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Guidelines for Financial Analysis of activities

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1.0 INTRODUCTION: GUIDELINES FOR FINANCIAL ANALYSIS OF ACTIVITIES

1.1 Purposes of Financial Analysis

Financial analysis is one of the six major types of analyses commonly used to assess activity feasibility. (**NOTE: While the guidance on this and other types of analyses typically refers to an "activity" as the intervention being analyzed, analysts may prefer to conduct such analyses at a higher level of intervention where the component parts of such an intervention lend themselves to a common, combined analysis.**) It is used both as a tool during activity development and as a test of a completed activity design. Its principal purposes are: to determine the adequacy of the funds to be provided for financing all activity resources; to ascertain whether monetary benefits to be derived from the activity are larger or smaller than the activity's costs; to judge whether results would be produced at the lowest practical cost and whether the unit cost of results is reasonable; and whether the proposed cash flow is likely to make the activity financially viable during the activity operating period.

1.2 Relationship to Other Types of Analysis

Financial analysis is interrelated with many other aspects of activity development and analysis as follows:

(a) Economic Analysis: The data used in economic analysis are similar to those used in financial analysis. In many activities, the results of the financial analysis will provide some of the basic information required to undertake the economic analysis. Financial analysis concerns itself with the activity as a self-contained entity, accepting the monetized values of results and resources as given. Economic analysis, however, considers the broader effects of the activity on the national economy in which results and resources are valued to reflect scarcity and market distortions.

(b) Social Analysis: Social soundness analysis is concerned with the social and cultural setting of an activity and its social effects. If the results of financial analysis (**e.g., the level of rates to be charged for water or power, or for resources such as credit for fertilizer**), are judged to be incompatible with social objectives or cultural traditions, the activity design may have to be modified.

(c) Administrative Analysis: Some aspects of the administrative analysis, e.g., those of the Executing Agency's financial administration

(**system of accounting, trained financial personnel, audit practices, etc.**), are relevant for the interpretation of data used in financial analysis.

(d) Environmental Analysis: Environmental considerations can affect the design and costs of an activity and thus the results of financial analysis.

(e) Technical Analysis: Technical factors (**choice of site, construction materials or size of buildings**) affect investment, and often operating costs (**e.g., frequency of maintenance, numbers of required operating personnel**) and, therefore, the results of financial analysis.

1.3 Timing of Financial Analysis

All types of analyses are interrelated. Financial analysis cannot be viewed as a self-contained effort, isolated from other types of activity analyses. Nor is financial analysis a one-time task carried out after the completion of activity design. Rather, financial analysis must continue throughout activity development and implementation. As an essential part of developing viable and effective activities, financial analysis must become an integral part of the activity design and must not be a mere formality undertaken after the completion of activity design.

1.4 Preparatory Steps to Undertaking Financial Analysis

There are several basic questions that need to be asked prior to undertaking the activity financial analysis:

(a) What type of financial analysis is appropriate?

(b) Is the relevant financial information available? If not, what should be the next steps in activity preparation and development?

(c) Does the Strategic Objective Team have the professional skills and sufficient time to carry out the assignment? Will external assistance be necessary to perform the financial analysis?

These questions should be asked and answered at the earliest stages of activity identification. To a considerable extent, the answers to one question will affect the answers to another. The more complex and specialized the financial analysis, the more likely there will be a requirement for external assistance. Similarly, the simpler the nature of the financial analysis, the more likely that the

relevant financial information will be available and that the analysis can be performed without external assistance.

If the basic financial information is not available, then clearly the necessary financial analysis cannot be performed and the activity should not proceed until adequate financial information is available. If available financial information is incomplete and of poor quality, but the Operating Unit/Strategic Objective Team needs to go forward with the activity development, the team should schedule the early establishment and satisfactory operation of the required financial analysis.

1.5 Purpose of this Reference

This reference is not intended as a course in financial analysis or a "**how-to-do-it**" manual describing in detail the data, methods and procedures used in financial analysis. Rather, it is intended to serve: (**a**) as guidance in determining the type of analysis required for an activity; i.e., the scope of the analytical effort; and (**b**) as an overview of analytical methods commonly used.

2.0 CHARACTERISTICS OF ACTIVITIES RELEVANT FOR FINANCIAL ANALYSIS

2.1 General

All activities are subject to some form offinancial analysis. The traditional activity classification,e.g., classification by public and private ownership, by economic sectors, or by revenue and non-revenue producing, isonly partially relevant for specifying the scope and type of financial analysis that should be adopted. The major criterion adopted in these guidelines as to the scope and methods of financial analysis is whether an activity is or is not "**commercially operated**" as defined below. Although this is not a perfect classification, it is useful for the present purposes.

There will also be differences between the financial analysis for new entities (**grass-root activities**) and expansion of existing operations. For a commercially operated new activity, the financial internal rate of return (**FIRR**) or net present value (**NPV**) criterion, as discussed in Section 5.2 below, provides the basis for the financial decision to accept or reject the activity. For an expansion activity, however, the financial analysis should be performed in two steps. First, the worth of the additional investment and related costs and benefits needs to be appraised. Second, the worth of the total enterprise or activities including the additional investment should be analyzed and assessed. It is possible to generate an exceedingly high FIRR in an incremental analysis and, yet, the total activity remains financially inviable.

2.2 Non-Commercially Operated Activities

(a) All activities which do not produce sufficient revenues to be financially self-sustaining rely on external support for all or part of their expenditures. They can be described as "**non-commercially operated**" or "**non-self-sustaining**" activities or as "**externally supported**" activities.

(b) The external support needed to cover either capital or operating costs or both is usually provided by the government from its budgeted resources and in some cases by international organizations, bilateral donors or private voluntary agencies.

