LOGIC MODELS

Description of the technique

Logic models

Logic models are part of a wider family of evaluation approaches that seek to describe programme theory. Other members of this family are 'theory of change' and realistic evaluation. Chen (1990) describes programme theory as "a specification of what must be done to achieve the desired goals, what other important impacts may also be anticipated, and how these goals and impacts would be generated". Chen makes the distinction between two phases in programme theory; 1) normative theory, which provides the rationale and justification for the programme structure and activities, and 2) causative theory, which represents the empirical knowledge about the causal relationship between the intervention and the outcome.

These two phases are reflected in logic models which describe the activities that are thought to bring about change, and links these activities to the results the programme is expected to achieve. Results are generally described in terms of outputs, outcomes and impact. Owen (1999) notes that central to the notion of logic models is the idea of programme causality, the ordering of events in such a way that the presence of one event or action leads to, or causes, a subsequent event or action. While this implies a linearity that is inconsistent with the complexities of programme design and implementation, causal thinking is the basis for programme planning, without which there would be no basis for developing interventions.

In the application of this technique the evaluator follows the opposite logic that the designers do in the design of a programme. Planning and evaluation are two sides of the same coin; the causal chain of the problems and causes is the negative image of the causal chain of objectives and instruments. The evaluator role is to establish the gaps in the causality chain in order to improve the programme.

Logical framework is based on logic models and provides a practical tool for the analysis, design, management, and refinement of programmes. The following chapter provides an introduction to the logical framework approach and technique.

Logical framework

The logical framework technique is an exercise in structuring the component elements of a project (or single programme) and analysing the internal and external coherence of the project. The product of this technique, the logical framework, is a formal matrix presentation of the internal functioning of the project, of the means for verifying the achievement of the goal, and of the internal and external factors conditioning its success. An example of the approach is given in Box 1.

Box 1: Logical framework of a local fishing project

This example concerns a project financed by the European Union as part of its development aid policy. The global objectives (or aims) of the project are as follows:

- raising the standard of living,
- guaranteeing a more stable food supply,
- increasing export earnings,
- increasing employment, and
- using resources in a sustainable way.

The specific objective of the project (or goal) is to generate a higher income for the economic actors in the local fishing sector. To evaluate the achievement of this goal, a series of objectively verifiable indicators can be used, such as the evolution of income from fishing, distribution of income by economic actor (fishermen, industries, transport firms, wholesalers, fishmongers), gender participation and fishing zone.

Among the factors conditioning the achievement of these goals are, in particular, the need for sufficient quantities of consumer goods at affordable prices, as well as sufficient accessibility of other services (health, education, advisory services, etc.).

The expected results are: optimum production, optimum processing of fish, satisfactory commercialisation of fish production, and adequately defined local fishing zones. An evaluation of the achievement of these results may rely on a series of objectively verifiable indicators: number of catches, number of products sold, distance between the fishing zone and the shore, types of fish caught, duration of the fishing, balance in the distribution of catches between fishermen, duration of the sale, time between delivery and sale, depth of resources, and agreement between fishermen on fishing zones.

Among the factors influencing the achievement of the results is, in particular, the fact that demand has to be great enough, as does the level of prices for producers.

The following activities are part of the project: creation of fishing and fish processing co-operatives, particularly by women, making available of fishing equipment, drying sheds and warehouses, organisation of transport, information on demand and the market, training - particularly for women - in new techniques, training in new packaging techniques, adequate information on potential fishing zones, negotiation of agreements between fishermen, organisation of a system of control over fishing activities, etc.
SOURCE: European Commission - DG VIII

Purposes of the technique

The logical framework technique supports the objective definition of a project, as well as its formulation in operational terms, and its implementation, monitoring and evaluation. It also facilitates the:

- systematic, synthesised and comprehensive description of a project;
- articulation and clear grading of objectives;
- clarification of the conditions for the success of the project;
- clarification of the underlying assumptions particular to the project;
- identification of the causal links between resources, results and objectives; and

- identification, during the planning of the project, of success criteria and means for verifying the achievement of objectives.

The technique is most effective when it is prepared through team interaction and engagement with programme stakeholders, and at the earliest phase of the project. In this way it becomes a learning and management tool that can be used during the 'project life cycle' and continually evolve and expand in relation to the environment of the project.

The logical framework is also a project organisation tool which facilitates the formulation of the key stages of a project, i.e. to draw up a detailed budget, allocate responsibilities, plan activities, and draw up the monitoring schedule and terms of reference of on-going and ex post evaluations.

Circumstances in which it is applied

Conceived about thirty years ago in the United States, the logical framework technique has progressively become the preferred methodological tool of development project planners. The approach is currently is use in most national and supranational cooperation bodies, including the European Union.

Its success owes much to its capacity to describe, in an ordered, causal and logical way, the internal functioning of a project in a given environment. It is this faculty which has enabled it to impose itself so rapidly in the field of development co-operation. The logical framework technique has proved to be ideal in the context of simple programmes where the objectives and main actors (from the sponsors to the operators) are clearly identified.

Although this tool clearly tends itself more readily to use in the context of ex-ante analyses or monitoring, in some occasions the strategy of a programme depends on the design of its strategy, on its coherence, so it should be useful to use this technique ex-post, to look for programme success or failures causes, with the aim to determine if the intervention should serve as good practice for others.

The main steps involved

The application of a logical framework to a project necessitates a complete analysis of its context, objectives and strategies.

