STUDIES

Evaluation criteria for projects submitted to the European Development Fund

Overseas Development Series

3

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PREFACE

This brief survey is not intended to solve problems, still less to formulate a doctrine. The problem of underdevelopment admits of not one, but a multiplicity of solutions. As for doctrine, I would say with J.K. Galbraith: "We now have growth models – hypotheses as to the nature of the process of economic growth – some of considerable mathematical refinement and a few that are wholly incomprehensible."

To turn the well-known French saying "there is no such thing as sickness, there are only sick people", I would remark that there is no such thing as underdevelopment, there are only underdeveloped countries. Each of them raises unique problems, which is why stereotyped arrangements and ready-made solutions are useless.

Where underdevelopment is concerned, the beginning of wisdom is humility. We must set our face against being too clever and stick to simple things. The underdeveloped countries have two advantages over the industrialized countries: first of all, they start from nothing or next to nothing and, secondly, they learn from the latters' experience. But merely to apply to them the methods of calculation and analysis and the development techniques used by the more advanced countries is an abstract approach which will lead to irreparable error. The well-trodden path may be the right one and simplicity does not necessarily mean paucity of ideas.

I would advise the reader to approach this study in a clear-sighted, humble and down-to-earth way. Only if he does so will he derive some benefit from it.

Jacques Ferrandi

Director of the European
Development Fund

All national or international organizations supplying financial assistance to the developing countries have to decide what criteria to apply in evaluating investment projects. Most of these organizations have drawn up somewhat complicated rules on this subject.

As regards the material nature of the projects considered, the European Development Fund has so far been guided by EEC Regulation No. 7 (official gazette of the European Communities of 25 February 1959), which stipulates the supporting documents to be supplied by the Associated States (see Annex I).

This regulation, which is being revised, also lays down a number of general principles which must be observed before projects can be accepted. Thus, " the Commission shall take into account the influence which the project may exert on the economic and social development of the country or territory, and in particular on the standard of living of local populations and the likelihood of the project being successfully carried out " (Art. 24).

" The Commission shall in particular assess:

a) The acuteness and urgency of the needs which the project aims at satisfying;

b) The recurring charges which the country or territory will have to bear as a result of the putting into service of the projected facilities and the means it has available to meet such charges;

c) In the case of productive investments, the return expected from the projected facilities and, if appropriate, the outlets available for new production;

d) The contribution which such facilities can make to raising the purchasing power of the populations and to the creation and mobilization of local savings;

e) The means of technical implementation to be envisaged and their adaptation to the economic and social conditions of the country or territory;

f) The conditions under which such additional capital investment as may be necessary or useful if the proposed facilities are to be fully effective;

g) The probable size of other private investment induced;

h) The probable effect of the project on the general economic equilibrium of the country's or territory's balance of payments;

i) The effect which the project is likely to have on projects which have been carried out in, or are planned for, other countries and territories and the contribution which it can make towards a concerted and rational economic development of the geographical area under consideration " (Art. 25).

Moreover, a study published by the Commission entitled " European Development Fund for the Overseas Countries and Territories; objectives and operation " reads in part (p. 5):

" Generally speaking, priority will be granted to operations whose effect on the standard of living of the native populations is rapid and direct. However, there is a danger that in the long run development may lead to serious distortions and be slowed down if care is not taken to further at the same time those factors which condition expansion indirectly or in the more distant future ...

" Analysis of the projects generally results in priority being given to operations which will remedy existing imbalance in the economic and social structures, eliminate bottlenecks and other obstacles to development, and contribute to valorization of potential resources ...

" The assistance of the Fund will be particularly effective when applied as part of a development programme at the points where it would bring into play other factors making for progress and enable these to be applied to other parts of the programme. "

Within this general framework, a fair amount of latitude was left both to the departments responsible for assembling " project documentation " and to the EDF officials who vouched for the merits of the project. Thus, as regards economic sub-documentation, the considerations which may justify the granting of aid from the EDF are connected with what Regulation No. 7 calls " the probable effects of new facilities " (operating forecasts, effects on

individual income, on employment, on home production and on external trade). The fact that a great deal was left to be discretion of the officials examining the files resulted in the application of a large number of varied criteria for the evaluation of economic projects, the appraisal of social projects being naturally even more complicated for two reasons: in the first place, these projects are most often evaluated on the basis of qualitative rather than quantitative factors, with the result that subjective judgment plays a large part; secondly, among these qualitative factors are humanitarian considerations which claim attention.

However, in spite of the varied problems which arise, we may attempt to formulate the main guiding-lines for the evaluation of both economic and social projects. The usefulness of rationalizing the evaluation criteria used in EDF documents is threefold: from a practical standpoint, it enables financing proposals from whatever source to be studied rapidly. Secondly, it enables different investment projects to be compared in one and the same country, thus providing a yardstick. Finally, while the geographical differences between the various associated countries make any attempt to compare projects on an international basis a hazardous matter, the use of uniform criteria at least brings out the differences in the results to be expected from a given project and impels one to find an explanation for them. However, the fact that the application of similar criteria to different countries does not lead to comparable results shows the limitations of these criteria, which are frequently due to a lack of relevant statistics. Finally, it should be pointed out that the aim of these evaluation criteria is not to enable a choice to be made between various possible investment projects, which is a matter for the Government concerned. It is rather a question of forming an assessment of projects so that even the layman can see whether they are financially justified and will work out satisfactorily.

The fact that in the time of the first Implementing Convention investment projects were withdrawn by the Governments of the Associated States or were rejected by the EDF services [1] shows that financing decisions were reached only after thorough scrutiny and that only projects which were certain to succeed or to have beneficial effects on the economic or social life of the countries concerned were accepted. We shall not suggest, in the present methodological study, any change in this policy. We do not call in question the intrinsic merits of financing proposals put forward earlier, but we want to have them clarified and standardized in form and presentation, using the same criteria defined in exactly the same way. We therefore propose, after examining the various possible criteria, that a number of them be adopted, in some cases after adjustments.

Bearing in mind these considerations drawn from previous practice, we should be able to arrive at a working basis for the financial decisions of the second EDF.

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[1] Up to 29 February 1964, 352 projects (to a total of 632.9 million units of account) laid before the Commission for financing had been finally withdrawn by the Govemments concerned, or withdrawn and submitted again after amendment, or rejected by the EDF.

PART I

GENERAL SURVEY OF POSSIBLE CRITERIA

In the evaluation of investment projects it is impossible to apply a single, ideal criterion for each type of project. The first difficulty is that the basic data are inadequate (lack of statistics, difficulty of making forecasts), which makes it virtually impossible to make exact calculations; and, secondly, the beneficial effects of the project can seldom be expressed in figures. It should be added that, as has already been stressed, the differing conditions in the various countries play a part in determining the kind of assistance required, and therefore its profitability. Not only does the application of one and the same criterion give different results, but it is so difficult to compare conditions from one country to another that the difference in the results achieved amounts in practice to one of kind and not of degree. For example, according to climatic conditions, we may sometimes lay out an unmetalled road and sometimes build a metalled one; the cost of an unmetalled road may range from FF 40 000 to FF 200 000 per kilometre; the cost of maintenance may vary between FF 1 000 and FF 4 500 per kilometre; finally, transport costs may be anything from FF 0.20 to FF 0.50 per ton/kilometre. In the case of an asphalted road, the cost of construction ranges from FF 120 000 to FF 300 000 per kilometre; the maintenance may cost from FF 3 000 to FF 8 000 per kilometre, and transport costs may vary between FF 0.10 to FF 0.25 per ton/kilometre (see P. Bourrières "L'économie des transports dans les programmes de développement", pp. 98 and 99). Thus, a saving on transport costs may be thought satisfactory in one country where communications are very difficult but would not be so in another country where conditions are more favourable.

It may therefore be wondered whether it is possible to fix uniform criteria applicable in all countries. One way would be to adopt those criteria which differ the least from one country to another, e.g. savings on road haulage costs. But this would mean sacrificing other more general and more important aspects of project evaluation. We may therefore examine all the various possible criteria together. These are, first, criteria suggested by economic theory, and, secondly, those actually used by the most important organizations active in this field, such as the American Organization AID, the United Nations, the FIDES, the FAC or the International Bank.

1. *CRITERIA SUGGESTED BY ECONOMIC THEORY*

Economic theory suggests a large number of criteria, details of which will be found in Annex II together with the formulae used. Only the main points will be discussed here.

A. In his book "Investissements, rentabilité et progrès technique" (p. 79), Hosmalin says: "There are objections of principle to making an overall assessment of the profitability of an investment project by means of a capital/output ratio." Since it is necessary, however, to assess the profitability of investment projects, the same writer proposes three main criteria (op. cit., pp. 161–170):

a) Total minimum cost ("Comparison between the total average cost, worked out on an annual basis, of the facilities at present in use and of the new facilities to be installed." Another method would be to compare the "unit costs" of the product before and after investment);

b) Rule of the minimum output rate, i.e. the ratio between the annual saving on operating costs made possible by the investment and the annual capital cost incurred as a result of the new facilities;

c) Rule of the maximum period of repayment, i.e. a comparison between the period required to repay the investment by saving on annual costs and a variable "maximum or compulsory" period for repayment (see Annex II, I).

B. Massé proposes in his book, "Le choix des investissements" (pp. 201 sqq.) more sophisticated methods of evaluating projects. The first of these involves calculating the total benefits at present worth resulting from the investment which may be compared with the situation existing before the investment was

made. This method is perhaps the most satisfying from the intellectual angle provided that all the factors involved can be precisely assessed, which is of course the great difficulty. The second method involves the degree of profitability, which Massé defines as follows: " The degree of profitability of an investment project is equal to the present-worth coefficient which cancels out its benefits at present worth."

C. In his work " Economic development — Principles, problems and policies ", Higgins proposes that investment projects should be evaluated on the basis of the criteria used in the Philippines for the five-year development plan. However, these criteria mainly apply to industrial projects and would have no relevance here but for the fact that mention is made of the so-called " essentiality factor ", determined on the basis of:

a) The economic importance of the product, either as an export product or as a product for home consumption;

b) The origin of the materials and supplies used;

c) The origin of the capital equipment;

d) The source of financing (see Annex II, II).

D. Tinbergen endeavours to establish " a uniform method of appraising the projects presented by the various agencies of an administration ... To be sure, a completely uniform appraisal will be almost impossible, especially as far as the unmeasurable aspects are concerned. To compare the advantages of an electricity plant with those of a hospital or a school will always be difficult. ... Uniformity can be aimed at only for the measurable aspects ..." (" The Design of Development ", p. 30).

Tinbergen considers that the measurable aspects of projects should be assessed mainly by the contribution of these projects to " the country's welfare, present and future ". This is known as the " test of national welfare " and it comprises a number of factors: the increase in national product or possibility of consumption on the domestic market, complementarity of projects with one another (particularly in the case of means of communication upon the construction of which the execution of land improvement or industrial projects depends), and the use of " scarce resources ". Moreover, Tinbergen considers that the use of market prices in calculations may be a source of error since they do not always reflect " intrinsic values ": they should therefore be replaced by " accounting prices " which would be those obtained " if i) the investment pattern under discussion were actually carried out, and ii) equilibrium existed on the markets " (op. cit., p. 39).

This second condition, which is the least difficult to calculate and the most important, coincides with the existence of " fundamental disequilibria " in the developing countries. One of these disequilibria is widespread unemployment which results in the intrinsic value of labour being " so low that wages in accordance with it would often mean starvation ". Also the trade unions are able, in a number of cases, to raise wages above what would be an " equilibrium level ". This abnormal situation is largely due, in the author's opinion, " to the scarcity of capital, and can be ended only by a better balance between population and capital " (op. cit., pp. 70 and 71). The use of accounting prices would thus make it possible to gain " a better insight into the real consequences for the economy as a whole of certain investments " (ibid.).

A specific project might therefore be evaluated by comparing its actual repercussions on the domestic economy with the present situation or that resulting from other possible investments. Here again, a criterion based on maximum benefits at present worth is involved, but it is defined more broadly since the " benefits " apply to the whole country, and are calculated at equilibrium prices.

2. *CRITERIA USED BY VARIOUS ORGANIZATIONS*

A. CRITERIA USED BY THE FIRST EDF

In many cases, various evaluation criteria were used in one and the same financing proposal. In the interests of clarity, these factors are arranged in groups below according to their nature.

a) *Mathematical criteria*

The mathematical criteria were either financial profitability or a capital/output ratio or a cost/benefit ratio, or various other criteria.

Financial profitability was sometimes arrived at by calculating the profitability rate on the basis of present worth. Other proposals in-

volved analysing various profitability factors, e.g. the reduction in transport costs for communications projects, the reduction in maintenance or packaging costs for goods, or the increase in value for taxation purposes.

Frequent use was made of the capital/output ratio, often in the form of a cost/benefit ratio.

The other criteria based on statistics were mainly cost per hectare of improved land or hectare of new land or cost per job created.

b) *Non-mathematical criteria*

The non-mathematical criteria are mainly concerned with the social utility of the project, depending on such factors as settlement of population, increase of family income, higher level of employment and the establishment of contacts between sections of the population previously living in isolation. This aspect of social utility exercises a beneficial influence on the country's entire economy, e.g. improvement of the region, development of a vital sector of the country's economy, impetus given to general economic activity, improvement or increase in trade (improvement of products; lower prices of consumer goods; increase in trade by saving of time in transport; improvement of the terms of trade).

By applying a number of criteria, it is possible to assess the effects of a project in the various fields in which it may exercise an influence.

B. AGENCY FOR INTERNATIONAL DEVELOPMENT

The American Agency for International Development evaluates the projects submitted to it by the criteria set forth in the booklet " Feasibility studies – Economic and technical soundness analysis – Capital projects ", most of which are concerned with financial profitability. Thus, it is pointed out that " a project will be considered economically sound if the resulting economic benefits over a stated period will equal or exceed the total costs of construction, maintenance and operation over the same period " (pp. ii-iii). On page 6 of circular A 47 appended to the same document it is pointed out that " one essential criterion in justifying any programme or project will, except in unusual cases where adequate justification is presented, be that its estimated benefits to whomsoever they may accrue exceed its estimated costs ". However, no exact calculation of profitability is required. The evaluation criteria are roughly the same as those used by the EDF. In the case of agricultural projects, for example, these criteria are the following: details of present situation, land tenure, the existence of a market and a credit system, the population concerned, management of project, operation and maintenance costs, estimated revenues, tax receipts (water charges), benefits/cost ratio, ability of project to meet costs, and indirect national economic benefits (see same circular). Further details of these evaluation criteria will be found in Annex III.

