GUIDELINES FOR FINANCIAL AND ECONOMIC ANALYSIS OF PROJECTS

The 7 Key Stages or 'steps'[1] of Financial & Economic Analysis are:

1. Links with the key elements of the **LOGFRAME**

2. Analysing the interests of the main **STAKEHOLDERS**

3. How to define the **WITH - AND WITHOUT - PROJECT** Situations

4. **QUANTIFYING BENEFITS** - and comparing them to costs

5. **FINANCIAL VS ECONOMIC**: narrow or wider perspectives

6. Analysing **ASSUMPTIONS** and Risks

7. Summarising conclusions, and **CRITERIA FOR DECISION**

[1] This is not entirely a chronological sequence; it is also 'iterative' in the sense that later steps help to clarify earlier ones –e.g. clarifying the assumptions can improve the cash-flow analysis.

1: Linking with Project Cycle Management and the Logical Framework

The first step in F & E Analysis is to place it in context - in relation to other analyses that may be necessary, and to the Logframe.

- **F & E Analysis is only one of the relevant forms of analysis**: the Project Cycle Management methodology refers also to criteria such as **institutional** capacity, the strength of the **policy** framework, **environmental** soundness, social and **gender** issues.

- It can be used to **make project definition more precise** and in particular the key elements of the Logframe. It can quantify the **problem** to be solved, the necessary **inputs** , the expected **results** , and often also the degree to which the specific objective (**'project purpose'**) is expected to be achieved. *For example, for a livestock project, a problem of low reproductive or growth rates of livestock can be quantified from past statistics – e.g. on the proportion attributable to curable diseases. Necessary inputs and activities can then be calculated; and expected results can be quantified by projecting the effects of the inputs (e.g. vaccines) over the project period. The project purpose (say, improved animal health) can then also be estimated - e.g. growth increased from X% to Y%.*

- It may also be useful to determine by how much the project will contribute to the achievement of the **overall objective**. In practice, this information may be difficult to obtain, in particular if no identification study was undertaken previously. *In the case of the above mentioned livestock project, the overall objective may be to improve the nutrition of the population: an analysis of milk and meat consumption can help quantify how much the project can be expected to contribute to nutrition levels.*

2: Analysis of the Main Entities (Stakeholders)

The second step of Financial and Economic Analysis is to determine which are the entities or 'Stakeholders', and analyse their interests in the project. This sounds simple, but often takes more time than expected!

- **When should the entities / stakeholders be identified?** Stakeholder analysis should be done during the identification of the project (eventually with the help of the PCM Help Desk); if not, it should be done as part of the EcoFin analysis. *The focus is on economic functions: production and/or sale of goods and services, distribution of income, consumption of goods and services. Entities can be individuals, groups of individuals or institutions of many kinds.*

- **Which entities**? A project may involve a vast number of entities whose interests cannot all be analysed. The beneficiaries should come first, followed by the other major entities (e.g. ministry, government…) significantly affected by the project. *In a typical road rehabilitation project, entities to take into account are typically the users of road transportation, the carriers, the Ministry of Transport, the contractors, but also other affected entities in the surrounding area project (e.g. farmers, traders and processors), if there is evidence that they will be significantly affected by the project. Very often, relevant entities are forgotten: e.g. only the Ministry that benefits from the project is analysed; or the users of roads are not considered separately from the carriers - despite evidence that carriers do not always pass on to users the benefits from reduced vehicle operating costs.*

- **The main entities should be analysed separately**. This means that separate cash flows[2] need to be presented. Beneficiaries who behave very differently economically may have to be divided in groups. *e.g. in drinking water supply, women and others.*

- The project may have to be redesigned in order to avoid a **blockage if one of the target groups may lose** from the project. *e.g. poorer farmers may lose in competition with those who can afford fertiliser imported through the project.*

- This analysis should make it clear if the project will face **solvency** problems during the financing period by the Donor, or **sustainability** problems once the financing has ceased *e.g. if there is a financing gap in the recurrent costs of a basic health care project, the project may have to be redesigned to recover some of the costs from the government or the final beneficiaries. If funds are sufficient during the financing period, but insufficient afterwards to maintain the benefits for the rest of project's planned life, such funds must be found or ways indicated to find them.*

In conclusion, it is not always simple to define stakeholders, but it is very important. Briefing the consultants on this before they undertake a feasibility study will definitely improve its quality.

