969, Fasc. 4.

2 Wapenhans, W. A., Die Entwicklung der offentlichen Auslandsverschuldung Griechenlands seit der Begrundung seiner nationalen Selbstandigkeit". Ztschrft. f.d. ges. Staatsw.; Tubingen, 1961, Bd. 117, H.2.

3 Pearson, L. B., and others, "Partners in Development", New York, Washington, London, 1969.

4 Wapenhans, W. A., "Some Aspects of Agricultural Development and International Capital Flows", Proceedings of the International Seminar on Change in Agriculture, Reading, England, 1968.

5 The World Bank, Policies and Operations, Washington, 1960.

6 International Bank for Reconstruction and Development, Articles of Agreement (as amended effective Dec. 17, 1965), Washington, 1966. The Articles also include reference to reconstruction. Inasmuch as such financing is related to the re-creation of productive capacity it can, for purposes of this paper, be subsumed under the definition of development.

7 International Development Association, Articles of Agreement, Washington, 1962.

8 Waterston, A., and others, "Development Planning–Lessons of Experience", Baltimore, 1965.

9 Haq, Mahbubul, "Strategy of Economic Planning: A Case Study of Pakistan", Karachi, 1963.
10 Lieftinck, P., Sadove, R., Creyke, T., and others, "Water and Power Resources of West Pakistan. A Study in Sector Planning". Vol.III, Baltimore, 1969.
11 Eckstein, Otto, "Water Resources Development. The Economics of Project Evaluation". Cambridge, Massachusetts, 1961.
12 National Economic Development Council, "Investment Appraisal", London, 1967.
13 Regan, K. M., and Weitzell, E. G., "Economic Evaluation of Soil and Water Conservation Measures and Programs", Journal of Farm Economics, November, 1947.
14 Schultz, T. W., "Transforming Traditional Agriculture", New Havan, Conn. 1964.
15 Joy, T. L., "Diagnosis, Prediction, and Policy Formulation", in "Subsistence Agriculture and Economic Development", edited by C. B. Wharton, Jr., Chicago, 1969.
16 McNamara, R. S., Address to the Columbia University Conference on International Economic Development, New York, 1970.

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In his paper Dr. Wapenhans reviews the World Bank's lending and appraisal criteria for development projects, with particular but not exclusive reference to agricultural projects. However, the more general title of this paper leads one also to ask not only whether the appraisal criteria described in the paper are the most appropriate to secure the founding objectives of the World Bank itself, but also whether the Bank's criteria serve as a wider model for the lending operations of other donors to less developed countries of the mixed economy type.

From my limited personal experience of the Bank's activities in two East African countries, its reputation stands high in the eyes of Ministry of Planning officials, politicians and public figures in the less developed countries compared with other multi-lateral and bilateral agencies. This is despite the rigorous scrutiny to which project applications to the Bank are subjected (with ensuing delays), the strict guarantees on the repayment of Bank loans and the fairly free criticism which the Bank's survey missions make of the development plans and their state of fulfilment. The reason for this attitude to the Bank seems to lie in the fact that the Bank's endorsement, even if somewhat qualified, of a development plan and, particularly, the investment of Bank funds in one or two projects is thought to create a climate of confidence in the medium term economic stability of the recipient country which will enlarge the flow of development capital forthcoming from other agencies and, if desired, from foreign private capital sources. In other words, the very strictness of the Bank's examinations enhance the credentials of the successful candidate. These 'external economies' of the Bank's lending operations, which are certainly viewed as important by the recipient countries I am familiar with, indicate a unique catalytic role for the Bank, which is not fulfilled by any other donor. At the same time, this may warn us that the Bank's criteria should not necessarily serve as a general model for international capital aid.