(c) Whatever proportion external support represents of investment and operating expenditures, the need for external support indicates that the "**worth**" of an activity can not be measured by the user charges or other financial revenues it generates and collects. Rather, its "**worth**" lies in benefits it creates for the society as a whole; such public benefits, rather than financial worth, are the justification of the activity. Most externally supported activities are "**social infrastructure**" activities in the health, education and family planning sectors. Also included in this category are activities in the transportation and communications sectors which may produce substantial revenues, but which are not designed to be self-sustaining, such as government-owned, or privately owned and government-subsidized, railways or bus companies. The financial analysis appropriate to each of these non-commercially operated activities is substantially different from that used for commercially operated activities (**see Section 4.0 below**).

2.3 Commercially Operated Activities

Commercially operated activities are those which expect to generate sufficient revenues to cover all necessary capital and operating costs and to generate a profit, i.e.,

- production costs, i.e., the recurring expenditures for personnel, raw materials, fuel and power, maintenance of equipment, spare parts, etc.;

- amortization of intangible investment expenses, such as for engineering and other studies, and the depreciation of fixed assets, i.e., buildings and production equipment;

- debt service, i.e., the payment of interest on and the repayment of principal of loans used to finance the investment; and

- generation of a profit. The profit permits (**a**) compensating investors for the use of their money and the risks incurred in making their investment and (**b**) accumulating reserves for future use (**e.g., as a cushion in case of adverse business conditions or for expansion of the enterprise, if so desired**).

Occasionally, some government-owned activities or entities (**e.g., some power companies**) are expected to generate sufficient revenues to cover all the costs enumerated above but not to produce a profit, i.e., to "**break even**." Such activities are, for purposes of financial analysis, included in the category of commercially operated activities because many of the analytical methods used for those activities can also be applied to "**break-even**" activities. Since commercially operated activities rely for their operations entirely on the revenues they generate, they can also be described as "**self-sustaining**" activities.

3.0 SOME ANALYTICAL CONCEPTS

3.1 Budget

(a) Several distinctions have to be made in using the term "**budget**." One type of budget is what is normally called the "**activity budget**." It shows the amounts to be provided by USAID, the government and, in some cases, other donors for individual activities components or "**line items**," spread over the number of years during which AID proposes to contribute funds, e.g., "**the life of the Strategic Objective or Subordinate Activity**" Most Strategic Objectives or component activities designed to produce intermediate results, however, are expected to continue for a longer or an indefinite period beyond that of the "**Strategic Objective time frame,**" using funds provided from either revenues generated by the activities, government funds or both. A budget projection for one or more years of the period following the completion of the activity as defined by USAID is necessary to systematize an analysis of the financial situation as it will then exist, i.e., the costs that will have to be financed and the sources of the funds available for financing them.

(b) Another distinction is the difference between an "**investment budget**" and an "**operating budget**." The investment budget covers the cost of facilities which must be in place before the activities can begin, such as, construction of buildings, purchase and installation of equipment, purchase of supplies needed for initial operations and any of the services needed in connection with this category of expenditures. The value of these inputs represents the capital investment necessary to make operation of the activity possible. The operating budget covers those

costs which will be incurred in connection with the activities to be carried out, e.g., production of goods, energy and power generation, teaching, operation of clinics, etc. A detailed annual operating budget is needed to provide sufficient funds for the continuing costs of the operation, i.e., the "**recurrent costs**." Included in the operating budget are, inter alia, salaries, supplies, maintenance of building and equipment, fuel and the periodic replacement of worn-out equipment, notably vehicles.

(c) The budgeting process thus includes the preparation of (**1**) a capital (**investment**) budget if applicable; (**2**) an operating budget for the number of years necessary to show when annual expenditures in constant terms will reach a stable level; and (**3**) a cash flow budget showing different sources of funds, such as, its own revenues, USAID resources, the government budget and others to cover the capital and operating costs. The latter budget is, in effect, a tabular presentation of the financial plan.

3.2 Financial Costs and Benefits

(a) "**Financial costs**" are all expenditures that have been or will be incurred and paid by the implementing agency in the course of executing an activity. They include investment costs and the operating costs, as defined above. However, social costs, such as environmental degradation which may be attributable to the activity, are not financial costs to the activity unless the activity itself expends financial resources to cover these costs.

(b) "**Benefits**" of an activity may take the form of revenues received (**sales, fees, etc.**) and/or intangibles (**better education or health; improved access to markets, etc.**) Whether intangible benefits can be expressed in monetary terms or not, they are not considered as financial benefits of the activity. Therefore, the "**worth**" of any activity with large intangible benefits can not be based on the analysis of financial costs and benefits, because without accounting for intangible benefits the financial worth is likely to be negative.

(c) Contributions made by government, whether one time or recurrent payments under budget allocations, or grants by foreign institutions are considered as revenues of the activity even though they are not generated by the activity.

(d) The essence of financial analysis is the comparison of financial costs and monetary benefits. That comparison is used as the basis for a judgement on the "**financial worth**" of the activities, i.e., whether the benefits justify the costs. If the monetary benefits, i.e., activity generated

revenues have a lower value than the financial costs, an activity is not financially viable, but may still be considered justified if it produces social or economic benefits that are judged sufficient to compensate for the costs. Although that judgement is beyond the scope of financial analysis, some analytical techniques based on least cost calculations discussed in Section 4 below are applicable.

(e) Since all costs and benefits generally accrue over time in different magnitudes, appropriate discounting is needed to reduce the future stream of costs and benefits to a common denominator, the present value equivalent. The calculation is simply the inverse of compounding interest. Rather than calculating how much an investment will be worth in a certain number of years if the interest is added each year to the principal, discounting starts with the future value and arrives at the present value by applying the discount factor successively.

3.3 Data Used in Financial Analysis

The major sources of data used in financial analysis are estimates of costs and revenues, pro forma financial statements and the financial plan.