C. THE UNITED NATIONS

The United Nations has published the criteria applied by their services in evaluating projects in a " Manual on Economic Development Projects ". Here again, most of the criteria applied by the EDF are used, particular stress being laid on aspects such as market problems (statistical and economic data on the possible market for the goods in question, statistical series of production, imports, exports, consumption, geographical distribution of market and its characteristics, analysis of present demand and projection of demand, marketing of goods which it is intended to manufacture). The following criteria are listed in this report, details of which will be found in Annex IV:

Product – capital ratio
Value added per unit of capital
Productivity of capital
Capital intensity
Employment per unit of capital
Marginal social productivity of capital
Labour productivity
Benefits – costs ratio
Value added per unit of total input
Other coefficients.

In addition to these criteria, the United Nations use what they term " social pricing ", i.e. the influence exerted by the proposed investment on exchange rates, indirect taxes, customs tariffs, subsidies of all kinds and the cost of replacing labour and capital in other branches of activity in which these two production factors might have been employed.

D. The competent services of FIDES and FAC apparently evaluate projects on the same ba-

sis. They consider the " indirect benefits " derived from the project by the national economy or by the entire population of the region concerned, and the services are allowed great latitude in evaluating projects on subjective grounds under the general programmes (FAC programmes, 4th plan for the overseas departments and territories: see France's *Journal officiel* of 7 August 1962 – Law No. 62-900 of 4 September 1962 – Annex – pp. 156-165 (see Annex V).

E. M. Groenveld, of the International Bank, has described in a typed note (" The economic evaluation of land development projects ") the criteria he considers should be taken into account in evaluating agricultural projects submitted to the Bank. He takes the view that these projects should be examined from three angles: with respect to the national economy, from the standpoint of the farmers and, finally, from the point of view of the Government. From the standpoint of the national economy, the criterion applied is the capital/output ratio, and, in the case of farmers, the increase in income; as regards the Government, M. Groenveld considers that it should receive " a reasonable return " on its investments. On this principle, the farmers should reimburse the Government for the capital and operating costs of the project by way of water charges and other taxes. The question then arises whether the farmers will be able to repay the Government for the services provided, but M. Groenveld considers this problem easy to solve in the developing countries since " the increase in gross value of production is relatively larger in those areas than in a well-developed country ". The farmers should therefore be able to repay satisfactorily if the project passes the other two tests. Although this criterion may at first sight appear difficult to put into practice, it is in fact capable of application, as is evident from its use by the first EDF.

Thus there is a wide range of possible criteria, which not only offers a choice but makes it unnecessary to use new criteria. These criteria are of unequal value, but most of them are useful since they reflect some aspect of reality. Evaluation criteria should satisfy two paradoxical requirements; on the one hand, they should be simple and realistic and, on the other hand, they should be uniform and clearly defined. This point is made in the United Nations publication already quoted (op. cit. pp. 210 and 211 — see p. 11 of this survey): " The evaluation problem is essentially one of comparison and priority, and there are two general methods of approach: a) to present a series of partial evaluation coefficients, so that those responsible for the decision have adequate data on which it may be based; and b) to include all the economic effects of the project in a single formula in order to obtain a single coefficient, so that the decisions simply consist in placing the projects in the order of priority indicated by this " integral " coefficient. From the practical point of view, it will be simpler to carry out the calculations required for obtaining partial evaluation coefficients in direct terms at market prices. The determination of social prices and the calculation of indirect effects are more serious problems. Because of the difficulties already mentioned in social pricing, it will be avisable to limit estimates to the larger production factors, remenbering that comparative terms are required and not absolute measurements. Since, at the same time, only a certain degree of approximation can be achieved in the whole of the project's study even for strictly technical data, some tolerance must also be accepted in the evaluation calculations. In other words, it must not be forgotten that a project involves an investment proposal which depends upon estimates, and which will always include calculated risks. Possible price changes, the inevitable estimate of the project's useful life, the true depreciation (because of obsolescence), technical innovations, actual development of demand and other items, are unknown factors which limit the accuracy of the general calculations of the project and hence its evaluation. On the other hand, it is obvious that without these calculations there is no way of making a comparative appraisal of projects nor of taking rational decisions; the alternative of leaving the field open entirely to intuition or bias is patently worse.

These are the perspectives in which the evaluation problem and the attainable degree of accuracy must be judged. In view of these limitations, on the one hand, and the unavoidable necessity for evaluation on the other, it must be acknowledged that in most cases the more or less subjective consideration of a series of partial coefficients must replace the mathematical method represented by a single evaluation formula ".

In the following pages, therefore, we have attempted to draw up a list of strictly defined criteria (what the United Nations terms " partial coefficients ") and recommend that certain of these criteria be applied.

PART II

ATTEMPTED DEFINITION OF APPLICABLE CRITERIA AND COMBINATION OF VARIOUS CRITERIA

1. *APPLICABLE CRITERIA*

The usual distinction will be made here between mathematical and non-mathematical criteria.

A. CALCULATION OF MATHEMATICAL CRITERIA

a) *Degree of profitability with calculation of present worth*

As has been pointed out earlier, the actual degree of profitability must be accompanied by a present-worth calculation of benefits and costs. Bourrières (op. cit., p.149) defines present worth as "the maximum rate of interest which would enable receipts and costs to be balanced after a given number of years". Bourrières considers that a rate of 15% is sometimes met with in the developing countries in the case of transport projects.

With regard to agricultural projects, it is sometimes possible to make a very detailed calculation, as is shown by the financing proposal submitted for the first section of the Bas-Mangoky irrigation project in Madagascar. In this case, the calculation takes the following factors into account: gross annual income after investment a), annual operating and administrative costs b), net income before investment c), general benefits d), overall direct costs, i.e. including final operations, but not indirect investments e) and recovery of costs equal to the difference between annual income and annual expenditure after completion of the project f). By deducting b) from a), the net income g) is obtained, and the profitability rate (R) is found as follows:

$$\frac{g - c + d}{e - f} = R$$

The factors c), d), e), f) and g) are discounted to the year 0 and the present-worth rate used for the project concerned was 5% to allow for unknown quantities and all the risks involved in the project.

The same calculation, slightly modified, may be suggested for road projects. For these projects the following formula may be used :

$$R = T + V + E - D$$

where

- T = saving on goods transport at present worth
- V = saving on passenger transport at present worth
- E = saving on annual and periodical maintenance at present worth
- D = total cost of investment at present worth.

The saving at present worth (B) will be calculated by using the following formula, a) being the present-worth factor:

$$B = R_o + \frac{R_1}{(1+a)} + \frac{R_2}{(1+a)^2} + \dots + \frac{R_n}{(1+a)^n} = \frac{n}{1} \frac{R_i}{(1+1)^i}$$

The calculation may be made for various values of a), e.g. 7% or 8%, and the two values between which B changes its sign are the limits of the profitability rate.

One of the difficulties raised by this type of calculation lies in the uncertainty of forecasts of future developments. However, a reasonable basis would seem to be a projection into the future of developments over the past few years, as shown by the rate of increase in road traffic (75% over 10 years in the fairly developed associated countries, for example).

According to Bourrières, two factors influence future road transport trends, and they may help to confirm these forecasts. The first is that specific transport requirements will make it necessary to establish a regular service, for example, transport on a large scale will be required for mining or farming. It will therefore be possible to forecast the average annual volume of traffic on the basis of the farms' output or the size of mining reserves in conjunction

with the absorption capacity of internal and external markets. The second factor is the transport needs arising from general development. It might be supposed, at first sight, that traffic in ton/kilometres increases in proportion to national income, but although this hypothesis is acceptable in the case of a whole country, it is less valid in the case of communications between two points within a small region of the size of a sub-prefecture, for example. Moreover, development is not a continuous process and the problem of spreading investments arises, which therefore exerts an influence on the regional distribution of road traffic. Thus, the second factor seems to be less useful than the first. The application of this criterion may prove to be a delicate matter and besides this first difficulty there is the problem of fixing the present-worth rate and the arbitrary element involved in deciding on the period of reference. To choose a short period would rule out far-reaching improvements; on the other hand, a long period would be discouraging to investors and public sentiment and increase the possibility of error.

Another method of calculation, which gives the same results as that indicated above, is suggested by Bourrières and is set forth in detail in Annex II, *III.*

b) *Capital/ output ratio*

This method is apparently simple enough in use since the figures needed are easy to determine: first, the sum total of investments in the project and, secondly, the increase in the gross value of production. This gross value does not include operating and maintenance costs or the labour involved. Output is assessed at market prices. It is debatable whether one should take into account depreciation and the rate of interest for long-term loans. These factors should perhaps be taken into consideration in the same way as taxes and charges.

M. Groenveld maintains that operating costs, such as purchases of fertilizers or insecticides, expenditure for machinery or farm labour, water charges and other taxes, should not be taken into account at all in the case of farm projects. On the other hand, these factors would be taken into consideration when farmers' individual income is assessed. In any event, the higher the capital/output ratio the better the project.

A closely related formula is the cost/benefit ratio. In the case of a road project, for example, this ratio will be the quotient of the annual saving resulting from the investment in the year 0, or 5 or 10 years after completion of the project. Similarly, in the case of a land improvement project, it is possible to calculate the percentage of increase in annual output in relation to the cost of the investment. In the latter case, as some time must elapse before the land can bear crops, it will be useful to obtain balance sheets for a given period. The factors to be taken into account for the calculation of the cost/benefit ratio are, first, the net income expected from the project and, secondly, the cost of the project including capital invested, operating and maintenance costs, and possibly interest on loans and depreciation.

c) Other mathematical criteria of practical use are the so-called private interest test, i.e. the net additional income resulting from the project (see example quoted above in the case of farm income), or the cost per job created compared with output per job created. Taken in isolation, the cost per job created is not a valid criterion (because of differences in basic conditions, which may permit or prohibit more intensive cultivation, for example), but it may become so if it is related to output per job created provided that, where it is desired to make a comparison between two countries, the original position is the same. By way of illustration, this ratio for several projects financed by the EDF in an associated country is set out below:

(in '000 Frs. CFA)

Projects	Cost per job created	Output per job created (1)
A	320	89
B	245	63
C	300	46
D	807	117

(1) = $\frac{\text{gross additional income}}{\text{number of jobs created}}$

The best test of these propositions would, of course, be to see whether the calculation of criteria as advocated above gives very different results from those obtained when the projects involved in the financing proposals under consideration are evaluated. However, it was not possible to make this test since, in most cases, the necessary information is not to be found in the proposals. It may be supposed moreover that since the use of mathematical criteria is

actually regarded as less important than the use of non-mathematical criteria, the results would have been the same. This in no way invalidates the indications given above, which, as has already been pointed out, are simply intended to be methodological.

B. NON-MATHEMATICAL CRITERIA

It is difficult to give a detailed definition of non-mathematical criteria which may be applied in matters such as the contribution of a road to the country's general development. Development will go on in a variety of sectors, but the impact the project may have on each of these sectors is difficult to assess. In future financing proposals, therefore, certain non-mathematical criteria should be applied in a more detailed and more searching way.

Where, for example, a stretch of country is to be opened up, as much information as possible should be given on the population of the area concerned, its topography and the "latent wealth" of the region. The term "latent wealth" is used by M. Bourrières, who defines it as all the natural factors (climate, water, soil) and human and economic factors (markets, per capita income, etc.). However, latent wealth alone is an inadequate criterion since, as M. Bourrières remarks on p. 144 of his book, "even if sufficient latent wealth is present, improvement of the transport system will have only slow and sporadic effects if it is not accompanied by other improvements in very varied fields" (education, improvement of land and working methods, industrialization, stocking facilities and marketing methods). All this information should be supplied in detail in the financing proposals.

Furthermore, certain elements would be of greater service if the situations they refer to in the financing proposals were gone into more deeply.

a) In the first place, absorption capacity may be a very real problem in a country where lack of communications may leave more or less large and isolated pockets. It would be advisable to consider whether the work carried out might not have harmful effects (e.g. raising the prices of consumer goods, etc.). In order to examine this problem, one must have fairly extensive information on the exact situation in the region in question, and particularly on other investment projects being carried out, the level of prices, the consumer goods available, etc.

b) In the second place, the recurrent costs may be a decisive factor in determining the scale and depth of aid from the EDF. As is pointed out in a recent EDF document, "the decision whether or not to asphalt a road depends not only on the saving effected, but also on the ability of the public authorities to maintain the road ... The choice of an asphalted road may have the advantage of enabling the Government ... to postpone heavy repair work on the road for six to seven years, after which it will presumably be in a better position to meet its commitments. The fact that traffic will probably increase would seem to advocate construction in a single stage, which is technically much less costly than construction in two stages".

c) Finally, the effect of the project on the balance of payments should be set out in as detailed a form as possible, not only as regards future exports, but also as regards possible imports of capital goods required for the project.

2. *COMBINATION OF CRITERIA*

It may be suggested, then all the mathematical criteria listed in section A above ("Calculation of mathematical criteria") should be used, in that order. Could the question of the "ideal criterion" then be raised, with reference to an optimum situation?

It might be considered possible to arrive at an ideal figure by applying exactly calculated mathematical criteria. However, this is a delicate matter. M. Groenveld, for example, writing of the "capital-output ratio" in connection with agricultural projects, puts the limit at 6:1. However, he gives no reasons for taking this as a maximum ratio, which has been confirmed in practice by the figures arrived at in several financing proposals.

In the case of road projects, M. Bourrières proposes an optimum for tracks of 4 000 tons of goods transported per year except on journeys of over 1 000 km.; up to 40 000 tons per year for unmetalled roads, and over 40 000 tons for asphalted roads (op. cit. pp. 119 sqq. — see p. 9). This proposition is based on the cost price of

the different means of transport used over various distances, such as 100 km., 400 km., or 1000 km. However, the examples quoted assume transport under ideal conditions without exact geographical location. The same writer suggests 50% as the ideal profitability rate for a road in a rich African forest area and 17% in another country where conditions are more difficult. For an irrigation project 25% would be a possible rate. Finally, the average cost per job created in mechanical engineering ranges from FF 10000 to FF 20000 according to M. Bourrières.

However, evaluation may have to be less hard and fast; local conditions may be the determining factor. Massé (op. cit., pp. 11 and 12 — see p. 9) observes: "There are those who systematically take the short-sighted view that one type of equipment is better than another if, assuming that it gives the same service, it is cheaper to make, this without regard to operating, maintenance and replacement costs incurred later. On this view a box of matches is better than a lighter, wooden huts than houses of masonry, and second-hand cars than new ones. This is the argument of barest necessity, of rigorous austerity, sacrificing the future to the present. The contrary view is sometimes taken that equipment which will cost less in the future is preferable.... According to this school of thought ... the most capitalistic ... the best instrument is investment. This is certainly the progressive view ... The best equipment then is that which, assuming that it gives equal service, costs the least, taking into account both immediate and future costs.... The problem of choice has no solution valid in all situations and at all times."