Actually four, not three lending criteria are cited in the paper i.e. the existence of adequate foreign debt servicing capacity, the creation of productive capacity in specific projects, the need for a significant foreign exchange requirement in the project applied for, and the satisfaction by the project of the Bank's appraisal criteria. On the first point, the question arises as to how a country with a large debt burden relative to repayment capacity, reflecting past economic mismanagement, can secure new funds for new high net benefit projects which will enable the eventual improvement of the debt servicing capacity. As the author points out, the country in this situation may qualify for a soft loan from the funds administered by the International Development Association. However, this seems an inadequate model for *all* donor agencies to follow. As the repayment of accumulated debt eats into domestic capital investment it further postpones the growth that the aid was initially provided to promote. It would seem sensible, therefore, that donors share some of the risks of development and are prepared after an unfortunate economic episode to either write off a proportion of their loan as lost equity capital, or at least proclaim a 15–20 year moratorium on debt repayment.

The second and third criteria (productive projects and foreign exchange costs) are widely recognised as tending to impart a bias into a country's development strategy, for several reasons:

(1) Attention is focussed upon capital as the critical factor, whereas high level manpower (planning and implementation capacity) is frequently the limiting constraint;

(2) The availability of foreign exchange encourages investment in sophisticated imported technology, rather than intermediate or labour intensive technology with a low foreign exchange content;

(3) Finite and visible projects, planned *de novo* such as irrigation schemes are easier to cast into 'bankable' project form than more diffuse joint-cost programmes such as agricultural credit and extension programmes for peasant farmers, although the latter may, however, combine a higher benefit:cost ratio with a greater spread of benefits across the rural population.

(4) Attention is withdrawn from key questions such as the suitability and efficiency of current policies and institutions, the productivity of the current stock of high-level manpower, etc. and placed on new projects of possibly lower value. In fact, the Bank's survey missions *are* charged with looking at these other areas, but capital-project bias still seems pervasive in the less developed countries I am familiar with. In any case, it is essential that other donors play a wider role than the Bank in these non-capital areas.

It is with the fourth criterion, as set out in the paper, that I find the greatest difficulty. Firstly, there is the statement that projects must be established without regard to political or other non-economic considerations. Whilst social welfare is clearly not *the* political objective (as stated in the paper) but one of several possible political objectives, it is certainly the end to which economic growth is the means. Politicians do not always know how, or even seek, to maximise social welfare so that economists may have a greater insight into beneficial policies if only because efficiency, income distribution, regional development rates, etc. are concepts they are trained to deal with; secondly, however, economists may be ignorant of the social costs of economic projects or programmes, which society may be better aware of and will articulate through an open political process. Again, the reduction of social inequality may have beneficial effects for growth, or may even be a necessary prerequisite for further growth to occur. Up to a certain point, in many L.D.C.'s reduction in inequality and economic growth are complementary, not competitive e.g. increasing small-scale export producers' output. These facts and others suggest that economists and especially World Bank missions should be prepared to discuss the social welfare systems of recipient countries and not lean to one political side only i.e. laissez-faire. In fact, the use of *shadow prices* in the Bank's project appraisal work goes a great way towards this, since shadow or social prices, of course, depart from the private profitability criterion in order to maximise the growth rate of society as a whole. For example, under the conditions of widespread underemployment outlined by Myrdal, the rigorous application of shadow pricing methods would shift investment into labour-intensive techniques and activities, with the effect of reducing income inequalities. At the same time, whilst there are difficulties facing the precise calculation of shadow prices due to the absence of data (a point discussed by Professor Stolper in his well-known book entitled 'Planning without Facts') most development economists would agree, I think, that roughly estimated adjustments which shift market prices in the right direction are more beneficial than using private profitability as the sole criterion in project appraisal work.

Dr. Wapenhans appears to regard shadow pricing as an optional extra at the project analysis stage. But as typically the prices of foreign exchange, unskilled labour, and a range of protected or taxed products need adjustment, I find it difficult to envisage a situation where their determination is not a priority task before the appraisal of individual projects. The Bank itself could well fulfil this role by initial discussion with each country's Planning Ministry. This would ensure the use of a consistent, and periodically revised, set of shadow prices which could be applied to all development projects. Recent internal studies in the Bank itself and the recent O.E.C.D. study by Little and Mirrlees of Oxford University provide practical guidelines for such an exercise. One implication of the technique of shadow pricing, it seems to me, is that economists are now more able, if they wish, to remain outside the political value system of any country i.e. remain internationally objective and impartial, whilst at the same time recognising and assisting the social welfare objectives of politicians. (There are other political objectives, of course, which the economist is not competent to advise upon.) The central importance of social pricing finds quite inadequate emphasis, to my mind, in the paper.