3.3.1 Revenue Estimates

In analyzing future operations of an entity, revenue estimates are necessary in addition to estimates of the cost of operations. Two factors - the number of units of outputs sold and the price likely to be obtained per unit - must be assessed for determining the volume of revenues. In most cases, both factors are examined in a market study prepared before the detailed activity design is initiated. With regard to prices, "**high**" "**low**" and "**probable**" levels are usually determined as one of the variables to be considered in sensitivity tests. (**See paragraph 5.2.7 on that subject.**) In projecting revenues, not only the probable sales price and ultimate plant capacity must be considered, but also the build-up of production from plant start-up to full production. New operations usually require the correction of flaws in equipment or operating practices and the training on the job of operating personnel, a process often described as the "**learning curve**." Reasonable estimates must, therefore, be made of the time needed before both personnel and equipment function at the expected ultimate level of efficiency. Depending on the complexity of the operation, several years may be required before output at full capacity can be achieved. Such gradual increase in saleable outputs must be reflected in revenue estimates.

The preparation of revenue estimates will in many cases be more difficult for non-commercially operated activities because revenues will often not be based on market prices but on administrative decisions by the implementing agency.

Fees to be charged for medical services, for example, will rarely be adequate to cover costs. The level of such fees will rather depend on a judgement of an amount which the users can afford to pay, but which will not deter potential users to take advantage of the services. In such cases, the preliminary results of an analysis based on a tentative scale of fees will usually have to be reviewed during activity development and one or more analyses performed based on different assumptions.

3.3.2 Cost Estimates

(a) In the analysis of any activity, detailed and reliable cost estimates are the key source of financial data. For commercially operated activities, the data are used in the preparation of pro forma financial statements (**Income Statement, Balance Sheet, and Sources and Uses of Funds Statement**); in non-commercially operated activities, they provide important information for alternative designs and cash flow projections. Only a few aspects of cost estimating are discussed here to highlight its importance for financial analysis.

(b) Frequently, the term "**cost estimates**" is related only to capital expenditures, i.e., to the cost of plant and equipment needed to implement an activity. However, operating expenses such as labor, selling and administrative expenses should be included. In addition, the cost of expendable supplies, such as raw materials, spare parts, energy and power, and maintenance supplies must be estimated to provide a basis for projecting the recurrent cost, i.e., the cost of operations.

(c) Physical and inflation contingencies should be estimated separately. This is necessary to assess the effect of cost overruns on the viability of an activity due to underestimating quantities of work units, labor or material inputs, to examining the effect of different inflation rates on construction costs, or to eliminating the effect of inflation for some analytical purposes (**e.g., when "constant" prices are used in calculating the financial rate of return**). Any cost estimate should, therefore, include separate amounts for physical contingencies and price escalation.

(d) In the analysis of commercially operated activities, it is often assumed that inflation will affect the sales prices, i.e., revenues, to the same degree that it affects input prices (**e.g., labor and materials**), i.e., operating costs. If, however, revenues and costs are likely to change at different rates, "**current**" price data reflecting different price escalation rates are used on each major component of revenues and costs.

(e) To complete the cost estimates, two expenditure items, working capital and interest payment during the construction period, must be considered.

(1) Sufficient funds must be made available to permit the entity to meet its payroll and other administrative expenses during the construction period and to cover any gap in the timing of expenditures and receipts of revenues during the operating period, i.e., the time between the payment for raw materials and services and the receipts of the sales of goods and services. Such funds are known as "**working capital**."

(2) Even though the terms of long-term loans usually include a "**grace period**", i.e., a certain number of years during which no payments of principal have to be made, the borrowing entity normally has to pay interest (**and where applicable commitment fees**) during the construction period, when a newly created entity does not yet generate revenues. One way to offset such current payments is to "**capitalize**" interest during a certain limited period, i.e., to add the amounts due as interest to the principal of the loan.

3.3.3 Financial Statements

(a) Financial statements reflect either past performance of an enterprise or projections of future performance. In the latter case they are characterized as "**pro forma**" statements. If an activity is carried out by an existing enterprise, its performance during the immediate past, usually the last three years, is a good source of information on costs, capital structure, management efficiency and other data used in the analysis. Statements obtained should have been audited and be accompanied by the external auditors' opinion. For corporations, the statements, together with notes and the auditors' comments, are usually provided in Annual Reports to stockholders. Pro forma statements must in most cases be prepared by a financial analyst who uses cost and revenue estimates and the proposed capitalization as well as historical financial statements, if any, as the basis of projections.

If there is any reason to question the reliability of historical financial statements, e.g., because the auditors' certification raises doubts, competent independent accountants should be asked to review the entity's books.

(b) As commonly referred to, "**Financial Statements**" include three sets of figures reflecting, respectively, the profitability, the liquidity and the "**financial position** " of the enterprise, as discussed below.

(1) The Income Statement (**also referred to as "Statement of Earnings" or "Profit and Loss Statement"**) shows a listing by category of revenues received and expenditures made during the reporting period. (**In Annual Reports, the corresponding figures for one or more years preceding the reporting period are usually shown for comparison purposes.**) In addition to expenditures, non-cash charges to income, such as depreciation, amortization, deferred taxes, are also shown. The excess (**or shortfall**) of revenues over expenditures including non-cash charges is the profit (**or loss**). The Income Statement thus indicates the profitability of the entity's operations.