[2] In the EcoFin Manual, a "Flow Balance Account" is also used for the Analysis. The Cash Flow takes into account all monetary flows that actually take place, whereas the Flow Balance Account also includes non monetary in- and outflows (in kind contributions and benefits). Both statements are needed (cash flow for checking the solvency of the project and flow balance account to properly reflect use of resources).

3: Defining the With-Project and Without-Project Situations and possible Alternatives

The third step is to define the "with project" and the "without project" situations.

- **Defining the "without" project situation** is not a waste of time! It involves a degree of arbitrary judgement, but helps to define what the additional benefit of the project is.

- The **"without project" situation is not the "before project" situation,** because without EU financing, the situation would anyway change over time. *A government might for example be able to rehabilitate health centres, but only over a longer period (e.g. in 12 years instead of 4 in the case of EU financing). Similarly, a government might undertake minimum repairs of a road even if no funds are available to rehabilitate it.*

- The **logframe focuses on the "with project situation",** which is correct as one first has to check the internal logic of the project.

- The "with project" and "without project" situations should be **quantified over the full life of the project** - which is not the duration of the project activities (inputs), but usually the expected "life" of the benefits generated by the project. *For example, in the case of the above mentioned health centres, the full life of the project could reasonably be 12 years. In the case of rehabilitated roads, the life could well be ten years (most consultants use 20 years, but this should not be taken for granted).*

- One should avoid presenting a **picture of only one part** of the project. *For example only the part that is financed by the EU, if there is evidence that other sources of funds will be needed or used (government, beneficiaries…). In some instances, there can be tendencies - which should be resisted at all costs - not to consider some costs or benefits (for example the costs of subsidised public services).* This means that, for each of the main stakeholders, all costs and benefits relating to the project should be quantified.

- The "incremental situation" is the "with project" minus the "without project" situation. **In the end the project should generate more net benefits (benefits minus costs) than without the project –** i.e. the incremental situation should be positive. *In practice, this means that in the financing proposal, one should show the profitability criteria (NPV, IRR) and/or efficiency ratios (cost per person trained, per vaccination, per hospital/bed/night…) of the "incremental" situation, and **not** of the "with project" situation - i.e. without deducting benefits which would happen anyway, 'without' the project (this is a common error).*

- The three situations (with, without and incremental) should be summarised in **three cash flows**. Consultants should not derive the incremental situation directly, as there is a risk of omitting some elements.

- The 'with project' situation should be compared with relevant **alternative options** which should be adequately quantified. Justification should be given for the preferred option. *e.g. train 100 persons - or 5 trainers? Each option should be quantified in terms of costs, benefits and feasibility.*

4: Valuing Benefits: Cost-Benefit and Cost-Effectiveness Analysis

The core of financial and economic analysis is to **put a monetary value** on costs and benefits. Costs are usually known, but some benefits may not have a price, and can be difficult to value (= "non-tangible"). This is the case of many projects, notably in the social sectors.

Cost - Benefit analysis is used to value projects with tangible benefits; and **Cost – Effectiveness**[3] analysis to analyse projects with non- - tangible benefits.

Cost - Benefit Analysis -

- values benefits by **direct calculation** *e.g. extra production of rice X value per tonne (- extra production costs, + other benefits……..);* or by **proxies**[4]: i.e. indicators or representative factors which give a more or less reliable value *e.g. in a road project, reduced vehicle operating costs (VOC) are relatively easy to estimate.*

- **includes 'Cost recovery'** (contributions by users to pay for services) in calculating costs, cash flows, solvency and sustainability. It is important to compare such costs with household incomes or any similar statistics to verify affordability. *For example, when final beneficiaries have to pay a fee for water, from which the maintenance of the pumps etc is paid, it is vital to check that this fee can really be afforded by the beneficiaries.*

- allows calculating **profitability criteria** that show the proportion between costs and benefits, and can be used to choose between various possible projects or components.