Finally, there are a number of questions which, due to shortage of time, I will state in a very bald fashion.

(1) Should agronomists choose the most appropriate level of technology? Surely the broad labour/capital ratio should be specified by economists in advance in the light of social prices e.g. 'choose a

system employing not more than x units of capital per worker'.

(2) What criteria in practice would the author suggest for determining the minimum direct repayment by beneficiaries of Bank schemes?

(3) How can the flow of project appraisals be speeded up so that the benefit/cost ratios for most competing projects can be appraised at the same time, because, as the author recognises, the benefit:cost ratio or internal rate of return becomes nearly meaningless for one project in isolation?

(4) What are the priorities for improvement in data, project selection and appraisal methods in the agricultural sectors of less developed countries which are suggested by the author's experience?

In conclusion, I would state from observation that the Bank's operations display a somewhat schizophrenic condition due to the differing viewpoints of Bankers, with private profitability criteria uppermost in mind, and the Economists, who have embraced the techniques of social pricing. The signs are hopeful, however, that the economists are prevailing (one is found in the last paragraph, of this paper), so that both the growth and social welfare objectives of less developed areas will be better served by the Bank's future operations. As far as other donors are concerned, a much less rigid approach is appropriate, with an increasing emphasis, as Myrdal has stressed, on grant aid.

D. Dumitru, *Romania*

The speaker is the representative of the International Bank for Development and Reconstruction. He has made a major contribution to our scientific work. He introduced us to a very sophisticated problem. We all of us know the great part which is played by international credit and the system of financing in economic development in general, and in the development of agriculture in particular. In his paper the representative of the International Bank has presented a review of the purposes and criteria from the viewpoint of the I.B.R.D. and I think it is quite normal that the reporter has presented the criteria for the nations used in his organisation. But there are also the criteria of the country which is the recipient, and in practice the criteria are different in the donor country and in the recipient country. In his report, Dr. Wapenhans has set out the purposes–namely three of them, the maximization of profit; the public welfare; and economic growth. I would like to ask what are the economic and social consequences, the practical consequences, the world consequences of this aid which is very effective by these criteria?

Shafi Niaz, *Pakistan*

I have two minor observations to make. The first is that Mr. Wapenhans, in his paper, has mentioned that social equality is not one of the criteria which is to be used for the appraisal of the projects. But the criteria should not lead to social inequalities. For example, in a credit programme a limit has been set that tractors cannot be given to farmers owning less than a specified size of holding. On this policy the social inequalities are likely to increase and I think that this is one of the considerations which should be kept in mind by those concerned. The second observation I have in mind is that in a developing country like Pakistan where the new technology of seeds has been adopted at a fast rate, and by a large number of farmers, to keep up that level of adoption by the farmers a certain level of inputs is essential. For example, in the case of new varieties of wheat the use of fertilisers has become a must. In the case of the new varieties of rice the use of pesticides has become a must. But both these inputs need foreign exchange in much larger volume than has happened in the past. According to the criteria given, such inputs are in the nature of current consumption and are not regarded as appropriate for giving credit. Until such time as developing countries are able to establish their own plant for the manufacture of fertilisers and, for that matter, for the manufacture of pesticides, I think the Bank should consider giving loans and credit for current consumption, otherwise the potential that these developing countries have gained for increasing their agricultural production will slow down and might lead to difficulties. For that matter, if it is necessary to modify the definition of the project and to change the criteria, Mr Wapenhans should consider these modifications.

Sawaong Kulthongham, *Thailand*.