(2) The Balance Sheet (**or "Statement of Financial Position"**) shows the entity's assets and liabilities. Assets are sometimes divided into "**current**," "**fixed**" and "**other**" assets. Current assets are those which are cash or are expected to be converted to cash within one year. Fixed assets include land, buildings and equipment with a service life exceeding one year; the sum of "annual charges" for fixed assets that are used up over a longer period of time, are shown in the balance sheet as a separate entry headed "**accumulated depreciation**" and deducted from the original value of the assets. (**Note: land is not depreciated.**) The cost of other long-term assets, such as research and development costs or the cost of outside engineering services, that may be classified as "**other**" assets are usually "**amortized**" rather than "**depreciated**." The total of annual amortization charges is shown separately or reflected in the balance sheet. Liabilities, similarly, are divided into current and long-term - current liabilities being those which are expected to be disbursed within one year. Added to liabilities is the stockholders equity, which includes the value of the stock and retained earnings, i.e., profits not distributed to stockholders in the form of dividends. The total of liabilities and equity equals the total assets, so that the two sides of the statement are always "**in balance**"; hence the term "**balance sheet**."

(3) The third type of statement is the "**Statement of Sources and Uses of Funds**" or "**Changes in Condition**". Data from both the Income Statement and the Balance Sheet are used to construct the Sources and Uses of Funds

Statement. The Statement shows where the funds come from and for what purposes they were used. Non-cash items are disregarded in the Statement. The major categories of Sources of Funds are the entity's operations (**internally generated funds**) and external financing, such as loans. "**Uses of funds**" do not include funds used for operations (**because they have already been accounted for by using net income as a source of funds**). Uses of funds may include increases in Working Capital (**current assets less current liabilities**), investments in plant and equipment, outside investments, dividends paid to stockholders, debt services, etc.

3.3.4 Financial Plan

A financial plan is needed not only for negotiations with the Borrower/Grantee (B/G) and possibly other donors on the amount and timing of contributions to the activity by all parties involved, but also to analyze the adequacy of proposed arrangements for the timely execution of the activity and for the projection of the cash flow during the implementation period. The financial plan has implications for the cash flow during the construction of the activity and for the profitability and the cash flow, in particular the adequacy of cash flow for debt service, during the operating period. These implications must be examined throughout the activity development phase. If this is not done, implementation may be delayed or debt service and other problems may arise in the operating period.

4.0 ANALYSIS OF NON-COMMERCIALLY OPERATED ACTIVITIES

4.1 Scope of Analysis

Many USAID activities are aimed at and designed for improving socio-economic infrastructure of the country. Activities in education, health, family planning and even in agriculture (**e.g., research and extension**) often do not generate any revenues or, if any, insufficient revenues to cover the costs of the activities. Financial justification of such activities in the traditional financial internal rate of return (**FIRR**) terms is not possible and is unnecessary. The role of the financial analyst, however, is to determine that the selected activity will achieve the stated results at the least cost possible and to determine whether sufficient resources will be made available to cover its costs in a timely manner.

4.2 Cost Effectiveness Analysis

(a) Cost-effectiveness analysis (**CEA**) is an approach to activity appraisal in which activity benefits or costs are identified, but only the costs are monetized. Unlike the procedures used in the traditional cost-benefit analysis, no attempt is made to place a monetary estimate on activity benefits, because activity benefits are difficult or impossible to quantify (**e.g., improved aesthetic conditions from an activity for the preservation of national parks or changes in lifetime earnings from an educational development activity**) or difficult to express in monetary terms (**e.g., health effects from a primary health care activity or a potable water supply activity, improved air quality from a pollution control activity, or changes in quality of life from a rural electrification activity**).

(b) CEA is particularly useful where benefits are hard to quantify or value is difficult to articulate due to a weak understanding of cause and effect relationships. Many USAID activities that deal with human resource development in health, education, or family planning areas may be evaluated by means of CEA.

CEA can take three basic approaches:

- Minimizing costs for a given level of effectiveness (**a form of least-cost analysis**);

- maximizing effectiveness for a given level of cost; and

- finding the best trade-off between costs and effectiveness.

(c) The first approach requires that the design team first establish the result the activity is to produce and then examine different means of achieving that result. It may be a social result (**increased average number of years of schooling for children**), a health result (reduced infant mortality rate), or an environmental result (**reduction of water or air pollution by a certain amount**).

(d) The second approach assumes that a predetermined level of funding is available in a certain area (**e.g., child health care**); the analyst then examines the consequences of alternative ways of using the money. In the case of child health care these could include supplementary feeding, oral rehydration programs, training of nurses or expanded maternal and child health (**MCH**) facilities. The analysis then estimates the effectiveness of each alternative in a child health care result, which

would be measured by some target such as an infant mortality rate or weight by height.

(e) The third approach combines elements of the first two. The analyst considers a number of results to be produced in achieving a Strategic Objective, examines the differences in the cost of achieving them, and then considers which results seems most reasonable considering the costs involved. The simplest and most common technique used is to compute the average cost per unit of outputs for various design options, e.g., costs per student or per course taught in an education activity, or costs per consultation or inoculation in a health activity. An unacceptably high unit cost may indicate the need to reconsider the activity being considered to produce the result or, if that is not possible, to abandon it. It is important in this context to select outputs directly related to the results to be produced in support of the Strategic Objective. Thus, in an education activity aimed at improving instruction methods, the number of students passing an exam is likely to be a better measure than the number of courses taken or the number of hours of instruction given. (**NOTE: In this illustration it is assumed that financing would be secured from some source for all results deemed essential in achieving a given strategic objective.**)

(f) Calculation of the unit cost of an output is simple. The total annual cost is the sum of annualized investment costs (**i.e., the investment cost divided by the number of years the assets are expected to be in service**)and the annual operating cost. This total is then divided by the number of units of output expected to be produced in a year. The average cost per unit methodology assumes that the average cost of various alternatives under comparison is distributed equally over time. However, if it is distributed unequally over time, the stream of the average cost per unit must be discounted to present value using the actual cost-of-capital rate.