The use of mathematical criteria is therefore not a panacea. As regards non-mathematical criteria it is, by their very nature, impossible to reject some of them *a priori,* and therefore to make a choice. On the contrary, as many of these criteria as possible should feature in financing proposals, particularly in cases where it is difficult or impossible to apply mathematical criteria. The reasons why their use is difficult or impossible should, moreover, be very clearly explained. For this reason, it would not seem advisable to try to combine a number of partial criteria, since the problem of weighting is more or less insoluble where there is a serious lack of basic data on the present state of affairs and where future developments are uncertain. Project documentation might therefore be examined along the general lines proposed for economic and social projects in Annexes VI and VII. The following are the main considerations:

a) The place of the project in the overall development plan and the efforts already made;

b) Evaluation of short- and long-term requirements;

c) How the project meets these requirements;

d) Secondary effects of the project;

e) Comparison of costs with those of comparable projects;

f) Recurrent expenditure;

g) Indirect benefits;

h) Possible disadvantages.

Each of these aspects constitutes an evaluation factor. Thus, a project will be favourably received if it fits in with the overall development plan, if it adequately meets a real need, if it affects a large part of the population, if its cost is reasonable, if it does not involve recurrent expenditure, and if it brings with it indirect benefits, social or economic.

Each aspect must be thoroughly examined and detailed reasons given. For example, a list of "factors to be considered" has been drawn up for the following spheres:

a) Economic projects: concerned with land improvement, roads, ports, railways and industries (Annexes *VI-A* to *VI-E;*

b) Social projects: concerned with public health, education, urban improvements, water supply, surveys (Annexes *VII-A* to *VII-E).*

As regards surveys, it should be noted that the "factors to be considered" are those which will be relevant in carrying out the scheme with which the survey is concerned. Thus, in the case of a land improvement survey, the evaluation and the grounds set forth are concerned with the improvement scheme itself. The EDF finances surveys either because of a shortage of qualified staff in the country concerned or because of lack of funds. However, a number of special aspects may also be considered, and these are given in the final list of evaluation criteria.

The "factors to be considered" listed in the various fields mentioned above are not concerned with the entire project documentation referred to in Commission Regulation No. 7, but only with the economic and financial sub-documentation. Since the nature and content of the documentation to be supplied is at present

being re-examined by the EEC Directorate-General for Overseas Development, the " factors to be considered " proposed in this report are intended only to be a logical and practical list of the various points to be looked into by the EDF services when examining projects.

Similarly, the use of various valuation criteria, which will feature prominently in the " factors to be considered ", is merely intended to make it possible to form an explicit opinion on a given aspect of the project.

This would make it possible for the associated countries to bring their data more closely into line with EDF requirements. This latter question of adopting standardized methods is no less important than the point made at the beginning of this report that the Member States should have comparable documents available, regardless of the service which issues them.

This is what prompted a closer consideration of a point of methodology which may seem unimportant by reason of the minor charges finally proposed. There is no question of taking any particular criterion as a decisive factor in evaluating projects. Any criterion, taken in isolation, is merely one factor of appraisal, and it is only by combining a number of these factors that a judgment can be arrived at. The problem arises, of course, how these criteria should be weighted or how their results should be reconciled where they conflict. In these cases, the appraisal is made at a higher level, for example, the standpoint of its conformity with the aims of the EEC's policy in the associated countries as laid down in the Treaty of Rome, and here the judgment will be to a great extent subjective.

It is nevertheless true that every effort to stretch limited funds to meet requirements which exceed them, in order to make as effective a contribution as possible to the development of the associated countries, necessitates the humble yet difficult work of detailed analysis which this report aims to make a little easier.

ANNEXES

ANNEX I

COMMISSION REGULATION No. 7

determining the method of operation of the Development Fund for overseas countries and territories, as amended by Commission Regulations No. 12 of 24 January 1961 and No. 123 of 31 July 1962

The Commission of the European Economic Community,

Having regard to Article 132 of the Treaty establishing the European Economic Community,

Having regard to Articles 1 to 7 of the Implementing Convention relating to the association of the overseas countries and territories with the Community,

Having regard to Article 22 of Regulation No. 5 of the Council of 2 December 1958 laying down methods relating to calls for and transfers of financial contributions, to the budgetary system and to the administration of the resources of the Development Fund for Overseas Countries and Territories,

Whereas Article 22 of Regulation No. 5 of the Council instructs the Commission to lay down methods of procedure relating in particular to the submission and examination of requests for financing,

Whereas the Commission and the authorities responsible for carrying out work must participate in carrying out projects,

Whereas it is therefore proper to determine the limits, methods and manner of their participation and to specify suitable measures of supervision,

Whereas it is proper to present such rules in the form of a single text describing the entire procedure for the operations financed by the Development Fund for Overseas Countries and Territories,

Has adopted the present Regulation:

TITLE I

ADMINISTRATION OF FUND

Chapter I

SPECIAL ACCOUNTS

Article 1

As regards each Member State the opening of the special account provided for in Article 1 of Regulation No. 5 of the Council (hereinafter called "the Regulation") shall be the subject of an exchange of letters between the Commission and the authorities appointed pursuant to Article 6 of the said Regulation.

Article 2

Such exchange of letters shall in particular specify:

i) the methods of administration of the special account;

ii) the servants of the European Economic Community authorized to effect operations on such account;

iii) the list of natural or legal persons *(personnes morales)* in whose favour payment orders may be issued;

iv) the signatures required to give such orders validity.

Article 3

It shall be the duty of the Director-General responsible to notify any modification made by the Commission to the lists of Community servants and of beneficiaries referred to above.

Article 4

The signatures of the servants of the European Economic Community authorized to effect operations on the special account shall be filed at the time when the account is opened or, in the case of servants authorized thereafter, at the time of their appointment.

Chapter II

CALLS FOR AND PAYMENT OF CONTRIBUTIONS

Article 5

The liability of each Member State for payment of its annual contribution shall be evidenced, as from the first day of the financial year, by an entry in the Fund's books.

Article 6

The Commission shall, normally three-monthly, lay down the amount of the payments to be made by each Member State in pursuance of Article 2 of the Regulation. It shall decide upon the call for the unpaid balance of annual contributions at such time as it determines the amount of the three-monthly payment for the financial year.

Article 7

It shall be the duty of the responsible Director-General or his Deputy to intimate the amounts thus called for to Member States.

Article 8

Member States shall have a period of fifteen days as from such intimation in which to make their payments.

Article 9

In the event of a Member State choosing to discharge the unpaid balance of its contribution by issuing an acknowledgement of debt at sight, pursuant to Article 2(3) of the Regulation, the form and contents of such acknowledgement of debt shall be determined by agreement with the Commission at latest for 1 December of the financial year in question.

Article 10

Every payment to the Fund and every acknowledgement of debt in its favour shall be evidenced by an entry in the books of the Fund.

Chapter III

EXECUTION OF BUDGET

Article 11

Pursuant to Article 5 of the Implementing Convention and to Articles 8, 9 and 10 of the Regulation, the special budget shall be made up as to receipts by the table constituting Annex A to the said Convention and as to expenditure according to the schedule of allocations adopted by the Council.

Article 12

Approval of the budget by the Commission shall open the credits necessary for the presumed expenditure of the financial year. Such credits shall be estimated within the limits of the provisions of Article 34 of the present Regulation.

Article 13

Transfers of credit may be decided upon by the Commission within the limits laid down by the

schedule of allocations. Such modifications shall be brought to the notice of the Council and published in the official gazette of the European Communities pursuant to Article 12 of the Regulation.

Article 14

The documents establishing commitments referred to in Articles 28 and 34 below must first be certified by the Accounting Officer *(comptable)*. Such certification shall attest that the operation is in order, that the correct account has been charged and that the credit exists and is available.

Article 15

Provisional and final commitments to expenditure, entered into pursuant to Articles 28 and 34 of the present Regulation, shall, as regards each project, be the subject of an entry in the Fund's books.

Article 16

Payment of sums necessary for the execution of projects shall take place upon sight of an order which quotes the references of the project, the object of the expenditure, the financial year in which it is to be charged, the sub-head of the budget, the amount of the payment and the name and address of the payee.

Article 17

The order shall be submitted for certification to the Accounting Officer who shall attest that it is in order in the manner set forth in Article 14 above. They shall be signed by the Director-General or his Deputy.

Article 18

Any orders for repayment to the Fund shall be issued in the same manner.

Article 19

Orders for payment and orders for repayment may only be issued in favour of or against the persons or accounts specified pursuant to Articles 2 and 3 above.

TITLE II

ALLOCATION OF RESOURCES

Chapter I

SUBMISSION, EXAMINATION AND APPROVAL OF PROJECTS

Article 20

Each project submitted pursuant to Article 2 of the Implementing Convention shall constitute a clearly defined body of activities complementary to each other and capable of being operated autonomously. The putting into service thereof must be possible as soon as the works for which assistance from the Fund is requested are completed.

The financing in whole or in part of scientific or technical research concerning the populations of the countries and territories may be the subject of a project.

The execution of the project may extend over several financial years.

Article 21

In respect of each financial year, projects shall be submitted to the Commission at the latest on 1 June of the preceding year.

Article 22

A "project documentation" *(dossier)* shall be drawn up for each project and the contents of such documentation shall be such as to enable the administrative, technical, economic and financial data of the problem to be assessed. Such documentation shall be drawn up according to the specimen appearing in Annex A to the present Regulation.

Article 23

In respect of each country or territory, the responsible authorities shall furnish the Commission with facts enabling the economic position of the country or territory, the development plans and the progress achieved therein and the place taken by the various projects in such overall plan, to be assessed.

This documentation, to be called the "country or territory documentation", shall be compiled by the competent Director-General's department according to the specimen appearing in Annex B to the present Regulation.

Article 24

Projects shall be examined by the Commission, which shall normally cause additional examination on the spot or expert investigation to be carried out. The Commission shall take into account the influence which the project may exert on the economic and social development of the country or territory, and in particular on the standard of living of local populations and the likelihood of the project being successfully carried out.

Article 25

The Commission shall in particular assess:

i) the acuteness and urgency of the needs which the project aims at satisfying;

ii) the recurring charges which the country or territory will have to bear as a result of the putting into service of the projected facilities and the means it has available to meet such charges;

iii) in the case of productive investments, the return expected from the projected facilities and, if appropriate, the outlets available for new production;

iv) the contribution which such facilities can make to raising the purchasing power of the populations and to the creation and mobilization of local savings;

v) the means of technical implementation to be envisaged and their adaptation to the economic and social conditions of the country or territory;

vi) the conditions under which such additional capital investment as may be necessary or useful if the proposed facilities are to be fully effective;

vii) the probable size of other private investment induced;

viii) the probable effect of the project on the general economic equilibrium of the country's or territory's balance of payments;

ix) the effect which the project is likely to have on projects which have been carried out in, or are planned for other countries and territories and the contribution which it can make towards a concerted and rational economic development of the geographical area under consideration.

Article 26

If during its examination the Commission is led to consider modifying a project, such modification shall be decided upon by mutual agreement with the authorities referred to in Article 2 of the Implementing Convention.

Article 27

As regards each project, the decision shall be taken pursuant to the procedure defined in Article 5 of the Implementing Convention and shall be notified to the authorities referred to in Article 2 of such Convention by the appropriate Director-General or his Deputy.

Chapter II

FINANCING AGREEMENTS

Article 28

The Commission shall bind the Fund to the country or territory by signing, in respect of each project, a Financing Agreement.

Article 29

The Financing Agreement shall be signed on behalf of the parties stipulated in Article 28 above by the Commission's representative, by the authority responsible for carrying out the work and by the other authorities appointed pursuant to Article 21 of the Regulation. It shall also be signed by the representatives of the bodies whose liability is involved in the execution, financing or satisfactory completion of the work.

Article 30

The Financing Agreement shall, for each project and in relation to the particular situation existing in each territory, lay down the methods for giving effect to the Regulations of the European Economic Community and the sanctions which shall be applied in the event of failure to perform the obligations contracted.

Article 31

In the event of the project receiving assistance from several financing bodies, the Agreement shall determine the rights and obligations of each.

Article 32

The Financing Agreement shall lay down suitable conditions for ensuring that effect is given to Article 20 of the Regulation. For such purpose it shall in particular provide for the elimination of discriminations in law or in fact and of specifications of a technical nature which may have a discriminatory effect.

Article 33

Rules relating to tenders and contracts shall be laid down in a special Regulation adopted pursuant to Article 20 of the Regulation.

Article 34

The Chief Authorizing Officer *(ordonnateur principal)* shall be responsible to the Commission for entering into definite commitments after bargains, contracts or estimates have been approved. He shall notify these to the authority designated in the Financing Agreement as the authority which is to act as Local Authorizing Officer within the meaning of Article 39 below. The same conditions as to entering into commitments and as to notifying them shall apply to any authorizations to exceed such definite commitment.

Chapter III

MAKING FUNDS AVAILABLE

Article 35

Apart from holding in special accounts the sums needed to effect direct payments by the Fund, the financing of each project shall give rise either to making funds available in accordance with the calendar of payments due or to reimbursement of expenditure incurred.

The Financing Agreement shall determine the way in which the procedure adopted in each case shall be carried out.

Article 36

The Chief Authorizing Officer, being in charge of financial administration, shall decide where and in which currencies funds shall be held. He shall determine payment procedures. For the purposes of effecting payments in the associated receiving country cover shall normally be provided through an account known as " Fund Account " opened in the Commission's name in the currency of one of the Member States with a financial establishment (hereinafter called the " Payer-Delegate ") which the Commission has selected and empowered to act.

Article 37

An exchange of letters between the Commission and the Payer-Delegate shall define in particular the terms governing the opening and administration of the Fund's account, as well as which servants of the European Economic Community shall be empowered to effect transactions through such account, as also the rights and duties of each of the parties.

Article 38

Fund accounts shall be provided with funds by the Commission in accordance with Articles 16 to 19 above and on the basis of requirements as shown by the calendar of payments due transmitted by Local Authorizing Officers in accordance with Article 40 below.

Chapter IV

EXECUTION OF PROJECTS AND SUPERVISION

Article 39

In the case of each project, the authority responsible for the execution of the work shall be the Authorizing Officer *(Ordonnateur)* for the project, subject to any provisions to the contrary in the Financing Agreement, and is hereinafter called the " Local Authorizing Officer ".

Article 40

The Local Authorizing Officer shall authorize expenditure, call for and receive tenders, notify

awards thereof and sign contracts. He shall transmit to the Commission quarterly calendars of payments due.

The Chief Authorizing Officer shall see that the terms of invitations to tender and of bargains and contracts, especially as regards completion and payment, are such as to ensure best competitive terms and stimulate the most advantageous tenders. With this object he shall more especially take care that the clauses as to currency and place of payment as also payment procedure enable unnecessary transfers to be avoided.