Once again we are here together in this Conferece, coming from all parts of the world to discuss our situation and problems in agricultural economics, to study especially the socialist system of farming, with its achievements, to study development plans to achieve prosperity and greater income for farmers, to achieve freedom from hunger. If The World Bank and every country, especially the developed countries, have a part in planning, it is by leaving room for developing countries to expand their agriculture. A developing country like my own, Thailand, depends greatly on agriculture. Products such as rice, corn, cassava etc., are the main products to be exported. If the developed countries have a financing plan to increase such agricultural products for export, taking the share of the market of the developing countries, I think the world will not be free from hunger, the world will not have peace, and also the world will not progress. In conclusion, may I appeal to all of you who come from the developed countries, especially the World Bank, please kindly leave room for the developing countries' agricultural expansion.

G. H. Ward, *Jordan*

I will respond to your suggestion for comments regarding the lending operations of the IBRD. In the Middle East, where I have been working for the past several years, it is my observation that the criteria which were explained by the first speaker, have made a constructive contribution to agricultural development and also that they have caused the government officials to pay more attention to the reports and studies made by agricultural economists regarding development projects. But first I would say that these criteria necessitated the governments to pay careful attention to the formulation of development projects submitted for finance to put them on to a self-liquidating basis. We find naturally that many projects that are desirable are proposed by ministers on the basis of what they think is good for the country and the recommendation of several government officials, but very often these officials are very optimistic in their expectations of the results. The tend to be optimistic on the prices of the products and the net return that would result from the production which would result from using the loan. Therefore, when they realise that the IBRD has these definite requirements and appraises very carefully the cost and benefit ratio, the internal rate of return, this necessitates that they take available data and treat them on a conservative basis and reappraise their project to get it on to a sound basis.

The next point is in relation to operating policies of the government agencies and other institutions utilising these funds from the Bank for constructive purposes. I have observed, for instance, an agricultural bank that was headed by a man very sincere in his endeavours to help the farmers but his main idea was the interest rate must be kept as low as possible, which made it impossible for the bank to raise sufficient funds to meet the real needs of the farmers for medium and long-term loans. When the IBRD came in and made a loan that was such that the bank must charge an interest rate which would cover all of its expenses as well as paying the interest on the borrowed funds this finally made it necessary to reappraise its policies and get its interest rates up to where they are now in a competitive position. More funds are becoming available for projects in agricultural development such as the purchase of needed farm machinery and the sinking of tube wells for expanding the irrigated production.

Also it has helped the Bank carry out some repayment and collection policies. As we know, there is very often pressure to suspend collection and when the Bank makes its loan on an instalment basis and says, 'We will not make another payment until you have collected according to schedule', then this puts another pressure on the officials of the Bank, making them more able to resist the local pressures and go ahead and make the collection. I have noticed very substantial improvements and I believe that IBRD is making a very constructive contribution to agricultural development through carrying out strictly these projects according to the criteria which have been mentioned.

Dr. Gavrilov, *African Institute, Moscow*

I think that everyone will agree that Dr. Wapenhan's paper merits high appreciation. I would like to point out in relation to sections 3 and 4 of his report the question of the foundation and planning of the project and the question of the criteria of choice is substantiated. I think that the requirements of the international bank when the financing of a project is taking place is important. The part of the paper which drew my particular attention is the section on the financing of agricultural development. Mr Wapenhams defines three purposes of the financing of agriculture. He mentions here, in particular, economic growth and the purposes of development. Here I must conclude that the Development Bank equates economic development with economic growth. I think that it is impossible to put the signs of equality between these two concepts. I think that all those engaged in the study of the problems of the developing countries know very well that growth can take place without development. I stress here the national sector as different from the foreign sector because the stability means that there is no economic development even though some growth may take place. Usually, these difficulties are inherent in the too rapid expansion of the foreign sector and we all know that the IBRD is an international organisation although it is a very powerful body because it works with the international consortiums. If we take the African continent we must appreciate that these consortiums act beyond the sphere of international development. We must see that the aid of the International Bank in the aid given to the various countries, especially the African countries which is the aim of my study, is directed predominantly not to the agricultural sector but to those dealing with mineral raw material production and to other industries. I hope that Mr Wapenhans will tell us what share of all the IBRD aid has been used for increasing production of food products in African countries. I have a feeling that there is a contradiction here. On the one hand, the theoreticians of the agricultural development insistently recommend that the agriculture of the African countries should develop. On the other, the IBRD does not follow these recommendations and passes on only a small share of its financing in these directions. The fact is that the requirements of the internal market should by no means be neglected.