4.3 Recurrent Cost Analysis

(a) Recurrent costs are defined as the operating expenditures needed to carry out the activities. They include wage and salary payments, utility costs, raw material purchases, maintenance and repair expenses, replacement costs of worn-out equipment, debt service payments, etc. The financial analyst must examine carefully whether or not sufficient funds are made available at the time when they are needed to cover necessary recurrent costs, not only for the life of the activity during which USAID provides assistance, but also for later years, say five years, after USAID's contributions are terminated, provided that the activities will be

financed by some other agent, such as the government (**a good discussion on recurrent costs can be found in AID Policy Paper on Recurrent Costs, May 1982**).

(b) The financial analyst should prepare:

- the annual budget containing estimates of all operating expenditures and sources of funds to cover these costs, and

- an analysis examining the past recurrent cost performance of the government (**or any other agency that is responsible for financing the future operation of the activity**) in meeting its financial obligations and examining the projection of recurrent costs likely to occur in later years of the intervention. The recurrent cost performance analysis should concentrate on the government budget for the sector in which the activity is being designed and evaluate the government's ability to allocate additional financial resources to the sector and the activity when USAID terminates its financial contributions.

(c) If the annual budget and recurrent cost analyses indicate the existence of potential problems in meeting operating expenses, the financial analyst should prepare some or all the following analyses to justify undertaking the activity:

- modify the activity design by establishing or increasing user fees and other revenue generating measures to reduce needed external support;

- analyze the potential activity impact on government revenues and expenditures. For example, development of a new strain of crop as a result of the activity may increase crop yields which in turn may increase government revenues through income, transaction, and export taxes. The increased net government revenue may justify the projected level of government support;

- analyze the potential or the likelihood of other donors to provide resources to the activity or indirectly to the government for the purpose of carrying out the activity;

- provide strong justification for USAID to continue to support the activity with its local currency, if available, even after the completion of the activity;

- analyze the causes of persistent recurrent cost problems and incorporate appropriate policy measures to address the problem; and

- seriously consider abandoning the activity.

(d) Note that the annual budget must reflect likely increases in the cost of salaries and services as a result of inflation. If this is not done, the operating budget both for the initial activity period and for subsequent years will likely prove unrealistic. In other words, budgets should be prepared in "current prices."

5.0 ANALYSIS OF COMMERCIALLY OPERATED ACTIVITIES

5.1 Objectives

The objectives of the financial analysis are to:

(a) Estimate the "**worth**" of the activity in financial terms (**financial internal rate of return**);

(b) Assure that available financial resources are adequate to cover all investment and operating costs listed in paragraph 3.1, above;

(c) Assure that funds will be available in the amount and at the time required (**cash flow analysis**);

(d) Assure there will be adequate funds to service debt incurred for financing the activity (**debt service coverage**);

(e) Assure that debt incurred and equity provided by public or private investors will be sufficient to overcome temporary adverse developments, e.g., increased costs or reduced revenues due to unfavorable market conditions (**capital structure**);

(f) Assure that profits will be sufficient to allow equity investors an adequate financial return on their investment (**return on equity**); and

(g) Estimate the extent to which actual costs and resources can differ from the assumptions made without jeopardizing the viability of the activity (**sensitivity tests**).

5.2 Methods of Analysis

5.2.1 General. The analysis of the data contained in the Financial Statement as defined above, cost and revenue estimates, and the financial plan includes tests of profitability, financial condition and adequacy of the cash flow. Many of these tests involve the calculation of certain ratios which must beinterpreted on the basis of experience and informed judgement.

5.2.2 Financial Internal Rate of Return (**FIRR**) and Net Present Value (**NPV**)

(a) The most frequently used method of establishing a measure for an activity's financial value is the calculation of the "**Financial Internal Rate of Return**" (**FIRR**). Calculating an FIRR involves ascertaining the discount rate on which the sum of all annual net cash flows, positive and negative, is zero. The technique usually involves several repetitive calculations for various discount rates until the FIRR is found at which the sum of the discounted cash flows is zero or close to zero. If the calculated FIRR is greater than a predetermined acceptable rate of return, the activity would be financially worthwhile.

Difficulties arise, however, when the net cash alternates in sign (**negative to positive to negative, etc.**) more than once. This could result in more than one FIRR for the activity. Also, FIRR will not exist if the net cash flow is either uniformly positive or negative.

(b) Alternatively, the net present value (**NPV**) of the cost and benefit streams can be calculated using a discount rate determined in advance to represent the actual cost of capital. If the value of the discounted annual net cash flow is greater than zero, the activity is financially acceptable. For commercially operated activities, the FIRR is the one favored by USAID primarily because it is more readily understood by the entrepreneurial community.

5.2.3 Profitability

(a) Net profit is the excess of revenues over all costs, including production costs, several types of administrative (**overhead**) costs (**e.g., sales and the catch-all category of costs called "General and Administrative" (G&A) expenses**), import duties, taxes, the annualized cost of investments (**depreciation and amortization**) and interest on debt. Repayment of loan principal is not considered as a cost and not shown in the Income Statement. Since loans are used to finance capital (**investment**) costs, and since depreciation and amortization charges reflect the annualized cost of investment, considering principal repayment as a cost would be double-counting. Principal payments are made out of

net profits (**after taxes**) and reflected in the balance sheet as a reduction of debt and in the cash flow statements as a use of funds.

(b) The most useful measures of an activity's profitability are the FIRR and NPV, described in paragraph 5.2.2, because (**1**) they take into account the time when expenses are paid and revenues received, and (**2**) they encompass an extended period of time, reflecting the efficiency of operations beyond the annual profit and loss statements.

(c) In addition, several ratios can be calculated as indicators of the overall efficiency with which funds are used. The most significant measures of efficiency are the ratios of:

- annual net profit to sales;

- annual net profit to total assets;

- annual net profit to equity; and

- annual net profit to capitalization.

To determine the significance of the ratios it is necessary to compare them for a reasonable period of time with those established for similar enterprises, using the analyst's experience and reference data. In such comparisons, local conditions must, however, be taken into account, such as exceptionally high labor costs or unusually high investment expenses due to, e.g., the necessity to construct housing for employees.