Profitability criteria[5]

1 - The NPV *is the Net Present Value of the project, using a defined discount rate (rate of loss of value of money over time or opportunity cost of capital*[6]*). It is an absolute figure, an amount that can be compared to the return (NPV) of other investments of the same amount. If alternative projects require investments of different sizes, it is recommended to divide the NPV of each project by the discounted investment, so as to allow comparisons between these projects.*

2 - The IRR *- Internal Rate of Return - is the discount rate that makes the NPV equal to zero. In other words, the IRR should at least be above the opportunity cost of capital in the country where the project takes place.*

Both the IRR and the NPV should be calculated, *as they do not provide the same information*

---

3 This is a common title, although it should be more correctly termed cost-efficiency (least-cost is an efficiency issue)

4 Even if some goods are free, their value may reflect their rarity or the facility of access to them; a typical example is 'willingness to pay' estimates used in the water sector

5 There are other profitability criteria, that can and should be used, such as the payback period (time needed to recover the initial investment without discounting) and the Project's Domestic Resource Cost ratio (the number of units of local inputs needed to generate a unit of foreign currency).

6 = the interest available to the private (Financial Analysis) or Government (Economic Analysis) borrower

Cost - Effectiveness Analysis -

- **analyses non-tangible benefits which cannot be valued** in monetary terms by direct calculation or by proxies

- **focuses on costs per unit of benefit**, and **compares** them with comparable costs elsewhere - *e.g. comparing the cost of vaccinating one person, or of one bed-night in hospital, or of a child's schooling for one year, in the project area; with the costs elsewhere in the country, in neighbouring countries, or even, in certain cases, regionally or world-wide*[7].

- is usually specific to a **sector**, since comparisons are normally only possible within a sector (health, education…) and not between sectors.

Cost - Benefit or Cost-Effectiveness?

- In no case should one assume that **because some benefits are non-tangible, no financial and economic analysis is possible**.

- As most projects include a mixture of tangible and non-tangible benefits, **both types of analyses should normally be done**.

- Even projects with tangible benefits should be submitted to cost - effectiveness analysis, to make sure that **unit costs are reasonable compared to similar projects.** *For example, is the cost / km of a 6-meter-wide bitumen road with shoulders of two meters reasonable compared to similar projects and other roads in the country? Is the cost of a health centre reasonable compared to similar centres in comparable regions or countries?*

[7] When comparing with projects in other countries, these ratios should be expressed in shadow prices in order to be valid.

5: The differences between Financial and Economic Analysis

Financial and Economic analyses have **different perspectives or points of view**: Financial analysis involves examining the activities and resource flows of the main entities (Stakeholders) or groups of entities *separately*. Economic analysis involves examining the impact on society (the economy) *as a whole*. *The two forms of analysis do not therefore provide the same information, but complement each other. Economic analysis usually takes the perspective of the Nation, but can also take the perspective of a region or a sector, if the programme focuses on one of these.*

- **Financial Analysis calculates the incentives for the main stakeholders**, checks the solvency and longer-term sustainability of the project, and helps to design possible cost recovery mechanisms. It prepares the ground for an **Economic Analysis, when the cash flows of the stakeholders are consolidated** into a single cash flow.

- Economic Analysis also provides valuable information on the contribution of the **project in the international context** as well as **domestic effects** in the economy.

  Through Shadow Pricing, it makes it possible to compare the project

  (a) to the supposedly clearly identified objectives of the macro economic policy of the country under analysis
  (b) to the possible objective of competitiveness (or international viability) in the international price system for goods and services (mainly by calculating costs and benefits in equivalent international prices, rather than in often-distorted local prices and comparing them to similar projects in other countries / regions) - and so to assess its "competitiveness".