The attitude of the IBRD is of very real importance here. I, of course, deal only with the developing countries, but the aid to these countries will be most useful only if it is directed to the development of the internal market and not directed to the satisfaction of the requirements of the external foreign market. Returning to the report I feel that Mr Wapenhans confines his attention to the consideration primarily of the technological and economic problems that IBRD is following.

M. A. Hussein Mullick, *Pakistan/West Germany*

After having followed the work of the World Bank (though from a distance), it seems to me that the bank's operations have been too bank-like, resulting in emphasising too much the profitability of the project, but ignoring at the same time the income distribution or employment generation aspect of developments. I know there have been some accommodation in allowing concessional rates on credits (IDA) for infra structure, but what it has so far neglected is the development of small and medium enterprises. When asked the officials of the Bank have told me that smaller loans are uninteresting as they involve high relative costs. This is true but is not a sufficient explanation/justification to neglect the vast small and medium enterprises sector. My suggestion, therefore, is that the Bank explore new institutional means to finance this potentially productive though at present highly neglected sector.

My second point relates to the Overall Model of Lending. In this model, unfortunately, the provision of maximum employment or the other aspect connected therewith i.e. the social justice aspect of development, is ignored. As the Bank is an international Institution of financing and it enjoys considerable reputation and influence, time has come that it changes its pesent Model Of Lending in order to accommodate employment and social justice aspects of development.

Reforms in its present model are needed most urgently. If, however, this is not done, I am afraid, the costs arising from social dissatisfaction leading to protests and strikes and coups would outweigh the benefits arising from the Banks's loan's on which they have put in a lot of hard work.

My third point is:could the Bank resort to a lending model under which it charges the maximum for credits meant for the capitalist sector, but the minimum for the non-capitalist or socially oriented sector?

My other question is:Did the Bank foresee the whole waves of violence resulting from unemployment and social discrimination in her client countries? If, however, it did, why didn't it take appropriate steps to avoid such a back-log accumulating. I know in recent years, the Bank has become conscious about the social implications, but my feeling is that they again are very much underestimating the magnitude and seriousness of the problem. Will Dr. Wapenhans explain why funds are made more easily available for the import of fertilizers, than for the establishment of fertilizer factories? Does he see some danger arising from inadequate supply of inputs, as Mr. Shafi Niaz from Pakistan also pointed out, in sustaining the Green Revolution?

F. H. G. Stangen *German Federal Republic*

There are some disadvantages in looking at development only from the agricultural angle.

Development in agricultural production of the so-called Third World means often that the amount of goods of a kind already difficult to market on the internal or international market will be larger than before.

Agricultural development in the countries served by IBRD will depend therefore to a large extent on expansion of demand; i.e. the development in the sector of non-agricultural production.

If IBRD gives certain priority to loans for agricultural projects I should like to know from Dr. Wapenhans on what basis this is done. In the event the internal rate of return of an IBRD financed industrial project could be e.g. 27% and that one of an agricultural project could be e.g. only 23%, to which project the loan would go in view of the priority mentioned by the speaker?

Fr. H. de Farcy, *France*

Dr. Wapenhans has clearly shown the problem of the *quantity* of investments which only allow for the establishment of a *productive capacity*, and there is therefore a call for a sort of *human resources planning*.

The success of a project depends basically on the quality of those called upon to implement it; not only on the quality of technicians, but also of managers, administrators, and directors. These latter skills are often very unevenly distributed, and almost always inadequate to carry out the projects well.

For some years methods of training adults–or in-service training–have enabled administrators and organisors to acquire these skills. These methods require time and are costly.

In spite of this, I ask Dr. Wapenhans if it is possible to insert, in drawing up a development project, a general clause allowing for the training not only of technicians but also of administrators at various levels of the projects? In other words, to have the right to include, in the planning, the field of training for management and marketing?