5.2.4 Liquidity

(a) The objective of liquidity analyses is to ascertain whether all the expenses expected to be incurred in one year are covered by receipts with a sufficient margin to prevent unexpected cash flow problems.

(b) Several ratios are used to put the projected liquidity of an activity in perspective. The current ratio, computed by dividing current assets by current liabilities (**as shown on the balance sheet**), is a measure of short-term liquidity since "**current**" means one year or less. Current assets consists principally of cash, marketable securities, accounts receivable and inventories. Current liabilities include such expenditures as taxes, repayment of short-term loans, accounts payable and installments of principal of long-term loans payable within one year. If the ratio is less

than 1.0, assets are insufficient to cover liabilities. Only a ratio higher than 1.0 is, therefore, acceptable.

(c) A variation of the current ratio is the "**quick**" (**or "acid test"**) ratio. In computing it, inventories (both of manufactured goods and of raw materials and other supplies) are deducted from current assets and the result divided by current liabilities. This is a more stringent test than the current ratio; it is based on the consideration that it may not be possible to liquidate inventories by sale quickly enough or to obtain prices equal to or near book value. Generally, the quick ratio is expected to be at least 1.0 but a ratio slightly less than 1.0 is sometimes acceptable, e.g., if there is normally a ready market for all or most of the inventories.

(d) For all activities financed in part with loans for which the activity is primarily responsible, the "**debt service coverage**" is usually computed to ensure that the terms of loans are compatible with the expected cash flow. The debt service coverage ratio is computed by dividing the amount of "**sources of funds**" or "**funds available**" as shown in the cash flow statement, by the debt service requirement in that year. (**"Debt Service" includes both interest and principal payments calculated on the basis of specific loan terms.**) Thus, the computation of the debt service ratio does not take into account possible cumulative cash balances; rather, it reflects the relationship between cash inflows in one year and the corresponding debt service requirements. It is a matter of judgement whether an inadequate debt service coverage in one year can be accepted if cumulative balances, in addition to cash generation in that year, are available. The adequacy of the ratio must, in any event, be judged with consideration of the size of cash outflows other than debt service. The higher such other outflows are relative to debt service, the higher an acceptable debt service coverage would have to be. A ratio of 1.5 is frequently used as a measure of adequate coverage.

5.2.5 Leverage

(a) "**Leverage**" is the effect of debt on the profitability of an equity investment. The use of debt financing makes the equity provided by the activity's owners more effective. On the other hand, too much debt, or debt incurred at inappropriate terms, can endanger the financial viability of an activity because debt service could require too high a proportion of the funds remaining after the payment of production expenses.

(b) Of the several ratios devised to measure the effect of debt on the financial stability of an activity, the debt/equity ratio is the one commonly used by development financing institutions. It measures the relationship

between debt and equity used in financing the investment. The ratio can be expressed in two ways: either by computing the percentage which debt and equity, respectively, constitute of the total investment; or by dividing the amount of debt by the amount of equity. Thus, if the amounts of debt and equity are equal, the relationship can be stated either at 50:50 or as 1.0. Dividing debts by equity is the preferred method. In computing the ratio, normally only long-term debt is considered (**after deducting the current year debt payment**); short-term loans (**up to a term of one year**) are commonly not considered in computing the ratio for development activities because they do not affect the long-term stability of the activity. Any cash problem which they may cause in one year would be discovered by analyzing the cash flow.

(c) In some situations, it is advisable to consider short-term as well as long-term debt in computing the debt/equity ratio. This would be the case if a substantial part of the fixed assets or working capital is to be financed with overdrafts or other forms of short-term debt, as is customary in developing countries. Any tightening of such credit as the result of changes in government monetary policies could make it difficult for an enterprise to roll over short-term loans and thus seriously endanger its liquidity situation.

(d) The debt service coverage ratio, discussed above as a measure of liquidity, can also be used to assess the merits of the proposed leverage. If a satisfactory ratio is achieved, the leverage is not too high; if the ratio is lower than considered safe for the stability of the enterprise, the amount of debt to be incurred is too high or the loan terms are too onerous.

5.2.6 Other Ratios

A number of these ratios have been developed to analyze the financial performance of an activity; they are sometimes collectively referred to as "**activity ratios**." These ratios are generally less significant for the analysis of development activities because they cannot be interpreted without referring to industry standards valid for the country in which the activity is located. Among such ratios are those measuring "**inventory turnover**" (**annual sales divided by average inventory**). For activities expected to sell on credit, the "**average collection period**" may, however, be significant if historical data exist that permit a comparison of the actual experience with the terms under which sales are made. The period is computed by determining average daily sales (**annual sales divided by 365**) and then dividing accounts receivables by daily sales. The result represents the number of days needed on the average to realize cash after a sale is made.

5.2.7 Sensitivity Tests

(a) General. Even though cost estimates include allowances for contingencies, and even though revenue estimates should be based on detailed market studies, sufficient uncertainties exist in most, if not all, projections or estimates to warrant an examination of the effects of changes in some of the estimates and assumptions on the profitability and financial stability of the activity. Such examinations are termed "**sensitivity tests**." The factors chosen for examination are those which would have a major impact on the financial projections, such as construction and operating costs, sales prices, total production, and the length of the construction period. Additional factors that might be considered include those which are of sufficient importance to warrant special scrutiny, such as the rate of build-up of production to design capacity or fluctuations in transportation costs for bulk commodities. If any of these tests show that the potential impact of changes in estimates or assumptions is such that the activity may not be financially viable if such changes actually occurred, it would be necessary to estimate the probability that a given change will occur. Such assessment of probabilities is called "**risk analysis**"; the methodology used is not described in here.