Article 41

The technical supervision of the execution of the work shall be entrusted to one (or more) "Technical Supervisors" empowered by the Commission and appointed in the Financing Agreement, which shall lay down the special conditions of the Supervisor's activities.

Article 42

The Technical Supervisor shall be responsible for the supervision of the execution of the work.

The Supervisor shall, as appropriate, immediately cause the necessary corrections to be carried out or make his observations known to the contractor in charge of the works and shall report thereon to the Local Authorizing Officer in a written memorandum a copy whereof shall be filed with the documentation. In case of urgency or serious defect he may suspend the execution of the work subject to immediately informing the Local Authorizing Officer and the Commission thereof.

Article 43

Provisional and final acceptances shall not be valid until after the Technical Supervisor has approved them. The Supervisor shall check and certify memoranda of acceptance and also contractors' statements of account.

Article 44

The Technical Supervisor shall report to the Commission on the execution of the operations referred to in the preceding Article. Such report shall in particular include a list of the statements of account certified and shall state the references and amounts thereof.

Article 45

Work carried out by the government or a government-delegated person or body *(en régie)* shall be executed according to local administrative procedures subject to special stipulations in the Financing Agreement. The relevant expenditure shall give rise to reimbursement under the conditions determined in the said Agreement.

Article 46

With a view to payment the Local Authorizing Officer shall draw up in duplicate the settlement statement and the corresponding payment order.

Article 47

Such documents shall be accompanied by a schedule containing *inter alia* the following information:

i) serial number of the project and (if any) of the portion of the works in question;

ii) contract references;

iii) name of payee;

iv) amount payable;

v) list of supporting vouchers.

Article 48

Several payments in favour of one creditor may be the subject of a single schedule provided that they relate to a single project and a single financial year.

In respect of each project, successive schedules shall be numbered consecutively.

Article 49

The schedule shall be drawn up in quadruplicate. The first two copies shall be transmitted to the Payer-Delegate with the supporting vouchers in duplicate. The third shall be addressed on the same day to the Commission. The fourth shall be retained by the Local Authorizing Officer for book-keeping purposes.

Article 50

The Payer-Delegate shall make the payments ordered after having checked the correctness

of the appropriation, the existence and availability of the credit and the regularity of the documents submitted.

The Payer-Delegate shall affix his endorsement to the schedule.

The Payer-Delegate shall, after each payment, forward to the Commission an extract of account showing the number of the schedule and shall forward to the Commission monthly one copy of the schedules, and of the annexures thereto, in respect of payments made in the previous month.

Article 51

In respect of each payment, the Commission shall have available a period of four months after receipt of the supporting vouchers in which to raise objection. After such period has elapsed, the Payer-Delegate shall be deemed to be discharged of any liability in respect of the payment in question.

The Fund's account with the Payer-Delegate shall be balanced at the end of each year.

Article 51 a

Should it come to the Chief Authorizing Officer's knowledge that the procedures in respect of projects financed by the Fund are being delayed, he shall take all necessary steps in liaison with the Local Authorizing Officer to remedy the position.

If for any reason, when funds have been granted, continuing delay in settlement, authorization or payment or in effecting transfers gives rise to difficulties such as to prejudice the complete fulfilment of the bargain or contract, the Chief Authorizing Officer may take all appropriate steps to put an end to such difficulties, to remedy the financial consequences, if any, of the position thus created and generally to make completion of the project or projects possible on the most advantageous terms.

The Commission shall notify the Local Authorizing Officer of such steps as soon as possible; where payments are thus made directly by the Commission to the contractor, the latter's rights against the local authorities shall automatically vest in the European Economic Community.

Article 52

The Local Authorizing Officer shall at the end of each quarterly period forward to the Commission a statement per project of the expenditure incurred and the payments ordered.

Article 53

The Technical Supervisor shall under the same conditions forward a report on the progress of the work.

TITLE III

TRANSITIONAL PROVISIONS

Article 54

For the financial years 1958 to 1962, projects shall be examined continuously by the Commission until all available funds are exhausted. Decisions taken within the allocations of funds approved for these five financial years shall be communicated to the Council and published in the official gazette of the European Communities as provided in Article 34 above.

The present Regulation shall be binding in all respects and directly enforceable in all Member States.

Done at Brussels, 23 February 1959.

By the Commission

Walter Hallstein
President

ANNEX I-A

PROJECT DOCUMENTATION

A. ADMINISTRATIVE SUB-DOCUMENTATION

i) Subject-matter;
ii) Situation;
iii) Name of the legal person *(personne morale)* on whose behalf the financing application is submitted;
iv) Agreement of the local authority or of the representatives of the population of the country or territory concerned, pursuant to Article 2 of the Implementing Convention;
v) Name of the authorities responsible for the execution of the work;
vi) Name of the owner of the facilities capable of being created with the Fund's resources.

N.B. In the case of a legal person subject to government control, the documentation shall include the legislative provisions determining the status of such person and the rules of supervision to which it is subject.

B. TECHNICAL SUB-DOCUMENTATION

Part 1 — Technical specifications of the project

i) Situation (enclose map or general plan, suitably annotated in each case);
ii) General description;
iii) Specification;
iv) Estimates of quantities and costs, as accurate as possible (stating the bases and dates of the estimates);
v) Surcharge coefficient ascribable to transport charges in relation to situation of each facility — in other words, price carriage paid to point of installation of proposed facilities.

Methods of execution

i) Work done by the population concerned;
ii) Work carried out by the government;
iii) Contracts for work;
iv) Contracts for supplies.

Calendar of works and contracts per item, in chronological order

i) Specifications;
ii) Date tenders invited, if any;
iii) Date of beginning and end of work, with successive acceptances;
iv) Approximate amount of expenditure per annual quota.

Part 2 — Technical and sociological climate of projects

i) What needs does the project submitted satisfy?
ii) To what extent are the needs satisfied at present?
iii) What contribution will the plans and programmes in course of execution make to the satisfaction of such needs?
iv) What will be the ways of using the new means of production whose creation is proposed to the Fund?

Example:

A project for the creation of a vocational training centre is to be supported by documentation comprising at least the following information:

a) Active population; population capable of attending school;

b) Number of workers possessing the skill which the new centre is intended to impart;

c) Present needs of the local economy;

d) Probable growth in such needs in the years following the completion of the centre and the attainment by its first pupils of their qualifications (with reference to the Plan);

e) Steps taken to place the specialized labour thus trained in employment.

C. FINANCIAL SUB-DOCUMENTATION

Part 1 — Financial details of project

1. Any project for apportioning resources according to origin and kind:

i) Local contribution — public or para-public; private;
ii) Other external aid;
iii) Contribution of Development Fund.

2. Amount of private resources whose concurrent or subsequent investment would be an indispensable or useful adjunct to the full effectiveness of the project submitted.

3. Apportionment of expenditure (expressed in local currency):

i) portion to be paid in local currency in any event;
ii) portion capable of being paid outside the territory.

4. Probable calendar of commitments and payments due (as from the date of signature of the financing agreement); distinguished between expenditure in local currency and any expenditure in other currencies.

Part 2 — Financial consequences

1. Budgetary effects:

i) on fiscal receipts;
ii) on expenditure;
iii) operating expenditure (recurring charges — distinguished between personnel, equipment, maintenance and major repairs);
iv) debt liability per currency (in the event of supplementary finance obtained by borrowing).

2. Other financial effects:

i) Contribution to the creation of savings;
ii) Direct mobilization of local savings in capital or work;
iii) Private investment induced.

D. ECONOMIC SUB-DOCUMENTATION

Part 1 — Economic details of project

1. Analysis of investment expenditure:

i) Personnel: wages and salaries paid { internally (residents); externally (non-residents);
ii) Materials and equipment: of local origin; imported.

2. Additional private investment logically necessary (see C-1-2) and steps taken to encourage or facilitate such investment being made.

3. Probable effects of new facilities:

i) operating forecast for five years and balance sheet for the fifth year (in the case of productive facilities);
ii) on individual income;
iii) on employment;
iv) on internal production;
v) on external trade.

Part 2 — Special economic environment of project

i) Economic problem to be solved;
ii) Existing facilities;
iii) Alternative solutions;
iv) Reasons for choice.

ANNEX I-B

COUNTRY OR TERRITORY DOCUMENTATION

1. Industrial and commercial structures (according to fiscal statistics, for example).

2. Active population and statistics of employment according to branch of activity or occupation with reference to official nomenclatures.

3. Principal indices of economic activity:

i) Production and consumption of energy;
ii) Agricultural production;
iii) Mining production;
iv) Industrial production;
v) Transport;
vi) Prices;
vii) Wages.

4. Monetary resources and their counterparts.

5. Summarized breakdown of banking commitments.

6. Budgetary information (actual and forecast figures):

a) Ordinary receipts according to kind;

b) Operating expenses, distinguished at least as follows:

i) public debts;
ii) materials and equipment expenditure;
iii) personnel expenditure;
iv) maintenance and major repairs;
v) contribution to development budget;

c) Extraordinary receipts according to kind and geographical origin;

d) Expenditure on development, distinguishing:

i) administrative facilities;
ii) social facilities;
iii) economic infrastructure;
iv) directly productive investments;

e) Movement of redeemable debt.

7. Global gross investment and principal sources of financing (particularly local private savings) – Net investment.

8 External trade:

i) according to currency areas (show EEC separately);
ii) according to principal products;
iii) according to large groups of products.

9. Balance of payments, showing at least the following headings:

i) External trade;
ii) Other current settlements;
iii) Financing condition of disequilibrium of current payments.

10. Monetary reserves.

11. Gross national product — National income.

12. Origin of gross national product according to branch of activity.

13. Apportionment of national income according to social-economic groups.

14. Development programme:

a) estimated expenditure forecast;

b) actual expenditure (annual payments);

c) anticipated effect of current development programme:

i) on standard of living;
ii) on budgetary development;
iii) on external trade;
iv) on balance of payments.

N.B. The above information must enable a retrospective survey relating at least to the last five years to be carried out.

ANNEX II

CRITERIA SUGGESTED BY ECONOMIC THEORY

These criteria almost all stress a special feature of the social profitability of an invesment, i.e. that of the real increase in income in macro-economic terms; but at the same time they recognize the fact that the expected benefits are not always of this nature and may sometimes take the form of " social progress ", which is not measurable.

However, the economic theorists are endeavouring to make a thorough study of mathematical criteria. Details will be found below of the calculations referred to in the text.

I. HOSMALIN'S THREE CRITERIA

Hosmalin uses the following three formulae (op. cit., p. 200 — see p. 9 of this survey):

1. Rule of minimum total costs:

$$F_1 + A_1 + I_1 \geq F_2 + A_2 + I_2$$

2. Rule of minimum output rate demanded:

$$\frac{(F_1 - F_2) - \frac{K_2}{n} \times 100}{K_2} = t \geq t'$$

3. Rule of maximum period of repayment:

$$\frac{K_2}{F_1 - F_2} = P \leq P'$$

where:

F_1 = average annual cost of operating equipment already installed;

F_2 = corresponding costs in cases where existing equipment is replaced by new equipment;

A_1 = annual capital costs for first supply of equipment;

A_2 = annual capital costs for second supply of equipment;

I_1 = annual amount of interest to be paid on the initial cost of first supply of equipment;

I_2 = annual cost of interest to be paid on initial cost of second supply of equipment;

K_2 = initial cost of investment for the purchase of equipment of new design;

n = presumed period of use of this new equipment;

t = actual return on capital invested in new equipment;

t' = minimum output demanded;

P = actual period of repayment granted in the case of new equipment;

P' = maximum period.

These criteria are particularly suitable in the case of industrial equipment, but may be applied to economic projects.

However, Hosmalin endeavours to give an exact definition of the concept of " social profitability ". He considers that any "nominal monetary notion " should be excluded, thus emphasizing the real cost and profitability of investments in macro-economic terms. Profitability might therefore be regarded as synonymous with either economic or social progress, as defined by other economists. Economic progress, for example, might be assessed in terms of the changes in the average standard of living between two specific periods, i.e. in terms of changes in the ratio between the national product and the total population. However, the benefits derived from an investment project do not always result in an increase in real income, for the economy as a whole. This is why reference is made to the concept of social progress, or improvement of the country's welfare.

It is therefore necessary to adopt the criterion of income, on the one hand, and all the factors brought into play to obtain this income, on the other, together with the effects of the apportionment of this income on the equilibrium of all other sectors of the country's economy: this is the " social pricing " so often referred to by American writers, which brings us back to evaluation on subjective grounds, which is the only means of assessing the satisfactions obtained and sacrifices made.

II. B. HIGGINS' FORMULA (op. cit., pp. 653-686 see p. 10 of this survey)

Higgins quotes the example of the Philippines, where an attempt has been made to find an ideal method of evaluating investment projects. The following objectives were to be reflected in this formula:

a) to direct resources towards the most productive uses;

b) to conserve foreign exchange;

c) to reduce unemployment;

d) to improve the distribution of real income;

e) to promote economic growth.

Within this general framework, preference should be given to projects meeting the following requirements:

a) highest contribution to the national income per unit of scarce resources;

b) highest measure of improvement in the country's balance of payments per unit of scarce resources;

c) greatest use of domestically produced raw materials and operating supplies;

d) greatest use of domestic labour (measured by the annual value of such labour per unit of scarce resources expended);

e) production of goods that would meet the more basic needs of the people and produce the greater effect on the external economies. This last factor is known as the "essentiality factor".

The formula finally worked out meets all these requirements and is as follows:

$$I_p = R_1 + R_2 + R_3 + R_4$$

where:

I_p = industrial priorities;

R_1 = the value added to the national income by the various factors of production (corrected by the essentiality factor) per unit of capital resources utilized;

R_2 = impact of the operations of the firm on the country's balance-of-payments position;

R_3 = the extent of additional economic values derived from the use of domestic raw materials and supplies;

R_4 = the social value derived from the employment of Philippine labour (provided that unemployed or underemployed persons are involved).

A formula exists for each of these factors. R_1, for example, is calculated by the following formula:

$$R_1 = \frac{e\,(w + r + i + p)}{K}$$

where:

e = essentiality factor (determined according to: 1) the economic importance of the product as a commodity either for export or for domestic use, 2) source of raw materials and supplies used, 3) source of capital equipment, and 4) source and nationality of financing);

w = wages, salaries, commissions, etc, minus the portion estimated to be remitted abroad;

r = rents, except those remitted abroad, calculated on the basis of a percentage of the declared value of land, buildings, etc.;

i = interest paid for borrowed capital, except interest payments on foreign borrowing. Whenever actual interest rate is not known, an interest rate of 6% shall be assumed;

p = profits and dividends, except those remitted abroad;

K = total investment (fixed assets plus circulating capital).