I note that this once again brings up the question of cost. An adequate training programme can often lead to costs representing more than 5 per cent of wages, spread over several years, and over 10 per cent when it is more concentrated. But it seems to me that Dr. Wapenhans could easily justify the profitability of this supplementary investment!

Alfredo M. Saco, *FAO/BLD, U.S.A.*

Just a few words to explain the basic difficulties of those who are engaged in preparing an agricultural project for presentation to international financial institutions. Dr. Wappenhan's paper I think is excellent from the standpoint of a theoretical approach to the subject. Nevertheless, in many instances it is quite impossible or difficult to follow up the evaluation of the facts because of lack of sufficient data or the uncertainties with regard to the projections which have been made. I would like to say in this respect that, for instance, it would be impractical to make studies of alternative opportunities. It is extremely costly to prepare a project and if you want to operate by preparing sufficient projects before you present them it is terribly complicated. Another difficulty is the absence of sufficiently well organized government offices for the preparation of projects and I think that much more attention should be paid to the organization of the expert teams for the preparation. The Food and Agriculture Organization and the Inter-American Development Bank encountered tremendous difficulties in the absence of data and the lack of personnel to help them in their undertaking. This is a tremendous job in project preparation. This is one of the greatest difficulties in organizing what you might call the 'project line'. There are not sufficient projects to make a choice from and sometimes there must be improvisation, this is as far as the country is concerned.

Now from the point of view of the Bank there are sufficient types of project which are not very much in favour or for which there is no definite policy. I am thinking in this case particularly of forestry projects. Forestry is a very important activity and afforestation projects also when there is not yet a clear criterion (I am referring particularly to the International American Development Bank). As to the weight to be given to projects and certain difficulties which have to do with local components, some of these projects are very heavy on the local component. I have some experience of forestry projects in Chile where the local component is as much as 80 per cent. This is very difficult for the Bank to finance. Secondly, there is the time period.

Erly D. Brandao, *Brazil*

I would like to take the opportunity of asking Dr. Wapenhans if the World Bank is following or adopting any policy towards improving two points touched by Dr. Saco. These two points are: first improving the quality of the data used by countries in preparing for their projects; secondly, improving the quality of the project itself. According to my limited experience, there are too many poor projects existing in the less developed countries. With this I would like to congratulate Dr. Wapenhans for his excellent paper.

W. M. Schultz, *Canada*

The bankers' approach as outlined in the otherwise excellent paper ignores, and consequently underestimates, the relevance of the effect of a given project upon income distribution. This omission detracts from the usefulness of this approach as a universal model.

I would like to draw attention to another weakness in the approach: there is not a single reference to any examination of the differential effect of a given project upon population growth. Due to years of public discussion of the subject economists should by now be keenly aware of the enteraction of the rates of (a) population growth, (b) return, and (c) the resulted *net* rate of return as a measure of the contribution of a project to a nation's consumption and investment fund. Projects involving public housing schemes, agricultural settlement, irrigation and other production improvement may quite possibly lead to higher population growth rates, while other projects may not. For this reason the internal rate of return *net* of the population growth rate seems to be a more appropriate ultimate choice guide than the presently used 'gross' internal rate of return on investment.

Given its unique catalytic role, if the IBRD will pay attention to the problem of unbalanced population growth where it matters, this is likely to lead to a greater awareness and a better appreciation of the problem at the national level, a step necessary to find the means to cope with this problem.

M. Georgiev, *Bulgaria*

Dr. Wapenhans on pages 143 and 144 of his report said that the credit and financing of given measures is carried out on the basis of economic expediency which takes into account not only the means of the entrepreneur/owner but also, and mainly an analysis of the whole economy including, also, the opinion of the integrator.

Doesn't this limit the free initiative of the individual entrepreneur, about which much has already been said, in as much as it is the decisive factor in the growth of production? Doesn't this open the door for interference in the internal affairs of other states?