(b) Methodology. To test the sensitivity of an activity to changes in a given factor, different values of the factor are substituted in the original analysis. For example, the unit sales price for the activity's product used in calculating the amount of revenues shown in the pro forma Income Statement is increased and decreased by 5%, 10% and 20%. The corresponding revenue figures are then inserted in the Income Statement, and the IRR computed.

6.0 INTERMEDIATE CREDIT INSTITUTIONS

6.1 Focus of Analysis

The financial analysis of intermediate credit institutions (**ICI's**), general and specialized development banks as well as commercial banks which have similar lending programs, is concerned with the analysis of the institution's financial operations rather than with the activities which they finance.

6.2 The Policy Statement

(a) It is customary that the Board of Directors of a development bank adopts a policy statement before or shortly after the bank begins making

loans. Policy statements usually describe the bank's policies regarding the maturity of loans (**short-, medium- or long-term or a combination**), the sectors to which loans are to be made, the interest rates to be charged the bank's customers, loan approval procedures, delegations of authority from the Board to the bank's officers, collection procedures, reserves for bad debts to be established, audit procedures and similar policies making up the framework within which the bank expects to operate. The examination of the Policy Statement is thus a good way to start the assessment of a bank's operations, the adequacy of its organization and of its administrative practices.

(b) If the ICI policy permits insider loans, i.e., loans to its owners, directors and officers, USAID may require that the ICI demonstrate the these loans are as efficient a use of resources as other loans under consideration. If, however, loans to insiders hinder credit from reaching USAID target groups, USAID may prohibit such loans as a condition of the Agency's participation in the credit program.

6.3 Interest Rate Spread

The difference between the interest rate paid on borrowings and that charged to its customers (**the "spread'**) is the most significant source of the revenues earned by an ICI. The spread must be large enough to cover the bank's administrative costs, permit the accumulation of reserves for bad (**i.e., uncollectible**) debts and other purposes and, if the bank is privately owned, to provide a return on the investment made by its stockholders. There are no absolute rules governing the size of the spread that may be necessary to prevent operating losses and the consequent depletion of equity. The spread may have to be larger if the bank experiences a large number of defaults by its borrowers. In any event, the adequacy of the spread should be judged primarily in the context of the bank's past performance as reflected in its Income Statements.

6.4 Loss Experience

The "**loss experience**" is the bank's history of uncollectible loans on which borrowers have defaulted with respect to payment of interest and principal in accordance with the terms of the underlying loan agreements, and which have to be written off (**i.e., cancelled without payment**) because there is little or no prospect that payment will be resumed. Sometimes banks are reluctant to write off loans to avoid the consequences for their financial statements. Under their own policies, and often as required under agreements with its lenders, banks maintain records showing the "**aging**" of its borrowers' overdue payments.

Overdue payments are usually classified as overdue for intervals of 30 days (**30, 60 days, etc.**) and such statements indicate the default rate (**the ratio of default against outstanding loans**) for any such periods. If a relatively large number of loans are overdue for longer periods, it shows the need for a study of the causes of the delinquencies, of which there may be several. Among them are lax loan approval practices including lack or inadequacy of credit checks or activities analysis, inadequate collection procedures including failure to take legal action and the deterioration of economic conditions generally or in individual sectors of the economy. Such studies form the basis of whatever action the bank may be able to take to counteract the cause or causes of defaults.

6.5 Cash Flow

Cash flow statements for previous years and cash flow projections for future years show the inflow of funds from collections (**interest payments and repayments of principal**) and from borrowings by the ICI and the outflow of funds for loan disbursements and administrative expenses. Projected cash flow statements are the principal basis for assessing the need for additional borrowings (**or sometimes increases in equity funds.**) They are based on historical data, reflecting disbursement and collection rates, modified as indicated by changes in the demand for loans due to changes in the general economy or in particular sectors, by changes in the lending policies or other developments.

6.6 Debt/Equity Ratio

ICIs have a higher debt/equity ratio, i.e., a higher proportion of debt, then industrial or commercial enterprises. Ratios of 20:1 or higher are not unusual. These are typical ratios for commercial banks that depend on deposits as sources of funds. Nevertheless, a solid equity basis is needed as a cushion against adverse developments.

6.7 Other Ratios

There are a considerable number of ratios used by financial analysts in the assessment of ICI operations. Among these are the ratios of assets to deposits (**if any**), loss reserve to loans, net income to total assets, etc. Such ratios are meaningful only by comparison with those achieved by comparable institutions; their interpretation is, therefore, best left to analysts familiar with ICI operations.

6.8 Foreign Exchange Risk

(a) Since the rates at which different currencies are exchanged vary, sometimes substantially, there is the risk that different rates may apply at the time loans in foreign exchange are disbursed and the time they are repaid. This is called the "**foreign exchange risk**."

(b) While that situation exist in all international lending, it raises questions of equity and policy in lending to ICIs. Either the government (**if the loan is made to a government and re-lent to an ICI**), the ICI or its sub-borrowers can be assigned the foreign exchange risk and thus be responsible for the maintenance of value of the foreign exchange disbursed.

In the past, the arrangements made in loan and re-loan agreements have differed. Sometimes it has been argued that governments should bear the foreign exchange risk because they, at least to some extent, can control or affect exchange rates, as e.g., by devaluing or revaluing their own currency. In other cases, the argument was accepted that the sub-borrowers, as the actual beneficiaries of loans, should bear the foreign exchange risk. Finally, in certain situations it can be argued that wide currency fluctuations might increase the sub-borrowers' debt service obligations to a point where they would constitute a serious threat to the sub-borrowers' economic survival or where the risk might act as a deterrent to borrowing. In such cases assignment of the foreign exchange risk to the ICI might be considered. If that were to be done, prudence would dictate that the ICI establish a reserve for currency fluctuations to which a portion of interest income is assigned. Interest rates charged by the ICI would have to be increased to permit the establishment of such a reserve. The additional interest would be justified as a payment to the ICI in return for its assuming the foreign exchange risk. In practice, the situation in each ICI loan must be considered on its merits, taking into account foreseeable changes in exchange rates, the likelihood of a devaluation of the local currency, the financial stability of the customers expected to borrow from the ICI, the financial strength of the ICI and the experience of its management. The activity design team should scrutinize carefully alternative means of sharing the foreign exchange risk.