  Through the Effects method[8] it can estimate (quantify) the impact of a project on:
  (a) economic growth – value added
  (b) government budget (funds) - taxes and transfers
  (c) foreign exchange resources - forex spent and earned
  (d) income distribution - wages and salaries…

- One should always perform a **Financial Analysis before proceeding to an Economic Analysis**. It is useful to **compare the results** of the economic (notably shadow pricing) and financial analyses, as it may reveal that some benefits are transferred between certain stakeholders. *To do so, one needs to track any positive or negative externality for the Nation (or region or world) that may not have been taken into account in the financial analysis. The method used to move from the financial prices to the economic prices and costs has to be well explained and justified with regard to the political macro-economic policy objectives of the country under analysis.*

- Before conducting such Economic analyses, one should **reflect on which issues are crucial** for the success of the project. *For example, if a country is just emerging from a civil war, with low foreign currency reserves and budget resources, an analysis of the Effects may be useful to select the project that will use the least of these resources.*

- Before asking for an economic analysis, especially for the application of the effects method, one should first try to determine what data is available as well as how much time and funding such an analysis would require. *It may be possible to use sector analyses carried out earlier, for example during programming, if they are recent enough. Other international institutions may also have performed such analyses.*

---

[8] The 'Effects method' as defined in the EcoFin Manual analyses the backward linkages of a project. It requires considerable data, but can give useful insights into upstream costs and risks, and distributional issues (-often important in poverty-reduction projects).

6 : Spelling out Underlying Assumptions and performing relevant Sensitivity Analyses

- Financial and economic analysis is based on **estimates,** but the future cannot be predicted with certainty. Feasibility studies often do not sufficiently explain how the planned results were estimated: this makes it difficult both to assess how realistic the proposed scenario is, and to change the project if, for example, some costs change. Therefore -

  - **Assumptions** should be clearly stated and realistic - as in the logical framework. Consultants must spell out clearly the underlying assumptions and provide the (Excel) spreadsheets used in the calculations of costs and benefits.

  - **Sensitivity analyses** must be made on each of the key risk factors to assess their possible effects on the expected benefits - A sensitivity analysis consists of changing the value of key factors such as length of project, costs and discount rate, to assess their impact on benefits

    There should be, at least, an '**optimistic**', an '**average**' and a '**pessimistic**' scenario.

Overall, knowing what assumptions a project is based on, and their possible effects on the planned results, will greatly facilitate its appraisal and implementation.

7: Overall Assessment of the Project

The final step of Financial and Economic analysis, is to **decide whether or not, from a financial & economic standpoint** (other analyses are also relevant, as stated in Stage 1 above)**, to propose the project for financing.**

To do so, the criteria normally used in Evaluations can be helpful: **efficiency, effectiveness, impact, sustainability** and **relevance**.

The questions to be answered, and the relevant techniques of EcoFin analysis, are shown in the following table:

Criteria	Questions	Relevant EcoFin Analysis
Efficiency	Is the project using a minimum of resources and are resources used efficiently? Are the returns of the project adequate (only for projects with tangible benefits)?	**Cost Effectiveness** *(financial and, if applicable, economical - i.e. using shadow prices)* **Cost Benefit Analysis**[13] *(financial and, if applicable, economical using shadow prices)*
Effectiveness	What is the extent to which the project reaches its purpose?	**Financial & if necessary Economic Analysis**, comparing results *(cash flow)* with project purpose
Sustainability	Do the main stakeholders face solvency problems during the implementation of the project? Can the main stakeholders meet the recurrent costs after the end of the project? Is the project competitive (hence viable) internationally?	**Financial Analysis** of the main stakeholders' interests **Financial Analysis** of the main stakeholders' interests **Economic Analysis**: shadow pricing
Impact	What are the effects of the project on the national economy (economic growth, government budget, foreign exchange, and income distribution)?	**Economic Analysis**: effects method
Relevance	Does the project address the real needs of the intended beneficiaries? How well does the project fit with national priorities and reforms undertaken by the government? How well does the project match policies and priorities of the EU?	**Financial Analysis** of the intended beneficiaries (*stakeholders)* **Economic Analysis** *(effects method and shadow pricing*) **Economic Analysis** *(effects method and shadow pricing)*

[13] i.e. profitability