For the purposes of calculating the factor e, points ranging from 0.5 to 2.5 are allowed for each factor to be taken into consideration, depending on whether it has great or little bearing on each aspect of the country's economy.

The following table (check sheet for essentiality rating "e") shows the system of allowing points for each factor.

This appears to be an interesting experiment, although it is not possible, on the basis of the documents concerned, to estimate to what extent it has been put into practical use or what the results of this use have been.

Higgins has two main criticisms to make: first, that the system fails to include a direct measurement of the contribution of the project to output of the rest of the economy and does not evaluate the impact on distribution of income. He also considers that the points allowed for the factors used in calculating "e", may be valid in the specific case of the Philippines, but prove to be inaccurate in other cases, and that

Check Sheet A for Essentiality Rating (e)

Criterion	Points allowed				
	2.5	2.0	1.5	1.0	0.5
1A. Economic importance of export product	Product to be largely exported in finished form	Product to be partly exported in semi-finished and partly in finished form	Product to be largely exported in semi-finished form	Product to be partly exported in semi-processed form and partly in raw form	Product to be largely exported in raw form
1B. Economic importance of the domestic product	Product largely for use by other industries	Products partly for other industries and partly for consumption	Products largely for basic human needs	Products partly for basic and partly for less basic human needs	Products largely luxurious or unessential
2. Materials and supplies used	Materials largely from domestic sources	Materials partly imported and partly in domestic raw form or largely imported in raw or semi-finished form but their early availability from domestic sources is fairly certain	Materials partly imported and partly domestic in raw and semi-finished form	Materials largely imported in raw and semi-finished form	Materials largely imported in finished and semi-finished form
3. Capital equipment	Uses capital equipment entirely fabricated locally	Uses capital equipment largely fabricated locally	Uses capital equipment partly imported and partly locally fabricated	Uses capital equipment with very little local fabrication	Uses capital equipment entirely imported
4. Source of financing	Financed entirely by nationals, with paid-up capital more than 50% of total investment required	Financed entirely by nationals, with paid-up capital less than 50% of total investment required	Financed largely by nationals and partly by foreigners and/or aliens, or with foreign loans	Financed partly by nationals and largely by foreigners and/or aliens, or with foreign loans	Financed entirely by foreigners and/or aliens

Source: Philippines National Economic Council – The Five-Year Economic and Social Development Program for Fiscal Years 1957-1961 (Manila 1957), quoted by Higgins (op. cit., p. 685).

it would therefore be better to use the essentiality factor only in respect of industry or general economic activity, and not in the case of specific projects.

III. PROFITABILITY OF TRANSPORT PROJECTS
(see Bourrières)

The profitability of a road is both direct and indirect.

Direct profitability (T) may be calculated as follows (op. cit., pp. 148 and 149 — see p. 9 of this survey):

$$T = R + V(P - P') + v' \frac{P - P'}{2} - (A + I + E)$$

R = income from operation or tolls;
V = volume of transport before completion of project;
v' = volume of transport after completion of project;
P = average cost of transport before completion of project;
P' = average cost of transport after completion of project;
A = depreciation;
I = interest;
E = maintenance and administration.

The term $V(P - P')$ represents the saving effected as a result of improved transport facilities, and the term $v' \frac{P - P'}{2}$ the saving effected by the creation of new transport facilities.

The term $v' \frac{P - P'}{2}$ represents the payments made by former users (who agreed to pay the old higher charge P which was higher than P', and will therefore certainly be prepared to pay P') and by new users (who, on the whole, will be prepared to pay an average between the old and new charges). The volume of transport created by the new facilities, represented by the factor v', has been calculated on the basis of the traffic forecast contained in the note.

This formula raises three difficulties:

1. The period of amortization

Owing to rapid technical advance, it will be a rather difficult matter to forecast this period. Very different periods have been proposed, for example, one hundred years in the case of certain types of durable investments (ports, tunnels, embankments, quays) and sixty years in the case of other kinds of projects, such as railway infrastructure, and Bourrières points out that, on account of rapid changes in markets and in the political situation, some American companies write off their investments in underdeveloped countries within fifteen years (op. cit., p. 146).

2. The rate of interest

Where financial profitability, as such, is concerned, this rate is that at which the body responsible can raise loans. The problem becomes more complicated in cases where economic profitability is involved.

3. The problem of present worth or interim interest

Reference is made to this difficulty in the note. For example, a rate of 20% involves assessing income accruing in 10 years' time at a sixth of its value. A rate of 8% involves assessing income accruing in 10 years' time at approximately 50% of its value (see J.B. Mas — "Considérations sur les critères globaux de choix des investissements en pays sous-développés — in "Actualités d'outre-mer", No. 21 — January 1963).

The tendency to use a high rate of interest is due to the fact that the governments of the developing countries need to get results as quickly as possible. This involves a number of dangers: for example, there is a tendency to favour light industries at the expense of heavy industries, which are slower to show a profit.

In addition to this direct profitability, there is also indirect profitability from the circulation of wages and income, from new products on the market, etc. Such is the difficulty of calculating this second form of profitability that M. Bourrières considers it advisable to use instead a calculation of the productivity of investments obtained by dividing the cost of an investment project by the output in which it results (op. cit., p. 151), after all the factors have been calculated in terms of present worth.

ANNEX III

CRITERIA USED BY THE AID

In the economic evaluation of projects in which AID assistance has been applied for, a distinction is made between the following four cases:

1. Industrial projects: " the earnings must be sufficient to cover fixed charges, amortization, and maintenance and operating costs, and in addition produce an adequate return on the investment ".

2. Non-productive projects: " it must be reasonably demonstrable that the benefits to the national economy will equal or exceed the total costs of construction, operation and maintenance; or (if applicable) the service of the loan ".

3. Productive but non-profit-making projects: " they may or may not be completely self-sustaining. The total income and other economic benefits which can be evaluated must exceed the total costs over the life of the project ".

4. In the case of water or related land resource projects, the most important features of the evaluation criteria used will be found in the following passages from Chapters IV and IX of the booklet mentioned and Circular A-47 of the Bureau of the Budget (Annexes *III-A, III-B* and *III-C*).

ANNEX III-A

The following is taken from Chapter IV of the AID booklet " Feasibility Studies ". By way of illustration and for information purposes, the full text of this chapter, including the technical part, is reproduced.

ECONOMIC AND TECHNICAL SOUNDNESS ANALYSIS

Agriculture and irrigation projects

(Projects for the development or expansion of agricultural land, with or without irrigation)

(All topics in this outline should be considered in the Analysis, in so far as they are applicable to the project. Others should be included as necessary to complete the demonstration of the economic and technical soundness of the particular undertaking).

I. SUMMARY

Location, relation to other agricultural areas, and general plan of project, illustrated by an outline map.

Scope and magnitude of the project, area of new land served and total area benefited.

Major features of proposed development.

Principal crops grown and to be grown.

Estimates of benefits and costs.

Compliance with criteria of Circular A-47, Bureau of the Budget (Annex *III-B*).

Reference to any applicable reports (attached or readily available elsewhere).

II. ECONOMIC ASPECTS AND BENEFITS

A. Present Agricultural Production

Crops and acreages by types.
Yields, per acre and total.
Prices received at the farm and total value.
Deductions for farm input costs.
Net agricultural yield.

B. Factors Expected to Increase Production

Changes in farm sizes, tenure status and method of land allocation.

Land and water available for new settlers and improved irrigation service to present farmers.

New crops and modified rotations and cropping patterns.

C. Markets for Additional Crops

Location and size of markets and present and anticipated prices.
Transportation facilities and costs.
Estimated prices obtainable at the farm.

D. Agricultural Production After Completion of Project

Crops and yield.
Value at anticipated prices.
Deductions for farm input costs.
Net agricultural yield.

E. Benefits to Landowners

Gain in total agricultural production.
Annual net benefits to landowners.

III. ENGINEERING ASPECTS AND TECHNICAL SOUNDNESS

A. Description of Project Area

Topography of area and description of physical features accompanied by a map showing project area in relation to mountains, rivers, population centres, utilities and transportation facilities.

Climatological data, including records of precipitation, temperature, humidity, evaporation, wind direction and velocities, sunlight hours per month and length of growing season.

Geology of region with particular reference to water-bearing formations, movement of ground water, presence of harmful minerals and salts, strength and porosity of foundations for proposed structures and location of suitable construction materials.

Hydrology, including rainfall rates and frequencies, infiltration, run-off, ground water storage and depletion, and losses due to evaporation and transpiration.

Soil surveys, land classification and drainage condition of agricultural area.

Present land use in the project area, covering utilization for various crops, pasture and fallow, existing rotation systems and cropping patterns.

Water usage for various crops and for the area as a whole, quality of irrigation water, existing water rights and customs, laws and regulations concerning water usage.

Local communities and total rural population.

Farm sizes, land tenure systems, farm ownership and farm operating pattern.

Approximate portion of farm production retained on the farms for family subsistence.

Location, capacities and pertinent data on any agricultural processing plants such as sugar mills, natural fibre mills, packing plants, etc.

Availability and cost of agriculture credit both to landlords and tenants.

B. Engineering Surveys, Plans and Data

Preliminary studies made in sufficient detail to permit calculation of work quantities for all elements of project, including the following where applicable:

1. Dams — Most suitable type of dam for location selected, preliminary design, foundation exploration for dam and spillways, spillway size calculations, general features of outlet works, topography of dam site and reservoir basin, tailwater data, capacity-area curves for the reservoir, and location and description of available construction materials, such as earth, sand, gravel and rock.

2. Wells — Location, extent, depth, character and permeability of water-bearing formations, the velocity of underground flow, depth to the natural water surface, drawdown, circle of influence, the types, locations and capacities of wells to be used, and water quality determinations.

3. Canals — Location, design, calculation of quantities, estimates of water losses, need for lining, and plans for handling silt. If also used

for water-borne transportation describe any special features for traffic use.

4. Structures — Location and preliminary design of diversion structures, intakes, weirs, siphons, flumes, wasteways, drops, checks and chutes, highway and railroad crossings, headgates and water measuring devices, with estimates of types and quantities of materials needed.

5. Drainage — Location, design and calculation of quantities of project drains to receive all waste or surplus water from main canals and laterals and to collect and remove the surface and underground drainage water produced by seepage and deep percolation losses; typical soil profiles to show drainage possibilities; and intended use of natural channels as part of drainage system.

6. Land development — Preliminary estimates of land area to be irrigated, land levelling to be done, extent of farm irrigation and drainage systems required, types of irrigation to be used and auxiliary facilities needed such as housing, schools, hospitals, experiment stations, etc.; estimated seasonal and total crop water needs for each crop to be grown and consequent irrigation delivery requirements, based on a knowledge of local climatic and soil conditions, production objectives, and irrigation water application techniques, taking into account irrigation efficiencies, peak demands, evaporation, effective precipitation and water needed to maintain a favourable salt balance.

C. Plans and Specifications

Preliminary plans for the main elements of the project sufficient to permit a reasonably firm cost estimate to be made, including auxiliary features such as access roads and construction camps and roads.

Outline specifications defining the proposed standards of quality of construction which will have a major effect on the cost of construction, with specific justification for any standards which are unusual in the local situation.

D. Construction Labour, Materials and Equipment

Manpower requirements and availability of skilled and unskilled labour and technical and supervisory personnel.

Availability of cement, steel, aggregates, and other major construction materials, indicating what is available locally and what must be imported.

Type of work to be done by manual labour.

Type of construction equipment required for the work, indicating what is available locally and what must be imported.

E. Special Construction Problems Foreseen

Climatic conditions, especially time and length of wet and dry seasons, as they affect construction schedule and equipment use.

Necessity of keeping existing canals, highways and railroads in operation during the construction period.

Possible landslide problems.

Time required to obtain delivery of imports.

F. Management of Completed Project

Name of organization to be responsible for management.

Names and qualifications of key officials, accompanied by an organization chart showing functions performed.

Procedure to be adopted to assure expert management throughout the life of the proposed loan.

Proposed method of assessing and collecting taxes or charges for use of water or facilities.

G. Operation and Maintenance

Description of general method of operation.

Schedule showing progressive development of the project, covering land served and water used annually until project is fully developed.

Availability of necessary trained operating personnel and required facilities and equipment.

Availability to provide the necessary level of maintenance required for new system when completed.

Plan for personnel recruiting and training.

Source of funds to be used for meeting operation and maintenance costs prior to the time the project becomes self-supporting.

Availability of foreign exchange needed for the importation of any operating materials, supplies and spare parts not available locally.

IV. FINANCIAL ASPECTS

A. Estimated Capital Cost

Estimates of cost of land, engineering and construction.

Total estimated capital cost in US dollars and local currency:

i) To be financed by applicant;
ii) To be financed by loan/grant.

Estimated average cost per acre of land benefited.

B. Maintenance and Operation Cost

Annual cost of labour, supervision, equipment operation, operating supplies and repair parts, training expense, administration.

Breakdown to show dollar costs and local currency costs.

Annual cost per acre benefited.

C. Estimate of Overall Annual Costs

Annual depreciation and interest on total project investment based on estimated life of project and on the going interest rate for development projects in the country.

Annual operation and maintenance expense.

Total annual cost.

Average annual cost per acre benefited.

D. Estimated Revenues

Total annual benefit to landowners (see Section *II* above) and average benefit per acre.

Estimate of maximum amount which landowners would be able to pay annually in water charges or land taxes to meet annual cost of project and still retain reasonable profits on their operations.

Proposed schedule of taxes or water charges to be collected from landowners.

Estimated total revenue for each of first 10 years after completion of project.

E. Economic Soundness of Project

1. Benefit-cost ratio, determined in accordance with Circular A-47 of the Bureau of the Budget (Annex *III-B*), taking into account:

i) Benefits measured by expected net farm income (Section *II* above);
ii) Economic cost of the project including operation, maintenance, interest and depreciation.

2. Ability of project to meet costs, demonstrated by pro forma Profit and Loss Statements showing anticipated operating revenues as against maintenance and operating cost, interest, and depreciation or amortization of debts for ten years after completion of project.

V. NATIONAL ECONOMIC BENEFITS

Overall increase in land values within and surrounding the project.

General increase in business and industry caused by additional crop production.

Increase in general tax receipts.

Gains or savings in foreign exchange, where farm products are exported.

Raising of standard of living in project area.

Direct benefit to population through local expenditures of project funds for labour, materials, food, rent, etc. (temporary benefit).