Dr. Wapenhans, *in reply*

I hope you will forgive me if I have not managed to sort out all the questions and arrange them in order, but I will attempt to deal with them one by one, starting with the opener of the discussion, Mr Belshaw. It is, of course, quite pleasing to hear that the Bank is in a position to set a standard of good housekeeping. I doubt if it is necessarily so in all circumstances, but the scope of my paper did not permit me to give an account of the Bank's role as chairman of consortia and consultants. It leads me to the first direct question which Mr Belshaw asked, the question of lending terms and the limited possibilities which the bank has, either through bank funds directly or through concessional funds, to respond to the balance of payments situation of particular countries. Here I can only say that there are very definite institutional limitations, which they are trying to overcome, to the creation of banks' working together with O.E.C.D. in which all donors, including the World Bank providing the funds are trying to agree on a reasonable level of terms. This may not relate to the specific country in question but sets a general orientation in regard to aid terms. When we come to a specific issue the material problem is to find out what are reasonable terms in relation to the debt servicing possibilities of the country and in relation to the prospects of foreign exchange earnings. Bank finance is usually not provided for more than the length of life of the project.

In relation to the second of Mr Belshaw's statements that the operation of one method leads to the use of capital intensive technology. I think this is a point well taken and one with which we have to cope for many years but you may have noticed that the paper which I have had the honour of presenting to you indicates that under normal circumstances and except for special situations, we seem to finance the foreign exchange component. Depending on the particular country situation such a special circumstance can arise if when a country makes a great effort and has a very low foreign exchange earning potential and the foreign exchange earning of particular projects is very small. In situations such as this we do have the possibility of varying the practice. In such a situation we do not want to insist necessarily on a very high level of technology but we would be guided by the results of taking due account of the sensitivity in the full range of shadow prices.

On this point of shadow prices, inclduing that of unskilled labour, I quite agree with Mr Belshaw that our scientists have not yet given us the methodology or the basis for data collection which would give us much more than a rough guess at the shadow prices. Unskilled labour is, perhaps easier to deal with. We can make some sort of guess which will not go far astray. For skilled labour we will find the reverse.

Related to that point, Mr Belshaw raised a question whether the bank were not orientating countries almost exclusively towards new projects rather than improving the existing situation and whether or not advantage could be gained by reorientation, and in particular, I think, Mr Belshaw meant manpower. I quite agree that this is a very important point and agree that we have a certain role to play in this, but it must be remembered that as an international bank there is only so much that this institution can do to enhance the work in any country. However, these points are being taken into specific consideration.

The fourth point of Mr Belshaw which several other discussants referred to was the question why the Bank should leave matters of social equity, income distribution etc. out of the appraisal. I would like to repeat that, to the extent possible, with the methodology we have, we try to do as much in this direction as can be reasonably justified. Now the element of shadow prices makes it possible to recognise certain disparities and to build into the analysis a socio-economic approach and to begin to deal with problems it is impossible to deal with in the orthodox type of analysis. However, it must also be recognised that as most foreign experts are perhaps the worse judges from the point of view of assessing the impact of disparities, as Mr Mullick asked us to do, on the likely violent reflection of disparities. This is quite natural and we can probably say that the politicians see this much better than a technocrat or foreign banker such as me. It must follow that to deal with these problems is, in the first instance, the responsibility of the government. Since the additional resources made available through international capital transfers do not amount to much more than 1/5th of the total investment requirement, the bulk of the capital investment in developing countries must come from these countries themselves, so they are in a much better position to allocate the resources to maintain social stability.

Going on to Mr Belshaw's other question. Is the agronomist the best judge of the level of technology to be applied, I don't know—we have used agronomists, anthropologists, economists—and in many cases we have been ill advised by all of them. I still think that an agronomist with a good practical background who has known and worked in the countryside is the one I would turn to for advice.

Again, what practical yardstick is there for the level of repayment. This is a very difficult problem. If we start on the premise that it would be desirable to recover the entire loan and interest from the ultimate beneficiaries of a project then, of course, we end with taxing away as much as 50–70 per cent of the incremental income which accrued to them, and that at very low levels of family income. Here, I think, what we are usually guided by is a comparison of the projected family income a farm income in the particular situation with the projection of the reasonable level of income in other rural or non-rural occupations. We try to look ahead because in most cases one can expect some improvement. We like to see the ultimate beneficiaries of a project to obtain a substantial increment which is sufficient to enlist their full co-operation. We necessarily need to have the data for a specific case.