Step 1. Analysis of the context: The context is the general framework in which the project is situated. By analysing this context, the problems that the project must help to solve are identified. The following are required:

- a definition of the political, institutional, social and economic environment (government policy, characteristics and prospects of the sector, etc.);
- an analysis of the motives and expectations of the beneficiaries and main actors;
- an identification and grading of the problems to be solved and their probable causes;
- regarding government policy, an analysis of other programmes which the evaluand could have synergies with (either positive or negative).

Step 2. Analysis of objectives: The problems that the project is aimed at solving lead to the definition of the project's objectives. Formulating or reformulating them needs to focus on:

- the prospects and the description of the future situation when the problems have been solved;
- the grading of objectives in terms of goals and aims. This distinction between goals and aims is not merely discursive. It meets a methodological need in so far as the construction of a logical framework, in order to be coherent, requires the use of a limited number of main objectives (or aims) and specific objectives (or goals). The use of specific tools for grading objectives, of the "objectives tree" type, is necessary here.
- the visualisation of the set of relations between resources mobilised and aims.

Step 3. Analysis of the logic of the project

The logic of a project generally consists of four different "value levels": resources or inputs (e.g. human, financial, material or regulatory resources), products (outputs), main goals (specific objectives) and aims (global objectives). These levels are related to each other by assumptions of causality (of the "if...then..." kind). Whereas the first three levels are internal to the project, the fourth, that of aims, links the project to a broader programme or policy context which is frequently defined outside of the sphere of project management.

Thus, the vertical logic, or intervention logic, is intended to clarify the intentions of the project while specifying the uncertainties related to their fulfilment. It serves to describe the logical articulation of the different "value levels" as well as the critical conditions influencing their realisation. These critical conditions, whether internal or external to the project, are the expression of the constraints needed to move from one "value level" to another in the logical framework. These moves, of which the causal links are expressed in the form of assumptions, have to be formulated.

The horizontal logic is aimed at identifying and describing precisely that which is produced at each of the four "value levels", by means of two concepts: the Objectively Verifiable Indicators (OVI) and Sources of Verification (SoV) of these indicators.

The OVI correspond to all the criteria likely to show that what was expected was also produced. They are, in a sense, the "operationalisation" of the declaration of intent of the intervention logic, thus providing tangible proof of success at each of the four levels: inputs, outputs, goal and aim. The SoV of these indicators are described by detailing the means and sources of information needed to obtain the required data.

The inter-related nature of the elements of the logical framework can be presented schematically as shown in Box 2.

Box 2: Basic elements of the logical framework

Intervention logic	Objectively verifiable indicators	Sources of verification	Critical conditions
AIM Raisons d'être of the programme to which the project belong	Measurement of the decrease in needs that have to be met	Data from outside the project	
			Causality assumptions "if…goal, then…aim"
GOAL Raison d'être of the project	Elements of the success of the project from the recipients' point of view	Data from outside the project	
			Causality assumptions "if…outputs, then…goal"
OUTPUTS All the concrete steps made in order to achieve the goal	Indicators used to quantify and qualify the outputs and correlation with planned production dates	Data from within the project	
			Causality assumptions if…inputs, then…outputs"
INPUTS All the resources needed to produce the outputs	Monitored inputs	Data from within the project	
			Preliminary conditions before project launching

Source: ACDI (1981) Guide d'utilisation de la Méthode du Cadre Logique dans la gestion et l'évaluation des projets de coopération de l'ACDI, Toronto: ACDI.

Application to the Structural Funds

The advantage of this tool for the evaluation of Structural Funds is its capacity for clarifying and structuring public action and its intentions. Its contribution is further enhanced when public action can be organised around a single main objective, taken here to be the aim. The logical framework technique is used in this case as a procedure for analysing overall project coherence.

Within a complex programme the tool helps to structure the objectives in the form of a tree. The trunk is the aim that branches out into sub-programmes, priorities, measures and projects. The advantage of this type of complete interpretation in steps is its simplicity, but it often proves to be ineffective for grasping complex realities.

Strengths and limitations

- As an analytical process for the planning and monitoring of projects, the logical framework technique has proved, in practice, to be a structuring frame that is rated highly by practitioners. It is a tool that merges information, clarifies links between means and ends, and identifies external constraints and the solutions that can be used to guard against their influence. The tool also facilitates the establishment of a monitoring and

control system from the planning stage of the project. It is, moreover, used to delimit precisely the responsibilities of each actor involved in the execution of the project.

- This technique provides a framework for examining the logic of a project, but it doesn't identify those persons responsible for the project and who have to fill in the framework. This technique should therefore be implemented with the participation of the partners involved in the project.
- The logical framework technique is more difficult to apply to cases of complex projects and programmes with multiple aims.
- Although this tool clearly lends itself more readily to use in the context of ex ante analyses or monitoring. For ex post evaluations its contribution is one of complementing other, less systematic approaches that focus more directly on the main evaluation questions.
- The presence of several decision-makers (sometimes with differing interests) may cause them to design a programme with a "vague" outline and mechanisms. In such cases only the presence of intermediate phases of collective reflection and the regular emergence of strong consensus can ensure the tool's potential is fully realised.
- If the application of the logical framework technique is seen merely as a compulsory technocratic exercise in the planning of the project, its ability to reflect the evolution of the state of the project during its application will be strongly undermined. This could be harmful to all the documents obtained by extension, such as the terms of reference of an evaluation.

Annotated References

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Web resources – logical framework

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http://www.pmsa.com.au/lf_outline.htm

http://www.ausaid.gov.au/ausguide/ausguidelines/1.cfm

http://eng.el.hanashi.ee/docs/6%20-%20C%20Logical%20framework.xls

Key Terms

Logic models
Objective tree
Internal factors
External factors