ANNEX III-B

EXTRACTS FROM CIRCULAR No. A-47 OF THE BUREAU OF THE BUDGET

(agricultural projects) (pp. 3-10)

(...)

c) "Benefits", as used for purposes of evaluation of proposed programmes or projects, means all the identifiable gains, assets, or values, whether in goods, services, or intangibles, whether primary or secondary, and whether measurable in monetary or non-monetary terms, which would result from the construction, operation, or maintenance of a programme or project.

d) " Primary benefits " means the identifiable gains, assets, or values directly resulting from any programme or project.

e) " Secondary benefits " means identifiable gains, assets, or values other than primary benefits of a programme or project which are properly creditable to the programme or project.

f) " Economic costs ", as used for purposes of evaluation of proposed programmes and projects, means all the financial costs of the programme or project except investigating, surveying and planning costs incurred prior to authorization; and all the other identifiable expenses, losses, and liabilities, whether in goods, services, or intangibles, whether direct or induced, and whether measurable in monetary or non-monetary terms, which are incurred as a result of constructing, operating, or maintaining a programme or project.

g) " Financial costs " means all the monetary outlays made in connection with a programme or project and interest costs connected therewith, i.e. the construction costs, the operation and maintenance costs, and interest on the unliquidated balance of the reimbursable construction costs. When applied to allocations made to irrigation for repayment purposes under paragraph *7a* below, " financial costs " shall not include interest on the irrigation construction costs.

h) " Construction costs " means expenditures (amounts paid and payable) for the initial project construction and the net replacements and additions of significant units thereof, including contract work, materials and supplies, labour, and use of equipment; acquisition of lands, easements, rights-of-way, and water rights; costs of relocating facilities and the settlement of damage claims; interest during construction; any capital expenditures for protection of public health, for preventing loss of or damages to recreation, fish and wildlife and mineral resources, and scenic, archaeological, and historical values; any capital expenditures for the replacement of recreation and fish and wildlife resources damaged or destroyed by the project; the appropriate portion of engineering, administrative and general expenses of the agency relating to the project; and all other amounts of expenditures specifically applicable to the investigations, surveys, plans, designs, and construction of the project. When applied to allocations made to irrigation for repayment purposes under paragraph *7a* below, " construction costs " shall not include interest during construction on the costs allocated to irrigation.

i) " Operation and maintenance costs " means those expenditures for materials and supplies, labour, necessary services, equipment and operating facility use, and an appropriate portion of engineering, supervision and general expenses of the agency which are needed to operate a project once constructed and to make repairs, minor additions and replacements, and otherwise to maintain the project in sound operating condition for a maximum economic life. This includes any expenditures of the project, other than capital expenditures, for protection of public health, for preventing loss of or damages to recreation and fish and wildlife resources, and scenic, archaeological and historical values; and any expenditures of the project, other than capital expenditures, for the replacement of recreation and fish and wildlife resources damaged or destroyed by the project.

j) " Net revenues " means the difference between the total revenues of the programme or project or separable purpose thereof and the strictly allocated financial costs of such programme, project or purpose.

(...)

7. Information for inclusion in, and criteria for review of, evaluation reports

a) The following categories of information... shall be included in the evaluation report proposing authorization of a new water or related land resources programme or project.

(...)

1) A description of the need for the production or services which would result from the programme or project; the relation of the programme or project to the other elements of the resource development programme of the region in which the programme or project is to be undertaken; the contribution of the programme or project to balanced national conservation and development; and the efficiency of the programme or project in meeting regional or national needs.

An important consideration in the review of evaluation reports will be whether execution of the programme or project, and, within practical limits, execution of each separate part of a programme or project, will be more economical than alternative means available in the region for meeting the same needs. ...

2) A concise but complete estimate of all the benefits and all of the economic costs of undertaking the programme or project. In addition to

comparing the total benefits of the programme or project with its total economic costs, the estimate should also show separately the particular benefits and economic costs attributable to each purpose of the programme or project. Wherever appropriate, benefits and economic costs shall be expressed in monetary terms. Where monetary estimates cannot reasonably be made, the relative significance of such benefits and costs shall be stated in as precise and quantitative terms as possible. Because any long-term estimates are subject to wide margins of error, the results should be expressed in ranges rather than in single figures. The estimate should be made from an overall public or national viewpoint and should indicate any specifically identifiable groups, localities, or districts receiving programme or project benefits.

While it is recognized that a comparison of estimated benefits with estimated costs does not necessarily provide a precise measure of the absolute merits of any particular programme or project one essential criterion in justifying any programme or project will, except in unusual cases where adequate justification is presented, be that its estimated benefits to whomsoever they may accrue exceed its estimated costs. ...

3) Financial costs shall be converted to an annual basis to make possible a comparison of annual financial costs and annual revenues...

4) A statement as to the source and nature of, and an appraisal of the adequacy of, the basic information available and used during the preparation of such programme or project and the methods employed in the analysis and interpretation of such basic information.

(...)

8. Benefits to be included in evaluation

The evaluation report prepared in accordance with paragraph 7 shall include an estimate of the primary benefits of the programme or project. Unless the report sets forth clear justification for considering other factors, main reliance in the review of project reports will be placed on the following categories of primary benefits:

a) Reduction of flood damage (...) to land and other public and private property; and prevention of loss of life.

b) Increase in the expected net income obtained directly from changed use of the property made possible by any form of flood control.

c) Increase in expected net income from lands on which watershed treatment measures are to be installed as part of the programme or project.

d) Increase in expected net farm income from additional production or reduced cost of production of farm products as a result of reclamation of land.

(...)

The evaluation prepared in accordance with paragraph 7 shall also include an estimate of any secondary benefits which the programme or project will provide. The evaluation shall include a separate showing of total primary and total secondary benefits. ...

The evaluation shall be based mainly upon primary benefits.

The evaluation shall also include an appraisal of the general benefits which will accrue through such effects as safeguarding life and public health, stabilizing national and regional food and raw materials production, and contributing directly to the improvement of technically underdeveloped areas within the nation's boundaries.

9. Costs to be included in evaluation

The evaluation prepared in accordance with paragraph 7 shall include an estimate of the total construction costs and the total operation and maintenance costs of the programme or project...

Such an evaluation shall also include a statement of economic costs expected to be induced by the programme or project, such as the costs of:

a) Displacement of people.

b) Decreased value of lands, minerals, water quantity or quality, and other water or related land resources, where not reflected in market values.

c) Rectifying adverse effects upon sanitation, transportation, highway construction or maintenance, or other activities reasonably foreseen as being affected by the programme or project.

d) Business losses, such as disruption of trade or diversion of waterborne traffic from existing ports or channels.

e) Losses in State or local tax revenues...

f) Unprevented and uncompensated losses of or damages to fish and wildlife resources; recreation resources; and scenic, archaeological or historical values.

g) Abandonment of economically useful structures, such as locks and bridges.

Such an evaluation shall also include an appraisal of other detriments to the general welfare, whether or not they can be measured in monetary terms, and the groups which will suffer any substantial injury should be identified so far as feasible.

10. Comparison of benefits and economic costs

Benefits to be obtained and economic costs to be incurred throughout the assumed economic life of a programme or project... where expressed in monetary terms, shall be converted to a common time basis to facilitate the comparison called for in paragraph 7*a* (2). Where benefits and economic costs are compared on an annual basis, interest on the construction costs should be included in the computation of average annual equivalents for total economic costs. Where the present net worth method of comparing benefits and economic costs is to be used, future benefits and economic costs should be discounted to present values. Using an interest rate to cumulate benefits and economic costs is necessitated where the net gain or loss at any given time during the operation of the programme or project is to be computed. ...

11. Criteria for allocation of costs

The evaluation report prepared in accordance with paragraph 7 shall include a tentative allocation of the construction costs and operation and maintenance costs of the programme or project to the several purposes to be served, which allocation shall serve as the basis for the proposed reimbursement.

ANNEX III-C

EXTRACTS FROM CHAPTER IX

Economic and technical soundness analysis of highway projects (pp. 1-5)

(...)

II. ECONOMIC ASPECTS AND BENEFITS

A. Position of Project in Overall Programme

Present highway system.

Present transport systems other than highway (rail, air, water, pipelines, etc.).

Extent to which inadequacies of transport are retarding economic growth.

National programme for highway development and priority of project within the programme.

B. Relation to Other Transport Systems

Present distribution of traffic among the various types of transport in the project area.

Anticipated effect of project on such distribution and on economics of other transport systems.

Relative availability of vehicles, operating personnel, fuel, servicing, etc.

Estimated or actual comparable transportation costs for the various systems.

C. Effect on Development in Project Area

General description of area served (physical and economic geography, including agriculture, processing, manufacturing, centres of population, topography, geology, vegetative cover, and climate as related to traffic generating economic activity).

Estimate of volume of exportable surpluses of commodities available in the area and requiring transport to outside markets.

General economic effect of additional commerce anticipated as a result of proposed project.

D. Anticipated Economic Benefits

Increase in special tax receipts (gasoline, road and bridge tolls, local custom duties, etc.).

Increase in general tax receipts which will result from increased economic activity.

Reduction in transportation costs, including vehicle operating and maintenance costs.

Increased income to area served.

Lower costs of other planned development projects which will be served by this project.

Gains by opening new land for settlement by outside population presently unemployed or underemployed.

Direct benefit to local population through local expenditure of the project funds themselves for labour, materials, food, rent, etc. (temporary benefit).

III. ENGINEERING ASPECTS AND TECHNICAL SOUNDNESS

A. Present and Future Traffic Generating Activities

Size, distribution, and economic activities of the population.

Nature and tonnages of cargo imported into, exported from and passing through the area.

Schools.

Population trends.

New types and amounts of traffic expected to develop as a result of project.

Projections of present traffic without and with proposed project.

B. Traffic Capacities

Theoretical capacity of present highway (number of vehicles, tonnage and maximum loads).

Present use of highway (based on traffic counts or other means of estimating).

Estimated future use projected to end of proposed loan period.

Relation of present and estimated future use to present and future theoretical capabilities.

C. Justification of the Scope of Improvement

On basis of maximum load and traffic volume requirements.

On basis of general development of the country.

(...)

J. Maintenance Organization

Description of applicant's present and proposed maintenance organization.

Applicant's ability to provide the necessary level of maintenance for new highway when completed.

Availability of equipment and trained maintenance personnel.

Plan for recruiting and training.

Applicant's ability to finance additional maintenance work, and plans for providing funds at proper time.

IV. FINANCIAL ASPECTS

(...)

B. Maintenance and Operation Cost

Annual cost of labour, supervision, equipment operation, operating supplies and repair parts and administration.

Breakdown to show dollar costs and local currency costs.

V. COMPARISON OF BENEFITS AND COST

Summary of tangible and intangible benefits as described in Section *II* above, with estimate of monetary value so far as practicable.

Annual cost including interest and amortization on investment and operating and maintenance charges.

Comparison of benefits with costs.

ANNEX IV

PROJECT EVALUATION CRITERIA USED BY THE UNITED NATIONS

The United Nations publication gives detailed mathematical criteria for the evaluation of projects, together with examples of their use. However (see quotation on p. 12), it is recognized that these criteria are not completely accurate and must not be used singly but in combination. They can be applied more easily in the case of industrial projects, but are not used exclusively for the evaluation of these projects.

I. The first set of possible criteria is that used by private entrepreneurs: financial profitability in the strict sense and capital productivity.

II. Derived from these, and more important for the purposes of evaluating international aid projects, are the so-called social criteria (op. cit. pp. 216-242 — see p. 11):

1. The product/capital ratio

Value added is taken to be the difference between the sales value of estimated production in the project and purchases to enable that production level to be reached. It is numerically equal to the total of salaries, wages, rent, interest and profits. Value added can be either net or gross and estimated at factor cost or market price, according to whether depreciation or indirect taxes and subsidies are excluded.

2. Capital intensity

This criterion is explained by a number of different mathematical expressions. That most frequently used defines capital intensity as total capital (being all the production factors) required per unit of value added or gross annual value produced. The first-named ratio is the reciprocal value of the product/capital ratio and is known as the "capital coefficient"; the second is the reciprocal value of the rate of capital yield. Other mathematical expressions use only the capital factor in the strict sense, i.e. depreciation per unit of value added, usually in percentage form.

3. Employment per unit of capital

This coefficient may be preponderant in cases of widespread unemployment. It is obtained by dividing the number of persons employed in the project by the latter's total capital requirements.

It is pointed out in the United Nations publication that, since the labour force available in underdeveloped countries is usually unskilled, it would be useful to calculate a special coefficient giving the ratio of unskilled labour per unit of capital. Moreover, it is sometimes possible, and always useful, to calculate the employment which results.

4. Labour productivity

Labour productivity can be defined as production value obtained per person employed. For convenience, production should be expressed in terms of value added. The labour force can either be expressed in terms of man/years and man/hours, or as monetary units equivalent to the cost of employed manpower.

5. Marginal social productivity of capital and its contribution to national income

This criterion, which is borrowed from an article by the American economist Hollis B. Chenery, is one of the most interesting proposed in the United Nations publication.

The formula is as follows (op. cit. see pp. 226 sqq. — see p. 11):

$$SMP = \frac{X + E - Mi}{K} - \frac{L + Md + O}{K} - \frac{r}{k}(a B_1 - B_2)$$

where:

SMP = social marginal productivity defined as "the average annual increment in national income" plus "balance-of-payments" equivalent;

K = investment;

X = the increase in annual production value originated by the project, at market prices, after excluding tariffs, taxes and subsidies;

E = value added to production due to "external economies"; the expression "external economies" is defined by the American economist Everett E. Hagen as "a reduction in a production cost for a given firm or industry resulting from the establishment or growth in size of some other firm or industry";

Mi = the cost of imported materials;

L = labour cost;

Md = the cost of domestic materials;

O = fixed costs, including administration costs and depreciation;

r = units of national income equivalent to an improvement of one unit in the balance of payments owing to over or underevaluation of the exchange rates; arithmetically, "r" is obtained by subtracting the official from the real rate of exchange and dividing the difference by the official rate;

a = combines rate of amortization and interest on foreign loans;

The formula is as follows:

$$a = \frac{i\,(1 + i)^n}{(1 + i)^n - 1}$$

where: i = rate of interest
n = period of amortization

B_1 = effect of the project's installation costs on the balance of payments;

B_2 = effect of the project's operation upon the balance of payments.

According to Chenery, the use of partial coefficients, such as that of value added per unit of capital invested, would have led, in the case of specific arithmetical examples, to results different from those obtained if a global criterion, such as that of social marginal productivity, were used.

This global criterion does indeed appear sufficiently elaborate to take account of all the various aspects of the project. However, the most interesting factor – the last term of the second part of the equation (balance-of-payments factor) – seems likely to prove the most awkward to calculate. The other components may be reduced to other known criteria (profitability, cost/benefits ratio, etc.).

6. Finally, the last criterion in this series is concerned solely with the balance-of-payments factor and the extent to which it is affected by the project. This criterion involves calculations, for which extremely accurate and detailed information is required, of the effects in terms of national currency and foreign exchange of all the operations involved in the project.