The third request of Mr Belshaw's was whether projects could be speeded up. In the field of technical assistance and project preparation the U.N. Technical Assistance organisation is responsible for financing technical assistance activities which include the necessary surveys, and data generation for projection formulation and project preparation itself. In addition there are numerous regional agencies and, of course, the F.A.O. in Rome, which provides assistance to governments on preparation. And the World Bank. I am well aware of the fact that all this is insufficient, as Mr Saco has put it, to keep the pipe-line full. I think one of the suggestions which has been made is quite important in this respect, and that is that governments themselves should get to realise the importance of data generation, training of people capable of producing projects.

The priorities in the field of project preparation and data collection, here we are in a difficult position to give a clear answer. If one talks about S. America one would say livestock is one of the very important sub-sections. In other areas it might be quite different; we can only answer case by case.

The question phrased by Mr Dumutrie from Rumania. I believe that there is some misunderstanding when he says appraisal criteria rest three principles, maximisation of profits, social welfare and economic growth. I would like to point out that it is essentially the last, though the social aspects are brought in through the methods of shadow prices. I would not consider maximisation of profits as a central feature though obviously the setting of incentive levels for individual farmers obviously falls into this category.

What are consequences of aid directed by these criteria. I think it is difficult to assess and answer with a single reply. This kind of aid is provided in many countries for many different projects; there are situations where the ultimate beneficiaries are very small farmers. I think the danger that the results of the aid we supply will settle in a particular strata of society is remote indeed.

I am not quite sure I fully understand the question about monopoly. I think perhaps the answer lies with the regional development plans which have been developed.

In reply to Mr Shafi Niaz—why does the Bank limit the size of the holdings which would benefit. The question here is one of social concern. If a farmer is able to buy a tractor in a given situation at half the cost of his colleagues, then, of course the danger is very great that undersized farm units will fall for mechanisation and incur debts that the domestic terms of trade will not enable him to repay. Furthermore, for the very small holding mechanisation it is a doubtful proposition. This is an area of our work where we would like to see market forces (i.e. tractor prices) governing capitalisation.

As regards foreign exchange aspect—e.g. the financing of fertilisers and pesticides, it is possible to finance such items provided they are part of initial working capital. Once they have got going we expect that the projects will generate enough revenues, local currency and foreign exchange, to provide the base for current supply of such inputs as fertilisers, pesticides. Obviously we would like to finance fertiliser manufacture in the countries and indeed we are doing so in many countries. We are reluctant to finance import of fertilisers especially when a domestic industry can be established. To repeat, where it is necessary to start up projects we will provide the initial finance.

I am inclined to agree with Mr Kulthongham to have continuous development, but we have to get our funds from the capital markets of the world, and by negotiations with government aid schemes.

How does the bank determine priorities between agriculture and other fields and what proportion of finance has gone into agriculture. It was only in the late 50s and early 60s that a level of project preparation was reached that allowed us to increase substantially our lending for agriculture. Up to 1965 agriculture commitments, in terms of operations, was about 15 per cent and now it is about 32 per cent. There is no ceiling—the figure is a result of absorptive capacity and patient work in project preparation. Possibly the level will rise, it depends on what comes forward. Often it is a matter of finding any project in a country likely to yield an acceptable return rather than of making a choice between them.

Mr Gavilov raised the matter of economic growth and economic development. I think usually this is not a great problem in practice. As to Africa, it has proved hard to get the bases for projects in that continent, but results are now becoming evident.

Mr Mullick raised the matter of the Bank operations being too much based on profitability. The success of our work is not based on the profit but on the number of successful projects. As to help for small units, we have agricultural development banks and industrial development banks which do the same for small industries.

Finally, Father de Farcy asked whether the Bank provides for manpower planning. The Bank has established a training section. In agricultural schemes it is often possible to build-in training schemes, including those for managements.