7.0 FINANCIAL COVENANTS

7.1 Purpose and Effectiveness

(a) Financial covenants are used to establish standards for selected aspects of a borrower's financial operations. Legally, the breach of a covenant constitutes a default which entitles the lender to resort to any of the "**B**", i.e., sanctions, which are provided in the loan agreement. Such breaches of covenants are distinguished from other, more serious cases of default (**B**) as "**technical**" defaults. In most cases of technical defaults,

however, the remedies available to USAID (**suspension of disbursements or cancellation of payments, as detailed in Strategic Objective Loan and Grant Standard Provisions Annexes**) are too drastic to be invoked; if they were, the cure might well be worse than the disease, considering the development objectives which the USAID loan or grant was to serve. inancial covenants, thus are intended primarily as a means for informing certain standards of financial management and establishing objectives which, when not attained, become the basis of a formal or informal review of the conditions causing the breach of a covenant and of actions that could be taken to improve those conditions. Financial covenants should, therefore, be seen as devices to trigger warning signals, not as devices which, of themselves, ensure adherence to specified standards.

(b) Financial covenants are based on projections of financial operations during and after implementation of an activity. They reflect, therefore, both costs and benefits expected to result from the execution of an activity. It is imperative that financial covenants are thoroughly negotiated with the borrower and implementing agency to make sure that their implications are fully understood.

7.2 Revenue Covenants

(a) Revenue covenants in one or several of the forms described below can be used to establish a standard for the generation of revenues for any activity other than those which depend on subsidies for all of their income. They can thus be used for commercially operated activities and partially for non-commercially operated projects.

(b) Rate of Return Covenant. Under a rate of return covenant, an entity is required to do all that is necessary to earn an agreed return on the capital investment in addition to covering its operating expenses, including production expenses (**i.e., all labor, supervision and materials needed to produce the output, which may be a commodity or a service**), maintenance expenses and provision for depreciation, but excluding interest on debt. This, or the two covenants described in (**c**) and (**d**), below, are frequently used as a standard for the financial performance of utilities.

(c) Cash Generation. If revenue generation as a percentage of total income, including subsidies, can be established, a covenant can be agreed upon under which the entity undertakes to meet from revenues a certain proportion of specified expenses. The expenses can be defined as "**production expenses**" (**see above**) or, in addition to production

expenses, any or all the following categories of expenses: maintenance, depreciation, debt service, taxes if applicable, and necessary annual capital expenditures. This covenant is thus so flexible that it can be adapted to any activity that generates revenues.

(d) Operating Ratio. The "**operating ratio**" is the total of operating expenses stated as a percentage of revenues. Any percentage above 100 means that expenses exceed revenues; the lower the ratio, the better the performance of the activity. This covenant is useful as an alternative to the cash generation covenant. It can be adapted to different activities by including in the covenant a narrower definition of operating expenses than that given in (**b**), above.

7.3 Capital Structure Covenants

(a) Covenants of this type are used to limit the amount of debt which a commercially operated activity is allowed to incur. They are generally not applicable to non-commercially operated activities. The limits can be established directly, as described in (**b**) and (**c**), below, or indirectly as in (**d**), below.

(b) Debt/Equity Ratio. This covenant fixes the maximum debt allowed to be incurred by stipulating the ratio of debt to equity which must not be exceeded. (**See paragraph 5.3.5 on computation of the ratio and on the definition of debt.**)

(c) Debt Limitation. Under this covenant the debt which an entity is permitted to incur is limited by stating the maximum absolute amount of debt, with the provision that incurring additional debt is subject to the prior approval of the lender.

(d) Debt Service Ratio. The debt service ratio discussed in paragraph 5.2.4(**e**), above, takes into account not only the amount but also the terms of debt incurred. It is, therefore, a good measure of the ability of an enterprise to incur additional debt. The ratio stipulated in a covenant is frequently 1.5 (**i.e., "funds available" or "sources of funds" as shown in the Cash Flow Statement, equals one and one-half times the projected debt service**).

7.4 Liquidity Covenants

(a) Current Ratio. The covenant establishes the minimum by which current assets must exceed current liabilities. (**See paragraph 5.3.4(c),**

above.) The ratio used depends on the regularity or seasonality of revenues and the credit policy of an entity and thus on the amount of working capital required to finance inventories and receivables. The lower the working capital needs, the lower the ratio can be; less than 1.0 is, however, usually unacceptable.

(b) Quick Ratio Covenant. A covenant setting the standard for the quick ratio is sometimes preferable to a current ratio covenant because it uses a narrower definition of current assets. (**See paragraph 5.2.4(c), above, for discussion.**) If used, the ratio stipulated could be somewhat less than 1.0 because otherwise the required levels of assets in cash, or readily convertible into cash (**e.g., bank accounts, marketable securities and receivables**), may be unrealistically high.

7.5 Other Financial Covenants

Some financial covenants other than those discussed above are sometimes used. Among these are covenants which:

- limit the conditions under which dividends may be paid, usually by reference to the effect of dividend payments on the current or quick ratio;

- limit additional capital investments by the entity beyond a stipulated annual amount by requiring the lender's approval of any investment exceeding that amount;

- require the annual audit of the entity's accounts by an independent outside firm (**commercially operated activity and some non-commercially operated activities**) or by a governmental audit agency (**most non-commercially operated activities**). An audit covenant should always be included in a loan or grant agreement.

** END OF SECTION **

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