III. The last series of criteria is a set of "combined criteria" and is as follows:

1. *The productivity of the input complex*

A. The benefits/costs ratio

A definition of this criterion is given in the United Nations publication. The United Nations services consider that it should comprise the "indirect" effects of the investment project and its "social pricing", i.e. the benefits which cease to be obtained from the alternative use of the resources.

Costs and benefits will be divided into two types: primary and secondary

a) Primary costs may be either "direct" or "associated". The direct costs of a project are the value of the goods and services used in the establishment, maintenance and operation of the project throughout its useful life; associated costs cover the preparation for use or sale of the goods or services produced by the project. In an irrigation project, for example, the direct costs are those required to place the water at the disposal of the farmer, including those for the operation and maintenance of the irrigation works; the associated costs are those incurred by the farmer, including the cost of the water, in order to work the irrigated lands and produce crops. The value of the goods and services obtained from these two types of costs are the "primary benefits" and, in the case of an irrigation project, are equal to the value of the wheat produced by the farmer.

b) The secondary costs are the value of the goods and services used as a consequence of the project, excluding direct and associated costs. They include subsequent manufacturing costs of the immediate goods or services of the project and, in the case of the irrigation project mentioned, the costs of transport, milling of the wheat, and possibly baking and distribution.

The secondary benefits are those values which are added over and above those of the project's immediate goods and services as a result of activities which it initiates or induces. Using the same example, the difference between the value of the bread and that of the wheat which it contains would be a secondary benefit.

In most cases, the merits of a project may be assessed by measuring only primary costs and benefits. In cases where the associated and secondary costs have special importance, it may be desirable to compare the sum of the secondary and associated costs with the gross benefits obtained.

As regards benefits attributable to the project, which must be taken into account for the application of the criterion, it is advisable to take into account the difference between the total primary benefits and the associated costs. In the case of the irrigation project quoted as an example, the primary benefit attributable to the project will be the market value of the wheat, less the farmer's costs, but excluding payments made for the use of the water.

Once the various factors have been assembled, it is necessary to calculate the benefits/costs ratio. This involves, first, the total annual cost (operation and maintenance plus annual equivalent of capital cost), as well as the annual benefit, obtained by calculating the increase in net annual income during the useful life of the project, in terms of present worth at the beginning of the project's useful life and weighted to take into account the years which elapse before the project yields real results, and, finally, converted into terms of annual equivalence. The benefits/costs ratio thus obtained constitutes the desired ratio.

B. The criterion of value added/input

This criterion has been defined by the economist Jorge Ahumada. It takes into account both direct and indirect value added, together with production factors, including profits.

This criterion is based on the theory that the variable which should be maximized is the growth of per capita income. The value added by the project should therefore be as high as possible per unit of production factors. As to the method of calculation, it includes salaries and wages, interest, rents and profits, calculated at market prices, and eliminating subsidies, taxes and tariffs, for the entire useful life of the project. The production factors include all the direct or indirect resources used by the project during its useful life, including profits, calculated at opportunity costs.

The difference between the two terms of the formula merely involves, therefore, the inclusion in the denominator of depreciation of capital and the evaluation of factors contained in the opportunity costs.

This criterion would seem to be of interest, since it takes into account various factors which have an important bearing on the development of a country but which are probably difficult to calculate.

2. *Qualitative weighting of partial evaluation criteria*

This weighting has been used in the case of industrial projects and is mentioned merely for information purposes. It enables a table to be drawn up showing, in the case of various possible industries, the results of various tests (output, stability, effect on the balance of payments, etc.) in the form of symbols and not in figures. The final evaluation is entirely subjective.

The value of the criteria proposed by the United Nations lies in the fact that they aim at defining more exactly the factors to be taken into account in establishing a given rate or ratio. However, it will be seen, on examination, that while they appear useful where a choice has to be made between a number of industrial projects, they are of limited use when it is simply a question of deciding, on economic grounds, whether an infrastructure or land improvement project is worth while.

ANNEX V

CRITERIA USED BY FIDES

The following extracts from regulations explain the criteria used by FIDES in evaluating projects.

I. The circular accompanying Decree No. 49-732 of 3 June 1949 on the preparation and implementation of equipment and development schemes under Act No. 46-860 of 30 April 1946

(...)

7. " Thus, a project may not be included in a work programme unless it meets the following requirements:

a) contributes to the implementation of the Plan,

b) forms a whole and can be operated independently,

c) final plans must have been drawn up (by way of exception, this requirement may be interpreted broadly in cases where the surveys are themselves included in the contracts),

d) do not necessarily involve additional equipment costs,

e) a precise costs estimate must have been drawn up. "

(" Service de coordination des affaires économiques et du Plan " of former French West Africa: " Réglementation concernant la réalisation des plans d'équipement et de développement économique et social des territoires d'outre-mer " — brought up to date as at 30 June 1957) (p. 63).

Standard from to be completed in the case of investment projects:

I. General description of project;

II. Brief estimate;

III. Technical description of project;

IV. Work carried out or in progress already financed;

V. Financial details of operation;
   a) possible operating costs,
   b) maintenance costs,
   c) budget to which these costs are chargeable,
   d) profitability;

VI. General grounds for the project:
   1. Economic importance,
   2. Social importance;

VII. Similar investments financed from local funds (op. cit., pp. 81 and 82).

II. Ministerial circular No. 9817 of 26 December 1955 on the implementation of Decree No. 55-1598 of 1 December 1955, establishing the territorial scope of FIDES.

" All projects must be fully examined from the technical, economic and financial angles. Thus, for example, as regards output, the financial description of a project must be accompanied by the following information:

a) (Technical) original estimates, execution of projects, possible amendments to the scheme following initial work, operating methods contemplated and actually used;

b) (Economic) costs and results of operations; statistical analysis of the benefits expected from the cultivation of new land or from the use of improved methods, both by farmers and by the public authorities (in particular, the tax authorities).

As far as infrastructure is concerned, this information should be supplemented by a survey:

a) of present traffic and probable developments during the next few years;

b) of present transport rates, and the rates which may be charged after completion of the project, assuming that general business conditions remain the same or follow the trend hoped for;

c) of the place occupied by the project in the regional or local improvement plan, and its effect on the local and regional economy.

In general, details should be given of the costs incurred by the local authorities in operating and maintaining the proposed equipment and the measures taken or contemplated for this purpose. This information must be particularly full and precise in the case of school and hospital projects and the supply of technical supervisory staff, where these responsabil-

ities are temporarily assumed by FIDES and taken over progressively by the authorities receiving aid" (p. 106).

III. It should be noted that, in addition to this information, progress reports are to be supplied half-yearly and annually on projects being carried out (see Circular No. 92 of 2 February 1955 on the half-yearly progress reports of FIDES in former French West Africa).

These reports should include the following:

a) General survey of the work carried out during the period under review and an account of any contingencies which affected this work.

The first paragraph of this section should give not merely an analytical summary of the work in progress; it should describe, by sectors of economic activity, the main lines of investment policy, and give a rapid description of the main work completed or undertaken during the past six months (the report being submitted on 31 December) or for the past 12 months (the report being submitted on 30 June).

The second paragraph will give a brief outline of the main factors (administrative, social, technical, etc.) which have influenced the implementation of the schemes, such as the preparation and launching of the schemes, surveys, conclusion of contracts, progress of work, etc. (p.176).

(...)

d) Appraisal of the results achieved and of the financial, economic, and social effects of the work carried out.

1. Financial repercussions of projects financed by FIDES (overseas division):

i) possible operating or maintenance costs;
ii) output obtained or expected (independent revenue, various charges, savings ...);
iii) effects or possible effects on local finances: overall budget, local budget, annexes showing costs, such as operating costs, etc., and receipts.

2. Economic effects, social: disinvestment.

This section must be illustrated by comparative tables or estimates, as far as possible expressed in figures, of the trends in the main sectors concerned (p.177).

Attached to the report are a number of loose sheets to indicate " direct and indirect effects " of the projects on the lines set out below:

Direct effects:

i) Areas of land improved, seed, seedlings, fertilizers supplied, silos built ..., etc.;
ii) Areas reafforested or protected ...;
iii) Areas of pasture land improved or enclosed, census of existing wells or borings, veterinary establishments built, slaughterhouses, drying installations ...;
iv) Statistics on treatment and vaccinations ...;
v) Extension or improvement,

a) of the railway network,
b) the road network,
c) the inland waterway network,
d) airports;

vi) Extension of schools ...;
vii) Extensions to hospitals or clinics ...;
viii) Allotments laid out; access ...;
ix) Improvement and increase of number of water supply points, increase of water supply ...;

Indirect effects:

i) Development of output, marketing and consumption; percentages of standards required for export, yields, etc.;
ii) Effects on erosion and water regulation ...;
iii) Livestock, sales of livestock, animal health situation, statistics on slaughtering and on production and sale of by-products (skins and hides ...);
iv) Statistics on traffic and means of transport, number of vehicles, tonnage transported, freight costs ...;
v) School attendance, pupils enrolled, boarders, day pupils, pupils sitting for examinations and successful candidates;
vi) Outlets expected and obtained;
vii) Statistics on persons entering hospital, consultations, etc. ...

a) persons receiving hospital treatment,
b) maternity cases,
c) sickness rate, etc.;

viii) Statistics on water consumption, number of subscribers to water supply systems, etc. " (p.182).

ANNEX VI

FACTORS TO BE CONSIDERED IN PROJECTS SUBMITTED TO THE EDF

When a project of whatever nature is submitted to the EDF, one of the most important factors to be considered is how the project fits into the general development plan of the country concerned, how it may be geared to the general pace of development and to development schemes.

The other important considerations, which tend to vary more from one project to another, are listed below.

ANNEX VI-A

LAND IMPROVEMENT

1. How does the project fit into the plan or into the general framework of the Government's agricultural policy (development of a crop, region, etc.)? Efforts or investments already made in this connection – their sources and results.

2. Information on the area

A. Population concerned:

i) population density,
ii) total population and, possibly, distribution by sub-regions,
iii) demographic trend (rate of growth),
iv) migration,
v) reaction to change, cultural traditions, etc.,
vi) employment (number of working days per year/per person, value of working day, etc.),
vii) income (total income and income in money terms) (where applicable, distinction between landowners and sharecroppers, etc.),
viii) balance of food supplies.

B. Present production and farming conditions:

a) Present production:

i) food crops, industrial crops, exportable crops, etc. (in tons),
ii) acreage sown to each crop,
iii) yield of each crop;

b) Farming conditions:

i) methods of cultivation (with or without irrigation, use of draught animals, water supply),
ii) fertilizers,
iii) mechanization,
iv) cattle; fishing,
v) agricultural supervisory staff;

c) Farm structure and tenure:

i) various types of farms – their relative size,
ii) gross operating income and balance sheet (various costs),
iii) agricultural credit system,
iv) land tenure.

C. Marketing of products:

i) existence of markets (home and external) and their size,
ii) communication,
iii) stocking,
iv) producers' prices compared with average prices on the home market.

D. The problems raised by this situation, e.g.:

i) unbalanced food production or imports,
ii) irregular production,
iii) low yields,
iv) low income in money terms,

v) underemployment,
vi) low value of working day,
vii) various possible solutions,
viii) reasons for choosing the proposed solution.

3. Nature of the project

A. Solution of one or more problems:

i) Scope of the project,
ii) Location,
iii) Duration,
iv) Necessary additional investments: final operations, equipment, buildings, accommodation (evaluation and source of financing).

B. Execution of project:

i) Distribution of land,
ii) Cropping plan,
iii) Use of new methods of cultivation (provision of additional supervisory staff, distribution of fertilizers, existence of a co-operative for the use of farm machinery),
iv) Final operations (mention should be made of the parties responsible for their execution),
v) New marketing methods,
vi) Operating costs (how they are to be covered).

4. Value of project

A. Financial profitability:

a) Profitability rate,

b) Capital — output ratio (from the year 0 to the year 5 or 10),

c) Benefit/cost ratio,

d) Cost per job created and production per job created,

e) Recurrent budget expenditure or tax receipts.

B. Economic usefulness of the project:

a) At regional level:

i) regional use of additional production,
ii) increase in employment,
iii) increase in the value of the working day,
iv) increase in per capita income,
v) induced investments (in trade and industry);

b) At national level:

i) effect on the balance of payments,
ii) influence of the project outside the area concerned,
iii) emigration from over-populated areas,
iv) external economies;

c) Increase in capital put into circulation by the project (absorptive capacity) and wages and payments transferred abroad (balance of payments).

C. Comparison of project with others of the same type and explanation of higher costs if the case.

ANNEX VI-B

ROADS

1. How does the project fit into the development plan or into the general framework of the Government's policy on communications (regional development, concentration of ports, etc.)? Investments already made (location — nature — amount — source of financing) — and their results.

2. Specific nature of the project

A. The area concerned:

i) Demarcation,
ii) Population and its distribution (centres of population),
iii) Present resources and production (possible development),
iv) Present regional road system;

B. Means of transport at present available:

i) How are goods transported?
ii) Nature of goods,
iii) Tonnage of goods and number of passengers carried: through traffic and local traffic,

iv) Transport rates,
v) Present state of the road it is proposed to improve;

C. Regional development:

a) Without the road: projects for increasing production in the area, schools... (projection);

b) With the road:

i) new goods which can be put on the market,
ii) assessment of tonnages (projection);

c) Exact nature of the problems to be solved:

i) replacement of a road inadequate for present or future tonnages,
ii) regional development,
iii) bringing isolated sections of the population into contact with one another,
iv) possible alternative solutions;

d) The type of road chosen.

3. Value of the project

A. Financial aspect:

i) Present costs } annual and periodical
ii) Future costs } maintenance,
iii) Tax on petrol,
iv) Saving on transport,
on the basis of which:
profitability rate calculated,
costs/benefit ratio (from the year 0 to the year 5 or 10),
effects on the budget;

B. Economic and social aspect:

i) Improvement in terms of trade (by lowering the price of goods and improving their quality by speedier transport),
ii) Lowering the prices of main consumer goods,
iii) General considerations:
a) induced investments
b) impetus given to economic activity (paragraph 2) C);

C. Comparison of project with others of the same type and explanation of higher costs if the case.

ANNEX VI-C

PORTS

1. How does the project fit into the transport plan (where a commercial port is concerned) or into the "production" section of the overall development plan (where a fishing port is concerned)? Efforts or investments already made in this field (their source, location, nature, amount, and results).

2. Specific nature of the project

A. The area concerned:

i) Demarcation,
i) Population and its distribution — demographic trends,
iii) Resources and present and future production,
iv) Importance of the port in the economic life of the country (statistics);

B. The port as it exists at present:

a) Situation vis-à-vis the country's other ports and foreign ports competing with it;

b) Equipment (harbour works, buildings and installations) — their date — degree of adaptation to present requirements (capacity of port);

c) Present traffic:

i) nature (private fishing for own account and fishing on industrial scale — long-haul traffic — coasting),
ii) composition (number of vessels, of tons handled, of passengers),
iii) value and destination of catches or goods,
iv) transport charges (with detailed breakdown).

In cases where no port exists at present, details should be given of the port used either inside or outside the country, and of the costs arising from its use;

C. Possible developments:

i) Traffic trends over the last 10 years (goods, passengers) — forecasts of future developments without the proposed investment,
ii) Increase in the country's resources (nature, tonnage) made possible by the proposed investment,
iii) Possible increase in exports (volume, prices, destination: market research — return freight);

D. Problems raised by this situation and proposed solution:

i) Problems raised, e.g. concentration of ports,
ii) Various possible solutions,
iii) Reasons for choosing proposed solution and type of assistance agreed upon.

3. Nature of the project

A. Operations involved:

i) their nature,
ii) location,
iii) duration,
iv) additional private investments required.

B. Operation: port authority or other system.

4. Value of project

A. Port's outline budget:

i) Operating costs,
ii) Maintenance costs,
iii) Income,
iv) Saving made as compared with present situation — on the basis of which the rate of financial profitability is calculated.

N.B. Some investments have a sufficient degree of direct profitability to justify use of credits and not subsidies (e.g. sheds for warehousing and handling).

B. Economic usefulness of project:

a) Income due to increase in production (in the case of fishing),

b) Domestic income resulting from saving on costs and increase in value added (e.g. owing to expansion of fishing industry); increase in household income owing to a higher level of employment and lower prices of goods,

c) Inflow of foreign exchange owing to increase in transit trade for the account of other countries and increase in exports: effects on the balance of payments,

d) Budgetary aspect: income from taxation as a result of increase in transactions and in wages paid.

C. Comparison of project with others of the same type.

N.B.: The list may be applied, *mutatis, mutandis,* to airport projects.

ANNEX VI-D

RAILWAYS

1. How does the project fit into the development plan or into the Government's general communications policy? Investments already made (their source, location, nature, amount and results).

2. Situation of project

A. The area concerned:

i) Demarcation,
ii) Population and its distribution,

iii) Resources and present production (possible future trends);

B. Existing transport in the area:

i) General description of railway services,
ii) Position of the railway system affected by the project:

1. Present traffic (goods, passengers, average distance, charges) and recent trends,
2. Other means of communication (competition between rail and road transport) — charges made by these different means of transport,
3. Foreseeable traffic in 5 or 10 years' time,
4. Present equipment (total length of railways, type, date, routes, rolling stock: age and capacity, staff),
5. Legal position,
6. Present financial situation and recent developments — causes;

C. Problems to be solved and reasons for choosing the proposed solution.

3. Scope of project

A. Operations involved:

i) their nature,
ii) location,
iii) duration,
iv) additional investments required;

B. Investments made and their ownership.

4. Value of project

A. Financial considerations:

i) Outline budget,
ii) Profitability rate,
iii) Cost/benefit ratio (from the year 0 to the year 5 or 10),
iv) Effects on the budget;

B. Economic and social considerations: see Annex *VI-B*;

C. Comparison of project with others of the same type.

ANNEX VI-E

INDUSTRIES

1. The Government's industrialization policy — earlier schemes — how does the project fit into the general scheme ?

2. Financing (private capital: origin and amount — public capital).

3. Situation of the project

A. Economic and social context:

a) The area concerned:

i) Demarcation,
ii) Infrastructure,
iii) Present production;

b) Population:

i) Location, density, growth,
ii) Standard of living and of vocational training, employment and income;

c) Existing industries;

B. Description of the industrial project:

i) Nature and size of the enterprise — location — similar existing enterprises and their capacity,
ii) Supplies and outlets (at home and abroad),
iii) Operation,
iv) Legal and taxation position (a detailed study is required),
v) Staff.

4. Value of project

A. Financial aspect:

i) Outline budget (cost and selling prices), where applicable for various sizes of enterprise,
ii) Repayment of investments (extension fund) or provision for budgetary expenditure,
iii) Use of profits

on the basis of which the profitability rate is calculated

capital/output ratio — capital coefficient
the net increase in income resulting from the project
cost per job created compared with production per job created effects on the balance of payments;

B. Social considerations:

i) Raising the level of employment (permanent and seasonal),
ii) Increase in household income,
iii) Lower prices of goods;

C. General economic effects:

i) Investments resulting from the project and the impetus given to private business,
ii) Regional development,
iii) Coefficient of integration into the country's economy (ratio of domestic costs to total costs);

D. Comparison of project with others of the same type.

ANNEX VII

FACTORS TO BE CONSIDERED IN SOCIAL PROJECTS

ANNEX VII-A

HEALTH

1. How does the project fit into the national plan and into the public health programme, if any, or into the general framework of the Government's public health policy (importance of project at a regional or national level)? Efforts or investments already made in this field, their sources, and results.

2. Details of the area affected by the project

A. Population concerned:

i) Total population and distribution by sub-regions,
ii) Population density, population trends, and breakdown by age-groups,
iii) Urbanization and migration — communications between towns,
iv) Standard of living,
v) Probable expansion of the area;

B. Standard of public health:

i) Birth and death rate (overall and infantile),
ii) Epidemics,
iii) Endemic diseases (diseases concerned — degree of endemicity),
iv) Hospitals already existing in the area (number, type, number of beds, equipment, location, maximum distance to be travelled by patients and time required, number of doctors and hospital beds per head of population) — effects:

a) comparison of death rate with that in other countries,

b) number of persons receiving hospital treatment and number of days spent in hospital,

c) absenteeism and working days lost (effects on production and on the household budget);

C. Problem raised and possible solutions:

i) Problem to be solved (e.g. necessity for the hospital to be situated close at hand to enable medical treatment to be continued and to avoid removing the patient from his surroundings — but considerations of profitability sometimes make it necessary to centralize hospital services),
ii) Various possible solutions (e.g. single building or separate blocks, location...),
iii) Reasons for choosing the proposed solution.

3. Scope of the project

A. Operations involved:

i) Aims,
ii) Location,
iii) Nature,
iv) Duration (and, where applicable, the various stages).

B. Operation:

a) Necessary staff (technical and administrative):

i) numbers and qualifications required,
ii) recruitment,
iii) if technical assistance is given, is it intended to train local staff?

b) Equipment,

c) Assessment of recurrent costs.

4. Value of project

A. What number of the population will benefit? What section (e.g. poor or otherwise), and why?

B. Cost of project:

i) Reference to basic prices or standards,
ii) Comparison with other projects in the same country or in other countries.

C. Recurrent costs:

i) In cases where an old hospital is replaced by a new one, details should be given of current and future costs, in absolute terms;

ii) In cases where a new hospital is built, future costs must be assessed;
iii) In all cases, these costs should be compared in detail with the public health budget, and with the overall budget, on the basis of their present level and probable developments over the next few years;
iv) Assessment of the extent to which it will be possible to charge the extra costs to the budget.

D. Indirect benefits (e.g. shorter stay by the patient in hospital in cases where hospital is close at hand...).

N.B. : This list of factors to be considered applies mainly to hospital projects and must be adapted accordingly where maternity hospitals, Pasteur institutes, etc. are concerned.

ANNEX VII-B

EDUCATION

1. How does the project fit into the country's national plan and into the general educational plan, if any, or into the general framework of the Government's educational policy (importance of the project at national or regional level)? Efforts or investments already made in this field, their sources and results.

2. Details of the area affected by the project

A. Population concerned:
(same questions as in the section on "Health").

B. School attendance:

i) School attendance level (where applicable, breakdown by subregions) and numbers of girl pupils;
ii) Comparison with other areas;
iii) Number of schools and teachers (where applicable, with breakdown according to type of school), qualifications of teachers;
iv) Staff ratio;
v) Distance travelled by pupils to attend school and time required.

C. Problem raised and solutions:

i) Problem to be solved, e.g.: raising of primary school attendance level (necessary for general development or as a basis for training in agriculture), vocational training (detailed assessment of skilled staff required now and in the future, taking into account the possibility of teaching staff supplied under the technical assistance scheme being replaced and regional development;
ii) Possible solutions (location, with or without boarders, one or several classes, accommodation for teachers...);
iii) Reasons for choosing the proposed solution.

3. Scope of project
(see under section "Health").

4. Value of project

A. Influence of project (population affected).

B. Cost of project:

i) Reference to basic costs;
ii) Reference to basic standards (e.g. one teacher or one class for a given number of pupils);
iii) Comparison with other projects in the same country or in other countries.

C. Recurrent costs:

i) Assessment of future costs, compared with current costs of education (absolute figures) in the area concerned (full details are required);
ii) Same comparison at the national level;
iii) Comparison of costs with the budget as a whole (general budget and, where applicable, also provincial budgets) on the basis of their present level and probable development during the next few years;
iv) The extent to which it is possible to charge the extra costs entailed by the project to the budget concerned.

D. Indirect benefits:

(e.g. training in agriculture makes it possible to introduce new crops; as regards individuals, increase in income...).

ANNEX VII-C

TOWN PLANNING

1. Town planning policy and reasons for giving priority to the town concerned — main line of the town's overall development plan (in cases where such a plan does not exist, one should be obtained before the project can be considered). Investments already made in the field of town planning, their sources, and results. How does the project fit into the town's overall development plan ?

2. Present situation and prospects of growth

A. Present situation:

i) Whether capital, port or industrial centre ...;
ii) Layout (various districts);
iii) Population:
a) total population and urban density,
b) past trends and migration,
c) breakdown by age-groups,
d) standard of living (sanitary conditions) and employment (income);
iv) Living conditions: number and standard of residential accommodation — number of rooms or square metres per head of population — rents;
v) Urban infrastructure (main services, communications, social infrastructure...).

B. Future prospects:

i) Demographic trends (short- and long-term);
ii) Probable political, administrative, commercial or industrial developments;
iii) Pace of urbanization (over a fairly long period, e.g. 10 to 25 years).

C. Nature of the problem and possible solutions:

a) Nature of the problem (e.g. finding accommodation for excess population (see applications made to housing departments) — improvements to unhealthy districts...);

b) Possible solutions:

i) technical (choice of site, use of land...),
ii) financial (loans or subsidies);

c) Reasons for solution chosen:

i) (e.g. percentage of land set aside for access roads...),
ii) (e.g. the granting of a subsidy may make it possible to launch a revolving fund — a loan may be too heavy a burden on the budget...).

3. Scope of the project

A. Operations:
see under "Health" above, to which should be added: construction of housing (period of construction) and estimates for the transfer of present occupants of land.

B. Results:

i) Number of plots built on — number of dwellings built;
ii) Infrastructure (technical, social...);
iii) Administrative side of the project (where applicable, structure of the administrative body);
iv) Rental or sale of plots: terms (and, where applicable, also details of distribution into these two categories) — terms for the allocation of plots;
v) Additional financing required: purchase of land (cost per square metre — source of financing, terms...) — dwellings (source of financing, amount, terms for loans, commitment of body granting loan);
vi) Standard of dwellings and rents proposed.

4. Value of project

A. Population affected.

B. Financial operation:

i) Adaptation of rents of plots and dwellings to ability to pay (comparison with household budgets or sample surveys);
ii) Detailed balance sheet of the project for the public authorities;
a) repayment of loan (principal and interest) possibly due dates and annual amount to be repaid;
b) income from rents or sales: annual proceeds;
c) annual balance — how is any deficit covered (particularly in early stages) ?
d) costs of maintaining infrastructure (roads, main services, social infrastructure);

e) charges (water, sewerage...) and taxes, such as trade tax, annual proceeds;
f) Where applicable, use of revolving fund.

C. Cost of project:

i) Reference to basic costs;
ii) Comparison with other projects.

D. Indirect benefits:

(improvement of unfit dwellings means less expenditure on public health and less absenteeism — the reorganization of plots has both social and economic effects, e.g. reduction in time taken travelling to work...).

ANNEX VII-D

WATER SUPPLY

1. Does the water supply system form part of a national water policy? If so, the main lines of this policy should be indicated. If not, reasons should be given for according priority to the town concerned, with details of its situation, character and importance. Investments already made in this field, their sources and results. Does the project affect the entire town or only part of it? In the latter case, reasons should be given.

2. Present situation as regards water

A. Requirements:

i) Numbers of population served:
a) past trends;
b) breakdown by age-groups;
c) public health standards (for water-borne diseases state incidence, results of bacteriological analysis of the water, degree of endemicity, number of days spent in hospital owing to epidemics and working days lost as a result of these epidemics or endemic diseases, public health costs entailed, etc);
d) standard of living;

ii) Future short- and long-term developments in the city (political, administrative, commercial..., demographic), on the basis of which forecasts of future water consumption may be made.

B. Nature of problem and possible solutions:

i) The nature of the problem: present supply system and its defects (water charges, possible shortages, quality of the water...);
ii) Possible solutions:
a) technical,
b) financial (loans or subsidies);

iii) Reasons for choosing the proposed solution (in particular, for choosing loans or subsidies).

3. Scope of the project

A. Operations involved:
(see under "Health").

B. Operation:

i) Equipment,
ii) Staff,
iii) Additional financing (e.g. distribution system) and source (communal budget, etc.).

4. Value of project

A. Financial aspects:

1) Detailed study of financial operation:
a) factors to be considered in fixing water charges:

i) cost price;
ii) number of fountains;
iii) ability of the population to pay water charges (sample surveys or study of household budgets);
iv) level of consumption;

b) redemption of loans, where applicable;
c) operating and water consumption costs of fountains;
d) balance sheet;
e) if a deficit exists, how is it covered? (communal budget, etc.).

2) Administration: concessionary body.

3) Financing of additional installations: study of communal budget and of the extent to which additional costs can be met from the budget.

B. Costs:

i) Comparison with other towns;
ii) Reference to basic charges and standards.

C. Indirect benefits:
(e.g. reduced expenditure on public health, possibility of establishing water-consuming industries...).

ANNEX VII-E

SURVEYS

1. List of surveys already carried out in this field:

i) In the same country,
ii) In other countries (financed by the EDF or from other sources).

2. Will the survey be of use only to the applicant country, or will it be possible for other associated countries to make use of it?

3. Is there a possibility of a private company financing the survey (e.g. in the case of mineral prospecting, etc.)?

4. Does the aim of the survey coincide with those of the national development plan? Is provision made for such a survey in the plan itself? Is the survey a prerequisite for an improvement scheme?

5. In the case of surveys on land improvement projects, is it intended to devote part of the funds to investigating to what extent the population can assist in the improvement scheme?

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